Universitat de Girona

Understanding student entrepreneurial inclination: The role of University of Girona

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1. Introduction

The professional situations and labour insertion alternatives for university students after graduation are quite diverse, from salaried positions in the public or private sector to self-employed workers. Often, the latter may appear to be overlooked and even underrated when promoting the professional outcomes of a university degree. Nevertheless, it is important to remember that Spain, like most European Union member states, is primarily composed of small businesses. These businesses represent between 95% and 99% of the total companies in their respective countries, which, in turn, generate an average of 50% of employment (EUROSTAT, 2022).

What matters most, however, is the development of high-quality business projects, which are closely related to the motivation that has led the entrepreneur to start their activity as well as their level of education (Guallarte et al., 2021). In this context, it is important to promote and enhance the development of entrepreneurial attitude among university students to ensure that the proportion of Total Early-stage Entrepreneurial Activities (TEAs) with medium to high technological level, interpreted as a percentage of the population aged 18 to 64 involved in entrepreneurial initiatives in the last 3 and a half years, remains stable or tends to rise in the coming years. Despite Catalonia's favourable position in the 2022 national ranking with a TEA of 6.9% compared to Spain's 6%, as indicated by the Global Entrepreneurship Monitor (GEM)(Observatorio del Emprendimiento de España, 2023), this figure is still far from the European Union average (10%) and even more so from the global average (12.9%), where figures of almost 20% stand out in the United States and values close to 30% can be observed in some Latin American countries.

Currently, at the territorial level, Girona stands as the second capital of the Catalan provinces with the highest number of start-ups (ACCIÓ, 2024) and with significant potential growth for entrepreneurs, thanks to the entrepreneurial ecosystem that has been developing around the city in recent years. This is not only a movement driven by various public institutions in the country but also by the network of cooperation created in this environment. *Girona Emprèn*, the *CO-CREIX Entrepreneurship* program of the *Diputació de Girona*, *Girona Emprenedora*, Girona Next and the *Cambra de Comerç de Girona* are some examples of key players in the entrepreneurial ecosystem in Girona. The role of the Universitat de Girona (UdG) should not be forgotten in this framework: The *Càtedra de Joves Emprenedors* (Chair of Young Entrepreneurs) was founded in 2009 with the primary goal of nurturing entrepreneurial spirit and encouraging vocational aspirations by offering them assistance to entrepreneurial initiatives and fostering the creation of new businesses in Girona regions (Càtedra Emprenedors UdG, 2024). Moreover, the university also can impact students' career aspirations through the implementation of subjects in the field of entrepreneurship into all disciplines.

Despite the wide availability of studies on entrepreneurship and its connections with universities and economic growth both nationally and internationally, there seems to be a lack of research regarding the entrepreneurial attitudes of university students. Therefore, with the aim of contributing to this investigation, this Final Degree Project (TFG) will conduct a mixed (quantitative and qualitative) analysis of the entrepreneurial behaviour of students at the University of Girona using data obtained in 2023 from the Global University Entrepreneurial Spirit Student's Survey (GUESSS). This quantitative study will be complemented with a qualitative

perspective through two in-depth interviews. The first interview will provide insights from the current Director of the Chair of Young Entrepreneurs at UdG, whose point of view will help establish the overall entrepreneurial ecosystem in Girona. topic of investigation from a different perspective. The second interview will serve as an example of an alumni whose journey at UdG helped her create what is today considered to be one of the most innovative and promising start-ups in Catalonia (La Caixa, 2024).

This research aims to investigate the variables influencing students' inclination towards entrepreneurship. Additionally, it seeks to analyse the role of the University of Girona in shaping this inclination. By exploring these aspects, this study aims to provide valuable insights into the factors driving entrepreneurial aspirations among students and the contribution of educational institutions like the University of Girona.

2. Theoretical framework

2.1 Conceptual framework

The concept of entrepreneurship, derived from the French word *"entrepreneur"*, has its roots in the 18th century when Richard Cantillon used it "to identify a person who assumed the responsibility for initiating and implementing a project" (Alonso Nuez & Galve Górriz, 2008, p. 7). Ever since then, the word has been adopted and customized by several distinguished economists and thinkers. Table 1 shows how this concept has evolved through time.

Table 1.Definitions of entrepreneur(ship) by renowned scholars

Author (year)	Definition
Cantillon (1755)	An entrepreneur is a person who pays a certain price to resell a product at an uncertain price, thus making decisions about the acquisition and use of resources, consequently assuming the risk in entrepreneurship.
Smith (1796)	An entrepreneur is an individual who undertakes the formation of an organization for commercial purposes, recognizing the potential demand for goods and services, and acting as an economic agent by transforming that demand into supply.
Schumpeter (1934)	Entrepreneurs are innovative individuals who seek to disrupt the status quo of existing products and services to create new products and services.
Drucker (1985)	An entrepreneur seeks change, responds to it, and exploits its opportunities. Innovation is a specific tool of an entrepreneur; therefore, an effective entrepreneur transforms a source into a resource.
Toca (2010)	The entrepreneur is understood as the individual who develops the ability to launch opportunities from basic ideas, innovates through this process, and navigates through environments to achieve the goal that gives rise to their motivation.
BOE- Gobierno de España (2013)	The concept of an entrepreneur is defined broadly as those individuals, regardless of their status as a natural person or legal entity, who are going to develop or are developing a productive economic activity.
OECD (2017)	Entrepreneurship is defined as the phenomenon associated with entrepreneurial activity, which is the enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.
IEC (2024)	One who does not hesitate to carry out their plans, who is not afraid to undertake things, who puts great effort into their ventures.

Source: based on Avila Angulo, 2021

Entrepreneurship has proved to have an impact on enhancing quality of life, fostering economic and social growth, and progressing in important elements such as capital, labour and technology (Cumming et al., 2014; Szabo & Herman, 2012; Zahra & Wright, 2016). Toma et al., (2014) explain the grounds for this in three different and complementary manners:

i. Entrepreneurship fosters competition by increasing the number of businesses which generates knowledge externalities becoming then a force for economic growth and a catalyst for ongoing entrepreneurial activity.
ii. Entrepreneurship is a key driving force both for endogenous economic growth and the establishment of new start-up ventures because of "knowledge spillovers". This concept is commonly used to explain that by sharing and spreading cumulative knowledge, entrepreneurs contribute to a more dynamic and innovative business environment.
iii. Entrepreneurship has a positive influence on economic growth through the generation of diversity and variety among enterprises.

While some academics indicate that economic development is closely tied to innovation and the innovative capacity of enterprise (Szabo & Herman, 2012), there seems to be a disagreement on whether all kinds of entrepreneurship are economically beneficial (Shane, 2009; Zahra & Wright, 2016). Shane (2009) emphasizes that the creation of the average start-up is not the means to boost economic growth and suggests encouraging high quality and high growth companies to being established since the author found a negative correlation between economic growth and new firm formation in the medium-to-long run.

In this context, the involvement of the government comes into play. While a rather drastic approach is proposed by Shane (2009), who opts for direct investment only in the selection of new companies which prove to be more productive than existing businesses, Zahra & Wright (2016) support the idea of "social value creation", which implies the need to line up individual motivations with social good, therefore diminishing the harm to the environment. What seems to be clear though, is that the influence of institutions, including universities, is of paramount importance in today's society and in the development of entrepreneurship (Audretsch, 2014; Guerrero & Urbano, 2012; Meyers & Pruthi, 2011).

The role of universities has substantially advanced over the years since after the second world war, moving from focusing on freedom and independence of academic investigations to becoming a source of wisdom that is now essential for economic development and regional development (Audretsch, 2014). However, the generation and transmission of knowledge to new generations was not enough to guarantee that knowledge would spill over and induce innovative activity. At this point, the idea of **entrepreneurial universities** which needed both to develop into a knowledge-producer and disseminating institution arose (Guerrero & Urbano, 2012).

Since then, the concept of entrepreneurial universities, usually described as "a natural incubator that tries to provide a supportive environment in which the university community can explore, evaluate and exploit ideas that could be transformed into social and economic entrepreneurial initiatives" (Guerrero et al., 2014, p. 415), serves as the crucial link connecting universities to entrepreneurship and innovation.

The culmination of this is the **Triple Helix Innovation Model,** first ideated by Etzkowitz & Leydesdorff (1995), which is the illustration of the interrelation between university, industry and government. The authors observed an essential shift within and between the roles of each sphere for fostering innovation and driving regional development. In another article (2000), Etzkowitz et al., identified the three key processes identified by the tripe helix model that are associated with significant changes in the production, exchange and utilization of knowledge. First, the internal transformation within each helix, which refers to changes occurring within academia, industry and government individually. Second, the influence of one institutional sphere on another describes how one sphere can impact another resulting in institutional transformation. Third, the creation of new trilateral linkages, which involves establishing new connections and networks among academia, industry and government, helps institutionalize interactions, foster creativity and enhance regional cohesion leading to the generation of new ideas and collaborative projects.

Later, Carayannis & Campbell (2009) added a fourth helix to the model, the "media-based and culture-based public", which is said to have the potential to explain how culture, values and the construction of public reality via media can influence national innovation systems. In 2010, Carayannis & Campbell expanded the concept of the Quadruple Helix by integrating a fifth helix into their model of knowledge and innovation: the natural environment. This evolution led to the development of what is now known as the Quintuple Helix Model, which is a theoretical and practical model designed for the exchange of knowledge and resources across five societal subsystems (the *education system*, the *economic system*, the *natural environment*, the *media-based and culture-based public* and the *political system*) in which the transmission of knowledge occurs "subsystem-to-subsystem" (Carayannis et al., 2012).

2.2 UdG, entrepreneurship and innovation

As mandated by the *Ley Orgánica 6/2001, de 21 de diciembre, de Universidades* (España, 2001) it is required for universities to operate under a strategic plan which recognizes and evaluates globalization as a key force in society's evolution. It is the Social Council, along with the Government Council, that are responsible for the development of UdG's own strategic plan which seeks to guide research, teaching models and the university structure itself in line with changing social, technological, economic and environmental dynamics. The need to identify new opportunities, and the fact that these strategic actions make the university more efficient are also additional reasons for the development of a strategic plan.

With the purpose of defining this plan, in 2019 the university community gathered to agree on the envisioned future. After some discussion, three hypotheses were put forward: sum of intelligences, sustainable development and entrepreneurial talent. After further debate, the University Senate "opted for the **sum of intelligences** as a singularity of the UdG's strategic plan" (Universitat De Girona, 2024). This idea intends to be a new source of opportunities that the UdG wants to formulate for its community, and for the region, in line with an evolving humanity, which will be defined by the union between natural, collective and artificial intelligence. However, the final action plan compromised to integrate the strengths of the other singularities as the plan unfolds. Nevertheless, as already indicated in the UdG2030 strategic plan, singularity conveys a specific inclination towards uniqueness, which is deemed to be what provides it with strength and influence. Therefore, striking a balance between the inclination for integration and

the ability to choose a singular focus became crucial to ensure that the transformative impact is not endangered.

However, entrepreneurship is barely mentioned throughout the whole document which would suggest that the idea of being an entrepreneurial university is left behind, or at least it is not a priority. At the same time, the strategic vision aims to build innovative ecosystems and boost transfers in pursuit of win-win results and to unroll a global initiative of modernization and training using 4.0 tools for the university community, putting technological resources at their disposal. The stated objectives of the strategic direction, among other aspects, can be understood as instrumental in fostering a university environment that is more entrepreneurial in nature.

Table 2 provides an overview of all business and innovation-related subjects available across faculties and degree programs within the university in academic year 2023-24. What can be extrapolated from the table is that, besides the Economics and Business Faculty for obvious reasons, the Polytechnic School seems to be the most committed Faculty towards business and innovation since they offer a compulsory subject of 6 ECTS credits for each of their curriculums. The Tourism Faculty also seems to be one of the faculties which is working towards the concept of entrepreneurial university. Both the Faculty of Sciences and the Faculty of Education and Psychology offer some optional courses related to business and innovation only on some of their degrees.

Table 2: Entrepreneurship, business, and innovation courses across UdG faculties and Bachelor's degrees, detailing subject types and corresponding ECTS credits.

	Subject	Typology	ECTS
FACULTY OF SCIENCES			
Biology	Economics and Business Management	OP	3
Biotechnology	Economics and Business Management	C	3
Chemistry	-	-	-
Environmental Sciences	Economics and Business Management	OP	3
FACULTY OF LAW			
Political and Administrative Sciences	-	-	-
Criminology	-	-	-
Law	-	-	-
PSYCHOLOGY AND EDUCATION FACULTY			
Social Education	-	-	-
Early Child Education	Innovation and Educational Research	OP	3
Primary Education	Innovation and Educational Research	OP	3
Pedagogy	-	-	-
Psychology	-	-	-
Social Work	-	-	-
HEALTH SCIENCES FACULTY			
Nursing	-	-	-
Medicine	-	-	-
FACULTY OF BUSINESS AND ECONOMICS SCIENCES			
Accounting and Finance	Business Creation	OP	6
Business Administration and Management	Business plan and entrepreneurship	C	6
	Innovation strategies	OP	6
Economics	Business Creation	OP	6
FACULTY OF HUMANITIES			
Cultural Communication	-	-	-
Catalan Philology	-	-	-
Hispanic Philology	-	-	-
Philosophy	-	-	-
Geography, Territory, and Environment	-	-	-
History	-	-	-
History of Art	-	-	-
POLYTECHNIC SCHOOL			
Architecture Studies	Business	C	6
Technical Architecture and Building	Business	C	6
Agri-food Engineering	Business	C	6
Biomedical Engineering	Organization and Management of Businesses	C	6
Electrical Engineering	Organization and Management of Businesses	C	6
Industrial and Automatic Electronic Engineering	Organization and Management of Businesses	C	6
Industrial Technologies Engineering	Fundamentals of Business Organization	C	6
Computer Engineering	Organization and Management of Businesses	C	6
	Management and communication skills	OP	5
Mechanical Engineering	Organization and Management of Businesses	C	6
Chemical Engineering	Organization and Management of Businesses	C	6
Innovation and Food Safety	Business	C	6
	Innovation and Entrepreneurship	C	5
	Innovation in Packaging	C	5
Design and Development of Video Games	Organization and Administration of Businesses	C	6
	Business Iniciative	OP	5
TOURISM FACULTY			
Tourism	Entrepreneurship and Innovation	C	3
Advertising and Public Relations	Advertising innovation	C	4

Note: C (Compulsory), OP (Optional)

Source: author's own elaboration based on information extracted from the institutional website

Although the methodology employed in each of the subjects is what determines its effectiveness (European Commission, 2008), the main efforts towards fostering entrepreneurial behavior come from the Faculty of Business and Economics Sciences, since the main subjects on offer are in line with business management, business creation and business development.

However, the importance given to entrepreneurship in the Universitat de Girona might appear to be somewhat limited when compared to other universities. For instance, other neighbouring universities, such as Universitat de Lleida, Universitat Autònoma de Barcelona or Universitat Pompeu Fabra, offer a minor in entrepreneurship to all their college students. These minors are usually managed by the Faculty of Business and Economics in collaboration with other faculties such as the Polytechnic School, Faculty of Law or Communications Faculty. At the time of writing, (March 2024), this type of specialization is not available as an option at the University of Girona.

The limitations regarding entrepreneurship go further: although UdG used to offer a Master in Entrepreneurship and Business Development until 2018/2019 there are currently no Bachelor or Master's degrees in entrepreneurship and innovation on offer. However, although other colleges do offer Master's programmes in Entrepreneurship, most of these are offered in associated centers or private universities rather than public ones.

Like many other universities in Catalonia, the University of Girona has its own Chair of Young Entrepreneurs, which was created in 2009 within the established framework of collaboration by Bancaja with diverse universities around Spain, currently under Dr. Laura Vall-llosera's direction. With the objective of enhancing entrepreneurial spirit and vocation, in 2018 the Chair signed a collaboration agreement with the *Fundació Internacional de la Dona Emprenedora* (FIDEM). Through the organization of several entrepreneurial and business creation-related activities and programs, they aim, in collaboration with the promoter institutions, to contribute to nurturing talent, foster leadership and to provide training and opportunities to promising entrepreneurs. The main activities organized by the Chair can be categorized into three main groups: the "elaboration of academic activities", their "own entrepreneurship development activities" and "other activities in collaboration with enterprises, institutions and organizations" (Càtedra Emprenedors UdG, 2024). Furthermore, alongside the influential role played by the Chair of Young Entrepreneurs in promoting the entrepreneurial spirit, the UdG Employment Office features a dedicated section focused on entrepreneurship. This unit and service provides insights into the essence of entrepreneurship and the essential competencies required. Although it appears that this section has not been updated since 2020, it still offers various activities and two programmes, one of which is also offered by the Chair.

3. Methodology

This research used both a quantitative and qualitative approach. On the one hand, the **qualitative design** aimed to provide deeper understanding of the subjects through the development of interviews. Nonetheless, this methodology implies some major limitations, such as including subjectivity, challenges in generalizing findings and potential lack of transparency (Alsaawi, 2014; Miles, 1979). These drawbacks were meticulously considered throughout the analysis process. On the other hand, the **quantitative approach** was employed to examine potential divergences in student's attitudes towards their career intentions by employing statistical analysis. This method sought to ascertain differences, if any, in the perceptions of UdG's involvement towards entrepreneurship across several variables which are detailed bellow.

3.1 Quantitative approach

With the aim to analyse the Universitat de Girona's students' entrepreneurial spirit and behavior, a quantitative approach was first employed. The data utilized comes from a validated online survey conducted by the Global University Entrepreneurial Spirit Students' Survey (GUESS) during the autumn of 2023. To obtain the data, the survey coordination body sends, every two years, the survey to all its country members (one per country), which, in turn, invite their students and university partners to complete the survey. Once these responses are collected, the GUESSS team is responsible for the collection, custody, and preparation of the data (GUESSS, 2023). The survey includes personal information about the students and their future career choices, issues related to their university and their relationship with entrepreneurship as well as their family environment. Other issues beyond our primary interests are also surveyed.

Table 3 illustrates the main methodological details followed in the quantitative process.

Table 3: Methodological details of GUESSS survey.

Characteristic	Value
Methodology	Quantitative
Method	Survey
Instrument	Questionnaire
Master language	English
Translations	Spanish
Type of suvey	Voluntary
Univers	University students
Sample	Universitat de Girona's students
Target sectors	University students at any given level or faculty
Unit of analysis	Individuals
Respondents	Enrolled students
Contacted by	E-mail
Field work start	September 2023
Field work end	November 2023
Email and social media reminders	1
Documentation	Letter of presentation and request for participation (GDPR). Link to survey
Data collection	Software supplier (Qualitrics)
Data analysis	Rstudio 2022.07.1+554
Total number of valid responses	1002

Source: author's own elaboration

3.1.1 The sample

The sample of data from the University of Girona consists of 1002 observations (N=1002). 33.8% (n=339) of the respondents identify as male, 65.5% (n=656) as female, and the remaining 0.7% identify with another gender. Table 4 displays the distribution of year of birth within the sample. Once the age is derived from this data, the average age of the respondents is approximately 22 years, with a maximum participant age of 53 years (n=3) and a minimum age of 17 years (n=3). However, in some of the analysed topics, a two-rank division using the median as a delimiter has been established in order to determine whether there is a significant difference between ages: one covers people aged born between 2003 and 2006 (n=438), and the other comprises those born in 2002 or earlier (n=525).

Table 4: Demographic profile of the sample: year of birth distribution.

Year of birth	Frequency	Percent	Valid Percent
2006	3	0.30%	0.31%
2005	175	17.47%	18.17%
2004	131	13.07%	13.60%
2003	129	12.87%	13.40%
2002	146	14.57%	15.16%
2001	104	10.38%	10.80%
2000	71	7.09%	7.37%
1999	34	3.39%	3.53%
1998	35	3.49%	3.63%
1997	21	2.10%	2.18%
1996	24	2.40%	2.49%
1995	14	1.40%	1.45%
1994	7	0.70%	0.73%
1993	10	1.00%	1.04%
1992	7	0.70%	0.73%
1991	4	0.40%	0.42%
1990	11	1.10%	1.14%
1989	6	0.60%	0.62%
Others	31	3.09%	3.22%
Missing	39	3.89%	
Total	**1002**	**100.00%**	**100.00%**

Source: author's own elaboration based on GUESSS survey data

86.6% (n=868) of the sample indicates to be pursuing undergraduate studies, while only a 7.3% indicate that they are pursuing master's (n=73) and a 5.9% PhD (n=58) studies. In the survey, students were asked about their main field of studies which were divided into 11 categories plus the miscellaneous one. Nonetheless, with the final purpose of studying the behaviour of the different faculties at the Universitat de Girona, some of these categories have been grouped together. The categories Business/Management (n=93) and Economics (n=31) were combined as the *Facultat de Ciències Econòmiques i Empresarials* group (Faculty of Business and Economics Sciences), representing 12.4% (n=124) of the sample; Computer Sciences / IT (n=35) and Engineering (incl. Architecture) (n=148) were joined to form the *Escola Politècnica Superior (Polytechnic School)* with a weight of 18.3% (n=183). Due to a shortage in observations, the categories Science of Art (n=8) and Others were combined into Others (n=91). The remaining categories are represented as follows: Arts / Humanities considered as *Facultat de Lletres* (Humanities Faculty) constitutes 6.1% of the sample (n=61); the Human medicine / Health Sciences, which accounted for 16.6% of the respondents (n=166) is taken as *Facultat de Medicina i Infermeria (Health Sciences Faculty)*; Law students in the *Facultat de Dret* (Faculty of Law) comprise about a 7% (n=69) of the sample; the Natural sciences students in the *Facultat de Ciències (Faculty of Sciences)* represent about 12% of the data (n=119) and lastly, 18.8% of the sample (n=189) represents Social Sciences students, which are gathered as *Facultat d'Educació i Psicologia (Faculty of Education and Psychology)*.

When observing their parents activity, about 65.5% (n=656) of the respondents indicated that none of their parents are self-employed, a quarter (23.2%, n=233) of the survey respondents noted that one of their parents is a freelancer and around 11.3% (n=113) specified having both parents working in their own businesses.

The data presented in Table 5 provides insights into the life satisfaction metrics of the sample. Overall, a notable majority of students (72%) express satisfaction with their life (Q6.1_3), while a rather substantial portion remains neutral (14%), indicating neither positive nor negative sentiments.

Table 5: Life Satisfaction Metrics of the sample

Possible answers on the 7 Likert-scale	Q6.1_1: In most ways my life is close to my ideal.	Q6.1_2: The conditions of my life are excellent.	Q6.1_3: I am satisfied with my life.	Q6.1_4: So far, I have gotten the important things I want in life.	Q6.1_5: If I could live my life over, I would change almost nothing.
(1) Strongly Disagree	3%	2%	2%	3%	6%
(2) Disagree	6%	7%	4%	7%	8%
(3) Somewhat Disagree	10%	11%	8%	11%	12%
(4) Neutral	22%	21%	15%	16%	15%
(5) Somewhat Agree	30%	27%	25%	23%	18%
(6) Agree	21%	22%	27%	26%	21%
(7) Strongly Agree	8%	10%	19%	15%	21%
Number of respondents	999	999	999	994	998

Note: The average score for students in Universitat de Girona is 4.64; 4.76; 5.05; 4.98 and 4.77 respectively.

Source: author's own elaboration using the GUESSS survey data

3.1.2 The model

A logistic regression (Logit model) is implemented in order to determine which factors help determine student's career intention. Particularly the dependent variable was set to be 0= "I don't want to be an entrepreneur" or 1=" I want to be an entrepreneur". The model was used both for immediate intentions after students' studies and 5 years later using the same variables detailed in this section.

For comparison purposes, some control variables were taken into account: age group, as previously detailed, and gender. Additionally, the self-reported political ideology of students (ranked from 1= left to 5=right) was also included in the model since a lower Akaike's information criterion (AIC), which indicates a better fitting model, was obtained on a prior analysis (Sasidharan & Menéndez, 2014).

Given the empirical evidence indicating that the role modelling provided by parents significantly influences the decisions individuals make regarding entrepreneurship (Lindquist et al., 2015; Mahto & McDowell, 2018) this variable is also introduced in the models. This variable, however, was modified into a "yes" or "no" variable as it will only was of interest in this study if either or both of the parents own a business.

Mahto & McDowell (2018) present a theoretical dynamic model of entrepreneurial motivation where individuals' self-assessment plays a crucial role in determining their motivation to pursue entrepreneurial career opportunities. For that reason, question Q4.1_3 (*I am satisfied with my life.*) of the survey was also considered in the models. Additionally, a variable which measures student's perception of being motivated to participate in entrepreneurial activities by UdG was also included in the models. Both life satisfaction and motivation provided by the students'

university were transformed from a 7-point-scale variable into a 3-point-scale, those being "negative", "neutral" and "positive".

Therefore, the specification of the model can be expressed as in equation (1)

$$P(y_i = 1) = \frac{e^{\lambda}}{1 + e^{\lambda}} \qquad (1)$$

$$where\ \lambda = \sum_{j=0}^{2} \beta_{1,j} gender_{j,i} + \beta_2 age_{rank_i} + \sum_{j=1}^{8} \beta_{3,j} Faculty_{j,i} + \beta_4 self_{employed_{parents_i}} + \sum_{j=1}^{3} \beta_{5,j} life_{satisfaction_{j,i}} + \sum_{j=1}^{3} \beta_{5,j} UdG\ involvement_{j,i} + \sum_{j=1}^{5} \beta_{5,j} Political\ spectrum_{j,i}$$

and y_i is the variable of study previously explained.

3.2 Qualitative approach

To obtain a different yet complementary perspective of the entrepreneurial behaviour of students at the Universitat de Girona, two semi-structured interviews were conducted (see Appendix A). A letter of presentation (see Appendix B) was prepared to reach out to the two interviewees, outlining the study's motivation, primary objectives, and details about the interview's structure.

The first subject to be interviewed, Dr. Laura Vall-llosera Casanovas, plays a pivotal role in shedding light on the entrepreneurial attitude and initiatives within the university. As director of the *Càtedra de Joves Emprenedors* since 2016 and Vice-Dean for Students and Career Placement from 2017 to 2021, her insights into how this institution engages with, advocates and enhances the figure of entrepreneurs amongst students and the broader university community offer a valuable perspective. Additionally, her expertise serves as an essential source, enriching the investigation with crucial information on the strategies employed to foster entrepreneurship within the academic environment and its connections to the industry and financial agents.

The second interviewee, Diana Ballart, serves as a highlight of entrepreneurial initiative in the alumni community since she studied the *Màster d'emprenedoria i desenvolupament empresarial* in UdG back to 2017. Diana Ballart is the cofounder and current CEO of The Smart Lollipop, one of the most innovative and promising start-ups in Catalonia according to Premis EmprènXXI (La Caixa, 2024), which awards budding start-ups in Catalonia. Their mission is "to revolutionize medical diagnosis" with a smart lollipop capable of diagnosing diseases through saliva (*The Smart Lollipop*, 2024). The medical candy "collects the sample and cleans it of impurities to conduct diagnostic tests or monitor pathologies" (*The Smart Lollipop*, 2024). Additionally, the device incorporates a biosensor connected to an optical reader, digitizing responses and uploading them to an online platform accessible to both medical professionals and patients.

Table 6 details the methodology followed for the interviews.

Table 6: Methodological specifics of the interviews

Characteristic	Value	
Type of methodological approach	Qualitative	
Type of research	Exploratory	
Type of reasoning	Induction	
Number of cases	2	
Field word	Interviews: March 2024	
Primary source of information	Individual interviews	
Instrument used	Semi-structured interview guideline	
Informant selection criteria	Their role in a relevant organization	
Informants work position	CEO	Director
Number of informants	1	1
Duration of the interviews (minutes)	30	30
Main topics of the interview	Entrepreneurial ecosystem in Girona, creation and development of The Smart Lollipop	UdG Role in entrepreneurship, entrepreneurial ecosystem in Girona
Interview conduction	Online and face-to-face	
Data storage	Digital voice recording and transcription	
Secondary sources of information	Website, SABI and press	

Source: author's own elaboration

4. Results

4.1 Quantitative results

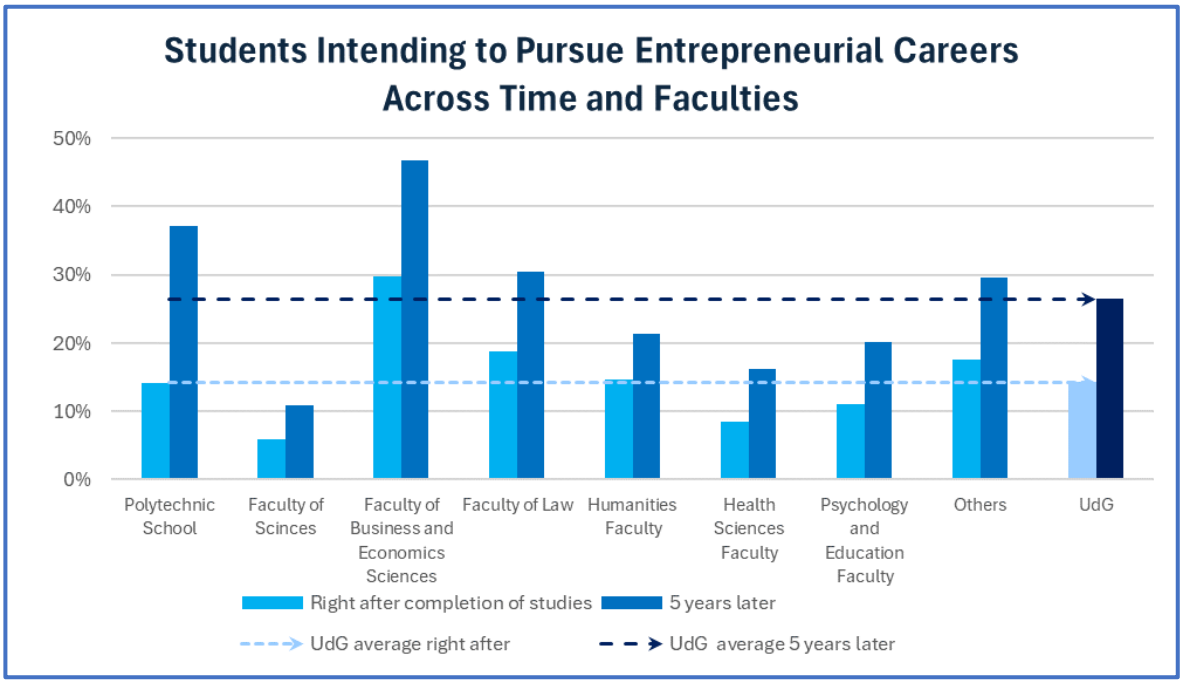
4.1.1 Students' Future Career Intentions

Figure 1 shows the proportion of students expressing intentions to pursue an entrepreneurial career across time and faculties. Figure 1 illustrates that right after the completion of their studies, students from the Economics and Business Faculty present the highest proportion (30%) expressing intent to pursue entrepreneurship, followed by students from the Polytechnic School (14%). In contrast, students in the Faculty of Sciences are the ones less interested in following an entrepreneurial path as their professional career.

What can be highlighted from Figure 1 is the drastic change in the intentions of students after a span of five years after the completion of their studies. The proportion of students intending to pursue entrepreneurial career opportunities seems to increase across all faculties, even getting to double the initial percentage, e.g. the Polytechnic School sharply expands from 14% to 37%. Unlike the results observed immediately after finalization of studies, the proportions achieved after the five years period all reach the 10% threshold.

Despite the low figures in the Faculty of Sciences (around 6% and 11%), and the Health Sciences Faculty (about 8% and 16% respectively), data indicates that, on average, approximately 15% of UdG students plan to chase an entrepreneurial career after they finish their studies and 27% of them 5 years after the completion of their studies.

Figure 1: Students intending to pursue entrepreneurial careers across time and faculties.

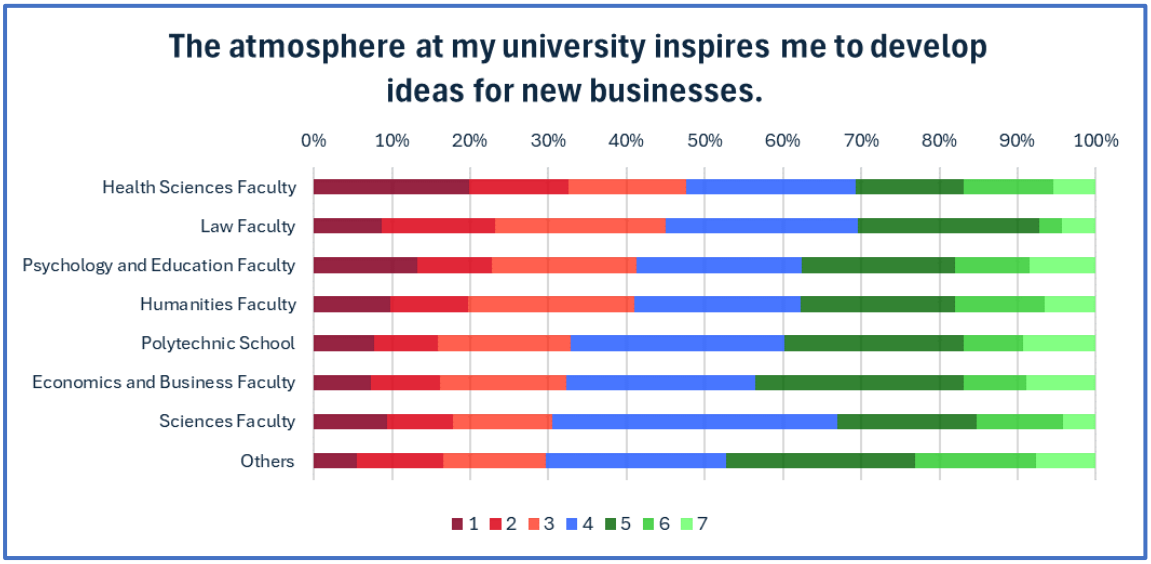


Source: author's own elaboration based on GUESSS survey data

4.1.2 Perception of entrepreneurial intention at UdG

Figure 2 illustrates the levels of perceived inspiration among UdG students to generate new business ideas, categorized by Faculty. Each coloured segment within the bars represents a different response option on a scale from 1 to 7. Figure 2 clearly indicates that those students who do not feel encouraged at all to develop business ideas are those enrolled in the health sciences field (20%) closely followed by peers in the Faculty of Education and Psychology (13%). On a more general scale, those who are generally not quite motivated by the university are the Health Sciences students and those pursuing their studies in the Faculty of Law (accounting for about 45% of the respondents). Interestingly, except for those in the Faculty of Business and Economics Sciences, the category "neutral" (response 4) comprises the largest proportion of the distribution across faculties, averaging around 25% of the sample. From the listed faculties, only the Polytechnic School and the Economics and Business Faculty outweigh the number of students who responded with complete agreement to those who answered with an absolute disagreement. However, when considering the diverse degrees of agreement and disagreement together, without bearing in mind the neutral position, quite a balanced distribution emerges between the two groups.

Figure 2: Perceived inspiration to develop new business ideas at UdG, categorized by faculty.

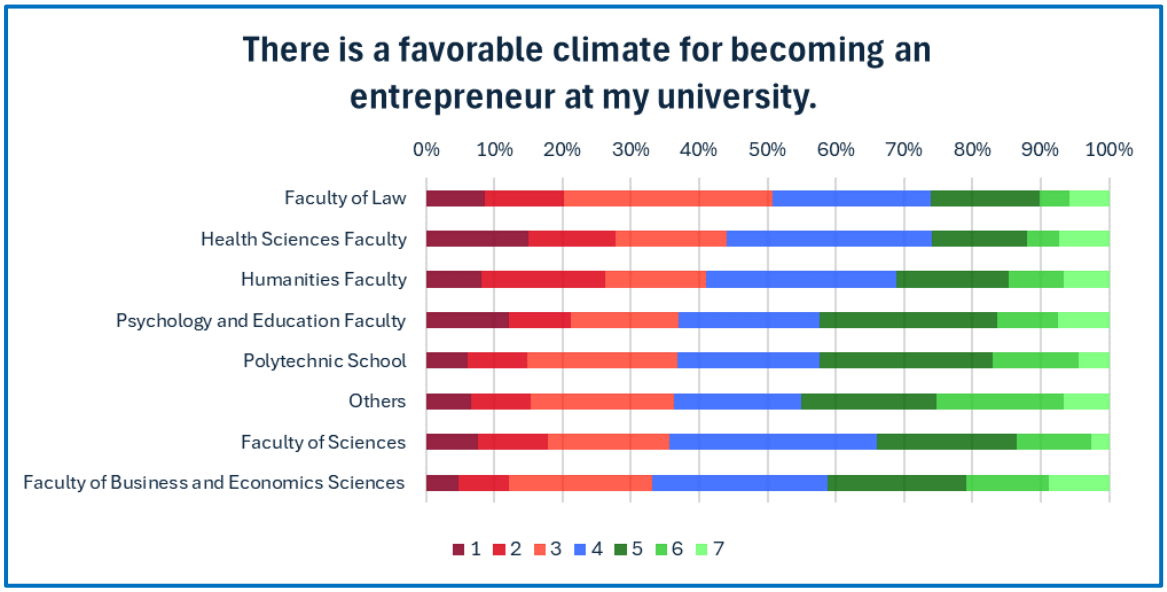


Note: responses are rated on a Likert-scale from 1 to 7, where 1 indicates strong disagreement and 7 indicates strong agreement.

Source: author's own elaboration based on GUESSS survey data

The responses across faculties to the statement "*There is a favorable climate for becoming an entrepreneur at my university*" is shown in Figure 3, where a similar pattern to the previous Figure can be observed. First, it is the Faculty of Business and Economics Sciences that ranks this aspect the highest both because the proportion of students indicating their absolute disagreement (response 1) is the lowest across the faculties and the proportion corresponding to the complete agreement is the largest. Figure 3 also illustrates that the Faculty of Health Sciences (15%) again stands out with the highest proportion of students indicating a firm rejection of the statement, surpassing the proportions observed in the other faculties.

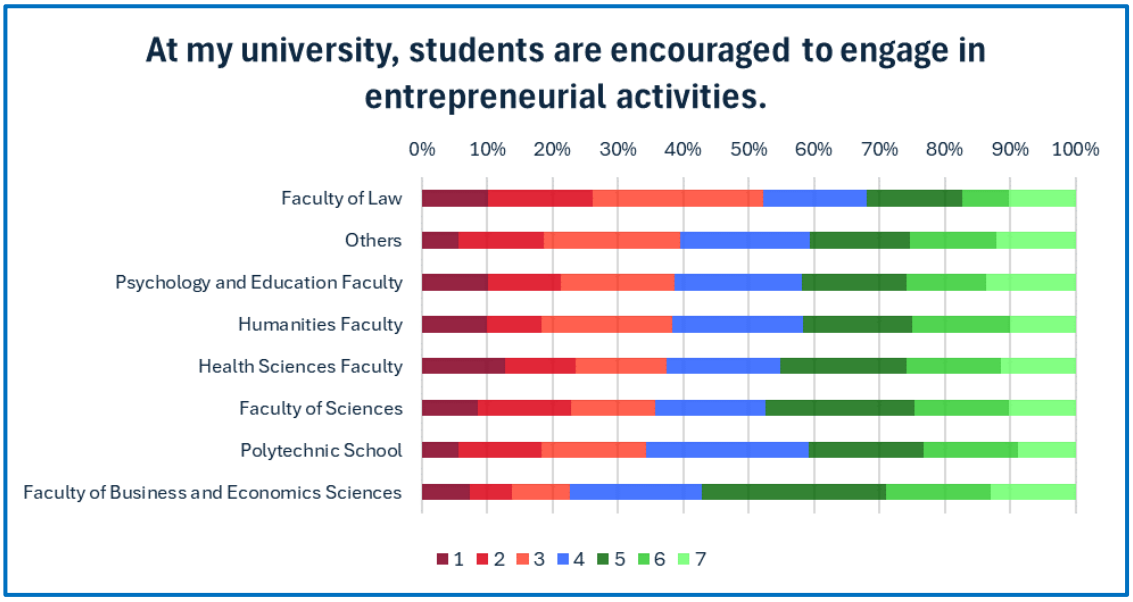
Figure 3: Student perspectives on entrepreneurial environment at UdG



Source: author's own elaboration based on GUESSS survey data

Figure 4 shows UdG student's perception about being encouraged to engage in entrepreneurial activities. From the responses it can be deduced that most of the university's students feel supported to undertake entrepreneurial activities. However, the Faculty of Law students appear to be, on average, the least motivated in this context since half of the responses correspond to the disagreement block (responses 1-3). Both the Faculty of Education and Psychology and Faculty of Business and Economics Sciences have the highest proportions of students indicating absolute agreement (response 7), suggesting that students from these faculties feel highly encouraged to engage in entrepreneurial activities at the university. Furthermore, it is noteworthy to observe that while some faculties, such as the Polytechnic School (s.d.=3.11) and the Humanities Faculty (s.d.=3.5), show relatively balanced distributions across the Likert-scale response options, others, such as the Faculty of Business and Economics Sciences (s.d.=7.9), demonstrate more uneven responses.

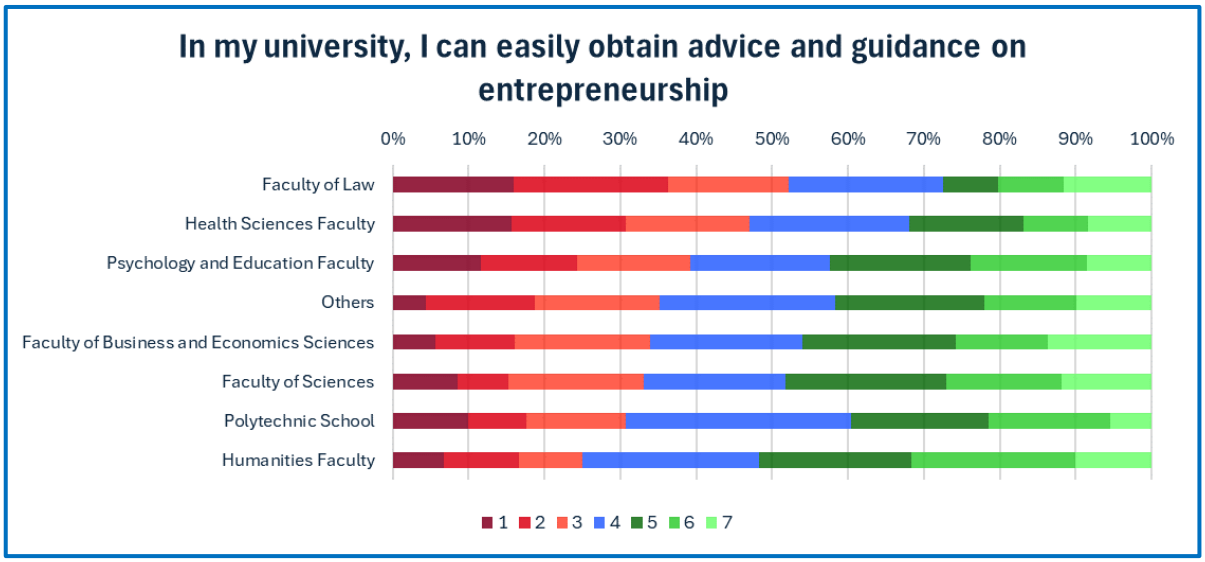
Figure 4: UdG Student Perception of Entrepreneurial Encouragement



Source: author's own elaboration based on GUESSS survey data

The responses of students from the different faculties at UdG to the statement "*In my university, I can easily obtain advice and guidance on entrepreneurship*" are depicted in Figure 5. Similarly, Business and Economics students have the highest proportions of students indicating strong agreement (response 7, 14%), suggesting that they find it easier to obtain advice and guidance on entrepreneurship. Unlike in previous results and still considering the strongest degree of agreement, students in the Faculty of Law take the second position in raking the of access to advice. Nonetheless, it would also appear that the students in this faculty are, at the same time, the most dissatisfied since more than half of them show disagreement with the statement. Although the fact that the sample for this faculty is the smallest (n=60) should not be overlooked, on average, it is fair to say that the Humanities Faculty is the one to hold the lowest proportion of students in disagreement (25%).

Figure 5: Perceived Ease of Entrepreneurial Guidance Across Faculties



Source: author's own elaboration based on GUESSS survey data

Table 7 presents the coefficients and confidence intervals obtained from the logit model, where the dependent variable signifies whether a student intends to embark on an entrepreneurial career (y=1) immediately after completing their studies (Model 1) or after a period of 5 years (Model 2). Despite the fact that the variables cannot fully explain the dependent variable, probably due to missing relevant elements, some significant variables are observed. The first thing to note is that the gender (woman) category is only significant in the first model. Secondly, the different categories in the faculty variable seem to present a similar attitude in both models. However, the Faculty of Law is only significant in the model analysing intentions 5 years after the termination of students' studies and an inverted behaviour is observed regarding the Polytechnic school.

When it comes to its interpretation, the logit model requires an odds ratio (OR)[1] interpretation (see Appendix C for results). Females have an OR=0.447, statistically significant at 99%, which means that woman have 55.3% less intention to become an entrepreneur than males right after they graduate. Students in the humanities field present 60.3% less of aspiration of undertaking an entrepreneurial career than those in business and economics. Highly similarly, health sciences students show 64.6% less intention of doing so. Students in the Faculty of Sciences seem to be the most reluctant to taking on beginning their journey as entrepreneurs: their intention reaches a decline of 84.3% in contrast to those in the Faculty of Business and Economics Sciences. Again, very equally, students in the Polytechnic School and the Faculty of Education and Psychology also have less intention to embark on this journey than the business and economics students at 68.2% and 65.9% respectively. Although the interpretation of the political spectrum should be conducted cautiously due to the fact that the perceptions of political terms are heterogenous (Yeung & Quek, 2024), it is noted that, in both models, the odds of aiming to be an entrepreneur increase as the self-vision of students moves from far-left to centre and from the former to right wing More specifically, the odds of hoping to be a businessperson raise by 116% and 105% respectively.

[1] "The **odds** are a way of representing probability, especially familiar for betting. For example, the odds that a single throw of a die will produce a six are 1 to 5, or 1/5. The odds is the ratio of the probability that the event of interest occurs to the probability that it does not. **Odds ratios** have become widely used in medical reports. There are three reasons for this. Firstly, they provide an estimate (with confidence interval) for the relationship between two binary ("yes or no") variables. Secondly, they enable us to examine the effects of other variables on that relationship, using logistic regression. Thirdly, they have a special and very convenient interpretation in case-control studies." (Bland & Altman, 2000)

Table 7: Student Intentions for Entrepreneurial Careers: Coefficients & Confidence Intervals.

	Dependent variable:	
	right after completion of studies	5 years later
	(1)	(2)
Gender (female)	-0.818*** (-1.226, -0.409)	-0.014 (-0.345, 0.316)
Gender (Other)	-0.001 (-1.970, 1.969)	-0.223 (-2.125, 1.680)
Date of birth (2003-2006)	-0.194 (-0.579, 0.192)	-0.213 (-0.515, 0.088)
Faculty (Humanities)	-0.925* (-1.726, -0.124)	-0.853** (-1.512, -0.193)
Faculty (Health sciences)	-1.039*** (-1.676, -0.401)	-1.209*** (-1.745, -0.673)
Faculty (Law)	-0.670 (-1.407, 0.067)	-0.678* (-1.291, -0.066)
Faculty (Sciences)	-1.851*** (-2.728, -0.974)	-2.094*** (-2.842, -1.346)
Faculty (Polytechnic School)	-1.146*** (-1.721, -0.571)	-0.290 (-0.753, 0.174)
Faculty (Pshychology and Education)	-1.076*** (-1.709, -0.444)	-0.932*** (-1.437, -0.427)
Self-employed parent (yes)	0.279 (-0.110, 0.669)	0.052 (-0.261, 0.365)
Life satisfaction (neutral)	-0.631 (-1.400, 0.138)	-0.315 (-0.880, 0.251)
Life satisfaction (positive)	-0.102 (-0.660, 0.456)	-0.213 (-0.654, 0.228)
Political spectrum (left-wing)	0.279 (-0.275, 0.833)	0.053 (-0.352, 0.458)
Political spectrum (center)	0.773** (0.234, 1.312)	0.620** (0.211, 1.030)
Political spectrum (right-wing)	0.720* (0.050, 1.390)	0.889*** (0.357, 1.422)
Political spectrum (far-right)	0.239 (-0.749, 1.227)	0.346 (-0.472, 1.164)
Entrepreneurial UdG motivation (neutral)	0.354 (-0.150, 0.859)	-0.078 (-0.492, 0.335)
Entrepreneurial UdG motivation (positive)	-0.098 (-0.542, 0.346)	-0.069 (-0.410, 0.272)
Constant	-0.806 (-1.650, 0.038)	-0.309 (-0.996, 0.378)
Observations	754	754
Log Likelihood	-264.891	-385.739
Akaike Inf. Crit.	567.783	809.477

Note: Reference categories: male; date of birth 1970-2002;
Business and Economics Faculty;
no self-employed parent; negative life satisfaction;
far-left political spectrum;
negative entrepreneurial UdG motivation.
p<0.1*; p<0.05**; p<0.01***
Source: author's own elaboration based on GUESSS survey data

4.2 Qualitative results

Dr. Laura Vall-llosera's interview provided deeper insights into what Universitat de Girona does to promote and help students in regards of entrepreneurship. Additionally, she also gave her perspective on the entrepreneurial ecosystem in Girona in relation with the university. When asked about which are, to her understanding, the key stakeholders at the provincial level of Girona for promoting university entrepreneurship, she recognized that over the last 12 years, the role of the Chair of Young Entrepreneurs has gained some importance since they have been putting themselves in the spotlight. Nonetheless, she made a distinction between technology-based and non-technology-based entrepreneurship. From what she has experienced, her feelings are that those who plan to establish a technology-based company, which usually emerge from the research conducted in university, have a clear idea of who they need to reach out to in order to proceed and move forward with the idea: *Oficina d'Investigació i Transferència Tecnològica* (Office of Research and Technology Transfer). On the contrary, those who do not plan to create a technology-based company, seem to be lost in terms of guidance provided by the university since she argues that "*We have it spread widely, or we have it little protocolized*".

When inquired about the role of the Chair of Young Entrepreneurs, she stated that its main goal is to foster entrepreneurship among university students, and they take actions in this direction. She also declared a couple of times that "*We do not advise because we do not have the profile to do it and we do not have the time either"* and that, despite that, they have a large network of contacts to whom the Chair can refer students needing counsel on entrepreneurship. Additionally, Laura provided information on the several programs they coorganize such as the *Consolida't, Efecte Mosquit, càpsules d'emprenedoria* and conferences for secondary school students. According to Laura, the resources and opportunities that students benefit from when participating in these programs are quite different: "*From preparing accounting plans, from Canva, how to speak in public, to designing your landing page*".

Laura expressed her belief that the rest of the faculties know of the Chair's existence, yet she feels it would be beneficial to students if more lecturers knew of and transmitted its presence to their pupils. However, the way to make the Chair noticeable is by carrying out more activities but "*Sometimes the time we have is what it is".* Despite that and as director of the Chair of Young Entrepreneurs, she declared that she always tries to get different lecturers involved in the development of activities so that they can easily spread their knowledge.

Table 8 displays the key quotes obtained from Laura Vall-llosera's interview divided into three main topics: entrepreneurial ecosystem in Girona, the UdG role in entrepreneurship and the Chair of Young Entrepreneurs's responsibilities.

A global conclusion from the interview is:

There are many initiatives available in the territory and in the University, but they are much atomised and do not work in a coordinated manner. The Chair has limited time and influence to make a huge difference among students despite the efforts made. A centralisation of all entrepreneurial activities was highly regarded as needed.

Table 8: Key quotes from Laura's (Chair of Young Entrepreneurs) interview

Entrepreneurial ecosystem in Girona	*""In the entrepreneurial ecosystem of Girona we could say that there are two networks that work very well: the more **institutional channel** and the **informal channel**, which Girona being small, everyone knows each other and works very well."*	*"The agents that collaborate in university entrepreneurship are diverse depending on whether or not it is **technology-based entrepreneurship**."* *"Its function, at the beginning, is more the accompaniment at the level of thinking about the process."*
UdG	*"I think when someone wants to be an entrepreneur here, they don't really know where to go. It should be centralized."*	*"Just as someone who comes out of a research group, is very clear that they have to go to the OITT, it gives the feeling that what is not technology-based, we have a lot scattered or we have little protocol."*
Chair of Young Entrepreneurs	*"It was created to promote entrepreneurship among university students, this is as broad or as poorly defined as you want."* *"We do activities and programs **not only with university students**, but also with high school students and alumni."*	*"I would like them to get to know us more, but of course, we should do more activities and sometimes the time we have is what it is."* *"We do different activities that are our own and then we do **activities in collaboration** with other institutions, such as the University Entrepreneurship Network."*

Source: author's own elaboration

Diana Ballart's interview served as an example of a former student at the University of Girona who was encouraged by her lecturers to take up on a challenge that resulted in the creation of what is nowadays one of the most promising start-ups in Catalonia according to La Caixa (2024). Certainly, it was also her motivation and her great interest in starting a project that pushed her to participate in the iFest Dream BIG Challenge since she considered the master's to be an investment for her.

After winning the competition, she found herself immersed in substantial validation from the media and other stakeholders. It was at that point, she explained, that she began seriously considering implementing her idea as a startup. Diana found her first partner, an expert in marketing medical devices, in an entrepreneurial event, who later brought the second partner, a pediatrician. Together, they collaborated with other entities which contributed to obtaining the first results while still looking for capital.

When considering significant factors for success, based on her experience, she stresses out the importance for entrepreneurs to gain knowledge on businesses, investment, and strategy as well as the need to get to know the partners you start your business journey with. Additionally, Diana also declared that her enormous motivation, boosted due to the fact that she never encountered drawbacks that stopped them from moving towards their ambition, was (and still is) a key element in The Smart Lollipop success.

Although it was learnt from the interview that they collaborated with the University of Stockholm, University of Girona's cooperation was not mentioned until we requested for that information. Diana said that back then, UdG did not have any programmes on offer as they have nowadays. Furthermore, she explained that since The Smart Lollipop is not a spin-off, they are not related to the UdG. Nevertheless, the start-up has received financial support from the institution which sponsored their participation in a program in Silicon Valley and rewarded them with an exhibition stand at the Mobile World Congress—an investment that, as Diana notes, is rather significant at an early-stage start-up.

Table 9 presents the significant quotes extracted from Diana Ballart's interview, categorized into three key subjects: the support provided by UdG and the institution's contribution to the idea formation, the implementation of The Smart Lollipop initiative and some insights into the factors for achieving success.

The key message of the interview is reflected below:

As a former university student and current entrepreneur, Diana highlighted the role of university support, networking, and practical experiences in the entrepreneurial journey. The importance of collaboration and securing initial funding were also emphasized.

Table 9: Key quotes from Diana's interview

UdG support and contribution to idea formation	*"In the master's degree, Andrea proposed us to go to an event of innovation, entrepreneurship and technology organized by Catalunya Emprèn where a challenge was posed to be solved through design thinking. We were the winners."* *"I knew I wanted to set something up, but above all I did the master's degree to develop business skills and ended up becoming an entrepreneur as a result of an experience I had in the master's degree."* *"Then we went to present the idea at the Mobile World Congress, where it had great validation, but it was only an idea."* *"We are not spin-offs, which means that we have no link with the University but we have received their support twice: a small sponsorship to go to a program in Silicon Valley and paying for a stand at the Mobile World Congress."*
The Smart Lollipop initiative- the implementation	*"The first partner, Lorena, I met her at an entrepreneurship event, and she introduced me to Roger, the second partner. "* *"We made collaborations that helped us, without having many resources, to have some first results."* *"Once we decided to found the SL, they awarded us a grant of about € 110,000, which we used to hire the first researcher who collaborated with Stockholm University."*
Insights into success	*"I've always stayed motivated in part because we've always made progress and that's very important."* *"Entrepreneurs are tried to be trained a lot in business, investment, strategy... and it's absolutely necessary."* "It's also very important at the beginning to show up everywhere they give you money. We have raised about € 50,000 only with pitch competition prizes." "Then we have to choose people who complement our profile, that what I cannot contribute is contributed by the other and that we understand each other on a personal level."

Source: author's own elaboration.

5. Conclusions

The existence of entrepreneurship, understood as the activity of individuals who invest resources to acquire and resell products or services, goes as far back as ancient times where trade and commerce played fundamental roles in societal development (Feliu & Sudrià, 2013). However, over the decades, the concept of entrepreneurship and the role of the entrepreneur have evolved and spread to society, transforming into the process of identifying, creating and seeking opportunities by adapting innovative ideas into viable businesses while driving through uncertainties and taking risks. The literature review has justified the **importance of entrepreneurship in economic development** while it has also stressed the drawbacks. Additionally, the conceptual framework has settled the connection between the function of universities and innovative entrepreneurship, therefore implying a need to establish entrepreneurial universities.

The usage of both **qualitative and quantitative data** helped to study the entrepreneurial intentions of students at the University of Girona and the underlying action plan from the institution to foster entrepreneurship among its student's community.

The quantitative results illustrate some differences on students' careers intentions across faculties. Except for the Faculty of Law, it is fair to say **that those faculties that offer more subjects related to entrepreneurship** or, in its absence, business or innovation **have a higher proportion of students aiming to be entrepreneurs**, either right after they finish their studies or in a 5-year gap. In fact, the Polytechnic School, which seems to be the only Faculty that includes compulsory business related subjects in their degrees' curricula, is the only faculty that shows a surprising turn on the results from right after the completion of studies and 5 years later: while there may be initial disparities in entrepreneurial aspirations between Polytechnic School graduates and those from the Faculty of Business and Economics Sciences, these differences disappear over time. After five years, graduates from both faculties exhibit similar inclinations towards starting a business, indicating a **convergence in their entrepreneurial inclination**. For that reason, a suggestion to include specific coaching about entrepreneurship or any related topic into the subjects through the proper preparation of lecturers seems reasonable. In her interview, Laura Vall-llosera also pointed out this **need to implement more education of entrepreneurship across the diverse study fields**.

In contrast to findings from previous research that suggested a positive influence of having self-employed parents on entrepreneurial intentions among their children, the data analysed in this study did not reveal a significant relationship between parents working as entrepreneurs and student's aspirations to become entrepreneurs. This unexpected result could be explained by the current taxation system in Spain or the lack of relevant explanatory variables.

Overall, the findings suggest that students' perceptions of the UdG as a promoter of entrepreneurship and its ability to generate a favorable and supporting environment towards entrepreneurship is neither positive nor negative. As highlighted in previous sections, however, there are differences across faculties within the university that should not be overlooked. The results indicate that, despite the university's efforts and resources aimed at fostering entrepreneurship, most of the students do not perceive these initiatives as enough. This could indicate a potential gap between the university's intentions and student's expectations regarding

support for entrepreneurial activities. Further research into specific factors influencing student perceptions across the various faculties could provide valuable insights for boosting entrepreneurial enthusiasm among students.

Although many students feel that more could be done in this field, Diana Ballart serves as an example of a student who took advantage of the opportunities she was presented with. Unlike others, it was probably her willingness to get involved in any suggested activity that got her to participate in the Ifest Dream Big. Even though she explained that her start-up didn't participate in any of the programs organized by the Chair of Young Entrepreneurs or the university, she pointed out that by that time, some of these programs were not in offer.

Students expressing difficulty in accessing advice may not be coincidental, as Laura Vall-Ilosera highlighted a broader issue of decentralized entrepreneurship support at the university. According to her observations, aspiring founders of technology-based ventures, often originating from university research, typically have a clear pathway to the Office of Research and Technology Transfer for guidance. Conversely, students not pursuing technology ventures appear to lack centralized guidance.

One limitation of the data from the survey is its restricted number of control variables and the fact that individuals are surveyed only once. It would be interesting to explore whether students' intentions shift across time, and its reasoning behind these potential changes, and to study if students meet their career intentions.

The elaboration of my Final Degree Project has allowed me to put in practice and understand further some of the skills and knowledge learned throughout my journey in the Faculty of Business and Economics Sciences. More precisely, I have been able to gain expertise in scientific theory research related to entrepreneurship as well as to improve in research findings communication. This journey not only has strengthened my academic skills, but also has prepared me for future ventures in my life.

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Appendices

Appendix A: Interview guidelines

Laura Vall-llosera's interview: Director of the Chair of Young Entrepreneurs

1- Background acadèmic i rol a la UdG

1 - Què has estudiat?

2- A què et dediques i quin és i quin ha estat el teu rol a la UdG?

2- Ecosistema emprenedor a Girona

1- Quins són els agents clau del territori (província de Girona) pel foment de l'emprenedoria, en general, i emprenedoria universitària, en particular?

2- Quina és la seva principal funció?

3- Funcions, objectius i programes de la Càtedra

1- Amb quina finalitat neix la Càtedra?

2- Quines són les funcions i objectius de la Càtedra?

3- Podries indicar-me alguns programes o iniciatives que dueu a terme a la Càtedra per donar suport a l'emprenedoria entre els estudiants a la nostra universitat?

4- Quins recursos o oportunitats específiques tenen els estudiants interessats en l'emprenedoria?

5- Quins coneixements i habilitats s'enduen els estudiants de participar en aquests programes generalment?

6- Explica'm com s'involucra activament l'estudiant en activitats emprenedores?

4- Col·laboració i feedback

1- Com col·labora la Càtedra amb socis del sector o agents financers per potenciar l'experiència emprenedora dels estudiants?

2- Podries compartir algun cas d'èxit que hagi rebut el vostre suport?

3- Un cop s'ha ajudat a l'estudiant, es busca el seu feedback per a futures millores en els programes? Si és així, com es cerca aquest feedback?

Diana Ballart's interview: UdG alumni, CEO and cofounder of The Smart Lollipop

1- Background acadèmic

1- Què has estudiat?

2- En fer el màster en innovació i desenvolupament empresarial, tenies ja en ment muntar una empresa o la idea de crear una start-up va sorgir com a resultat de les experiències i aprenentatges durant el curs?

2- De la idea a la materialització del producte

1- Què et va inspirar a començar una empresa centrada en **revolucionar el diagnòstic mèdic**, i com ha sorgit la idea d'un xupa-xup intel·ligent?

2- Pots compartir la **història** que hi ha darrere de la creació de la teva startup i **la visió inicial** que tenies per a ella?

3- Pots explicar el procés de **desenvolupament** de The Smart lollipop, des de la idea inicial fins l'actualitat?

3- Aprenentatges d'aquesta etapa

1- Al llarg d'aquests anys, quina ha estat la teva principal **motivació** a seguir endavant? Hi ha hagut algun esdeveniment que t'hagi fet replantejar-te la continuïtat del projecte?

2- Què és el **més gratificant** del teu camí com a emprenedora?

3- A nivell d'emprenedora, quins **avantatges i inconvenients** t'has trobat que t'hagin sorprès?

4- Pots compartir algunes **lliçons** que hagis après en aquest camí?

4- Suport de la UdG i ecosistema gironí

1- La Universitat de Girona disposa de diversos **programes de suport a idees innovadores** i revolucionaries com la teva. **Has acudit o fet ús** d'algun d'aquests programes? Com va **apostar** per tu la UdG inicialment? Quins recursos et va oferir la UdG com a ex-estudiant?

2- A Girona hi ha una àmplia xarxa d'emprenedors i de mitjans que contribueixen al desenvolupament d'start-ups, **has col·laborat amb altres organitzacions** per tirar endavant el projecte? Com han contribuït aquestes organitzacions a donar forma a l'actual The smart lollipop?

3- Abans d'endinsar-te en aquest món, **quina era la teva visió dels emprenedors**? T'haguessis imaginat mai que series on ets avui en dia?

Appendix B: Letters of presentation to the interviewees

Universitat de Girona

TFG: Actitud emprenedora estudiants UdG

Estimada Laura Vall-llosera

Aquesta és una invitació formal a la participació a una entrevista.

Segons diversos estudis, l'emprenedoria ha demostrat tenir un impacte en millorar la qualitat de vida, fomentar el creixement econòmic i social, i avançar en elements importants com el capital, el treball i la tecnologia. Per aquest motiu, els governs i les universitats col·laboren amb un objectiu comú: fomentar l'emprenedoria universitària i innovadora.

Aquest Treball de Final de Grau (TFG) pretén investigar l'actitud emprenedora dels estudiants de la Universitat de Girona a través d'una anàlisi quantitatiu utilitzant dades recollides en l'enquesta realitzada per la Global University Entrepreneurial Spirit Students' Survey (GUESSS). Complementàriament, es fa una anàlisi del rol de la UdG envers l'emprenedoria i un cas d'estudi que serveix com a exemple dins el món emprenedor gironí.

L'objectiu principal de l'estudi és conèixer quins factors afecten més significativament l'esperit emprenedor dels estudiants de la UdG així com determinar l'abast d'aquesta a l'hora de fomentar la innovació i l'emprenedoria.

L'entrevista s'estructurarà en 4 grans apartats:
1- Background acadèmic i rol a la UdG
2- Ecosistema emprenedor a Girona
3- Funcions, objectius i programes de la Càtedra
4- Col·laboració i feedback

Rebre la nostra sol·licitud implica participar en una entrevista que permetrà conèixer de primera mà la realitat de la situació emprenedora a la Universitat de Girona.
En el cas de donar permís explícit, l'entrevista serà enregistrada per a la seva futura transcripció i anàlisi.

Girona, 7 de març 2024

Autora TFG: Núria Porta
Tutora: Dr. Andrea Bikfalvi

portasola@gmail.com
andrea.bikfalvi@udg.edu

Universitat de Girona

TFG: Actitud emprenedora estudiants UdG

Estimada Diana Ballart

Aquesta és una invitació formal a la participació a una entrevista.

Segons diversos estudis, l'emprenedoria ha demostrat tenir un impacte en millorar la qualitat de vida, fomentar el creixement econòmic i social, i avançar en elements importants com el capital, el treball i la tecnologia. Per aquest motiu, els governs i les universitats col·laboren amb un objectiu comú: fomentar l'emprenedoria universitària i innovadora.

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L'entrevista s'estructurarà en 4 grans apartats:
1- De la idea a la materialització del producte
2- Ecosistema emprenedor a Girona
3- Aprenentatges d'aquesta etapa
4- Suport de la UdG i ecosistema gironí

Rebre la nostra sol·licitud implica participar en una entrevista que permetrà conèixer de primera mà la realitat de la situació emprenedora a la Universitat de Girona.
En el cas de donar permís explícit, l'entrevista serà enregistrada per a la seva futura transcripció i anàlisi.

Girona, 7 de març 2024

Autora TFG: Núria Porta
Tutora: Dr. Andrea Bikfalvi
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andrea.bikfalvi@udg.edu

Appendix C: Odds Ratios Logit Model

Odds Ratio Logit model After completion of studies	Odds ratio	Inferior limit	Superior limit
Intercept	0.447	0.160	1.204
Gender (woman)	0.441	0.270	0.717
Gender (others)	0.999	0.047	8.002
Date of birth (2003-2006)	0.824	0.518	1.300
Faculty (Humanities)	0.397	0.143	0.987
Faculty (Health sciences)	0.354	0.162	0.747
Faculty (Law)	0.512	0.204	1.199
Faculty (Sciences)	0.157	0.049	0.416
Faculty (Polytechnical)	0.318	0.158	0.627
Faculty (Pshychology and Education)	0.341	0.158	0.717
Self-employed parent (yes)	1.322	0.827	2.098
Life satisfaction (neutral)	0.532	0.208	1.321
Life satisfaction (positive)	0.903	0.476	1.813
Political spectrum (left-wing)	1.322	0.685	2.586
Political spectrum (center)	2.166	1.150	4.177
Political spectrum (right-wing)	2.055	0.915	4.557
Political spectrum (far-right)	1.270	0.359	3.911
Entrepreneurial UdG motivation (neutral)	1.425	0.776	2.594
Entrepreneurial UdG motivation (positive)	0.907	0.534	1.543

Reference categories: man; date of birth 1970-2002; Business and Economics Faculty; no self-employed parent; negative life satisfaction; far-left political spectrum; negative entrepreneurial UdG motivation.

Odds Ratio Logit model 5 years After completion of studies			
	Odds ratio	Inferior limit	Superior limit
Intercept	0.734	0.322	1.661
Gender (woman)	0.986	0.667	1.467
Gender (others)	0.800	0.039	5.944
Date of birth (2003-2006)	0.808	0.563	1.156
Faculty (Humanities)	0.426	0.189	0.917
Faculty (Health sciences)	0.299	0.156	0.561
Faculty (Law)	0.508	0.240	1.041
Faculty (Sciences)	0.123	0.047	0.285
Faculty (Polytechnical)	0.749	0.431	1.301
Faculty (Pshychology and Education)	0.394	0.215	0.717
Self-employed parent (yes)	1.054	0.723	1.527
Life satisfaction (neutral)	0.730	0.371	1.432
Life satisfaction (positive)	0.808	0.482	1.383
Political spectrum (left-wing)	1.054	0.650	1.711
Political spectrum (center)	1.860	1.144	3.039
Political spectrum (right-wing)	2.433	1.286	4.589
Political spectrum (far-right)	1.413	0.512	3.659
Entrepreneurial UdG motivation (neutral)	0.925	0.562	1.507
Entrepreneurial UdG motivation (positive)	0.933	0.621	1.403

UNDERSTANDING STUDENT ENTREPRENEURIAL INCLINATION: THE ROLE OF UNIVERSITY OF GIRONA

Universitat de Girona
Facultat de Ciències Econòmiques i Empresarials

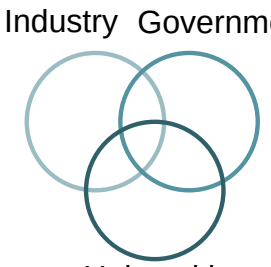
Author: Núria Porta Solà
Tutor: Andrea Bikfalvi
Bachelor's Degree in Business Administration and Management

2023-2024

INTRODUCTION

- **Entrepreneurship** has proved to have an impact on **enhancing quality of life** and **fostering economic** and **social growth**

Entrepreneurial universities



MAIN GOALS:

- Investigate the variables influencing students' inclination towards entrepreneurship
- Analyse the role of the University of Girona in shaping this inclination
- If necessary, suggest possible changes to implement

METHODOLOGY

Quantitative approach

GUESSS survey data (2023) → Students Entrepreneurial intentions

UdG sample: N=1002

- Descriptive analysis
- Explanatory analysis using a logit model

Logit model:

$$P(y_i = 1) = \frac{e^{\lambda}}{1 + e^{\lambda}}$$

$$where\ \lambda = \sum_{j=0}^{4} \beta_{1,j} gender_{j,i} + \beta_2 age_{rank_i} + \sum_{j=1}^{8} \beta_{3,j} Faculty_{j,i} + \beta_4 self_{employed_{parents_i}} + \sum_{j=1}^{3} \beta_{5,j} life_{satisfaction_{j,i}} + \sum_{j=1}^{3} \beta_{5,j} UdG\ involvement_{j,i} + \sum_{j=1}^{5} \beta_{5,j} Political\ spectrum_{j,i}$$

Qualitative approach

Semi-structured interviews

Universitat de Girona
Càtedra de Joves Emprenedors

Dr. Laura Vall-llosera

- Lecturer and director of the Càtedra de Joves Emprenedors (UdG)
- Main topics: UdG Role in entrepreneurship, entrepreneurial ecosystem in Girona

Diana Ballart

- UdG alumni, CEO and cofounder of The Smart Lollipop
- Main topics: Entrepreneurial ecosystem in Girona, creation and development of The Smart Lollipop

RESULTS

Quantiative results

	Dependent variable:	
	right after completion of studies (1)	5 years later (2)
Gender (female)	-0.818*** (-1.226, -0.409)	-0.014 (-0.345, 0.316)
Gender (Other)	-0.001 (-1.970, 1.969)	-0.223 (-2.125, 1.680)
Date of birth (2003-2006)	-0.194 (-0.579, 0.192)	-0.213 (-0.515, 0.088)
Faculty (Humanities)	-0.925* (-1.726, -0.124)	-0.853** (-1.512, -0.193)
Faculty (Health sciences)	-1.039*** (-1.676, -0.401)	-1.209*** (-1.745, -0.673)
Faculty (Law)	-0.670 (-1.407, 0.067)	-0.678* (-1.291, -0.066)
Faculty (Sciences)	-1.851*** (-2.728, -0.974)	-2.094*** (-2.842, -1.346)
Faculty (Polytechnic School)	-1.146*** (-1.721, -0.571)	-0.290 (-0.753, 0.174)
Faculty (Pshychology and Education)	-1.076*** (-1.709, -0.444)	-0.932*** (-1.437, -0.427)
Self-employed parent (yes)	0.279 (-0.110, 0.669)	0.052 (-0.261, 0.365)
Life satisfaction (neutral)	-0.631 (-1.400, 0.138)	-0.315 (-0.880, 0.251)
Life satisfaction (positive)	-0.102 (-0.660, 0.456)	-0.213 (-0.654, 0.228)
Political spectrum (left-wing)	0.279 (-0.275, 0.833)	0.053 (-0.352, 0.458)
Political spectrum (center)	0.773** (0.234, 1.312)	0.620** (0.211, 1.030)
Political spectrum (right-wing)	0.720* (0.050, 1.390)	0.889*** (0.357, 1.422)
Political spectrum (far-right)	0.239 (-0.749, 1.227)	0.346 (-0.472, 1.164)
Entrepreneurial UdG motivation (neutral)	0.354 (-0.150, 0.859)	-0.078 (-0.492, 0.335)
Entrepreneurial UdG motivation (positive)	-0.098 (-0.542, 0.346)	-0.069 (-0.410, 0.272)
Constant	-0.806 (-1.650, 0.038)	-0.309 (-0.996, 0.378)
Observations	754	754
Log Likelihood	-264.891	-385.739
Akaike Inf. Crit.	567.783	809.477

Note: Reference categories: male; date of birth 1970-2002; Business and Economics Faculty; no self-employed parent; negative life satisfaction; far-left political spectrum; negative entrepreneurial UdG motivation.

p<0.1*; p<0.05**; p<0.01***

Source: author's own

Qualitative results

"I think when someone wants to be an entrepreneur here, they don't really know where to go. It should be centralized."

"Just as someone who comes out of a research group, is very clear that they have to go to the OITT, it gives the feeling that what is not technology-based, we have a lot scattered or we have little protocol."

"The Chair was created to promote entrepreneurship among university students, this is as broad or as poorly defined as you want."

"I would like them to get to know us more, but of course, we should do more activities and sometimes the time we have is what it is."

"We do activities and programs not only with university students, but also with high school students and alumni."

"It's also very important at the beginning to show up everywhere where you can get money. We have raised about € 50,000 only with pitch competition prizes."

"Entrepreneurs are tried to be trained a lot in business, investment, strategy... and it's absolutely necessary."

"In the Master's Degree, Andrea proposed us to go to an event of innovation, entrepreneurship and technology organized by Catalunya Emprèn where a challenge was posed to be solved through design thinking. We were the winners."

"I knew I wanted to set something up, but above all I did the master's degree to develop business skills and ended up becoming an entrepreneur as a result of an experience I had in the Master's Degree."

*"We are **not spin-offs**, which means that we have no link with the **University** but **we have received their support twice** : a small sponsorship to go to a program in Silicon Valley and paying for a stand at the Mobile World Congress."*

CONCLUSIONS

- Significant differences across faculties which may imply a need to implement more subjects on entrepreneurship and business in all disciplines
- There is a need to unify the entrepreneurial guidance offered at UdG