UNIVERSITA' DEGLI STUDI DI PADOVA

DIPARTIMENTO DI SCIENZE ECONOMICHE ED AZIENDALI "M.FANNO"

CORSO DI LAUREA MAGISTRALE IN

ECONOMICS AND FINANCE

TESI DI LAUREA

EXPLORING THE STUDENT ENTREPRENEURSHIP PHENOMENON: THE CASE OF THE UNIVERSITY OF PADOVA

RELATORE:

CH.MA PROF.SSA SILVIA RITA SEDITA

LAUREANDO: SALVATORE MONTANA

MATRICOLA N. 1103539

ANNO ACCADEMICO 2016 / 2017

Il candidato dichiara che il presente lavoro è originale e non è già stato sottoposto, in tutto o in parte, per il conseguimento di un titolo accademico in altre Università italiane o straniere.
Il candidato dichiara altresì che tutti i materiali utilizzati durante la preparazione dell'elaborato sono stati indicati nel testo e nella sezione "Riferimenti bibliografici" e che le eventuali citazioni testuali sono individuabili attraverso l'esplicito richiamo alla pubblicazione originale.

Firma dello studente

INDEX

INTRODUCTION 8

CHAPTER 1: BACKGROUND 11
1.1 Economic theories on entrepreneurship 11
1.2 From an "individual entrepreneurship approach" to an "ecosystem entrepreneurship approach" 16
1.3 The entrepreneurship ecosystem 17
1.4 The Triple Helix model 21

CHAPTER 2: STUDENT ENTREPRENEURSHIP 25
2.1 The role of universities 25
2.2 Universities' Networks 27
2.2.1 Legitimation networks 29
2.2.2 Opportunity networks 31
2.2.3 Resources networks 36
2.4 Student Entrepreneurship literature 38

CHAPTER 3: STUDENT ENTREPRENEURSHIP AT THE UNIVERSITY OF PADOVA 41
3.1 Padova contest 41
3.2 Methodology 45
3.3 Sampling procedure 47
3.4 The survey 49
3.5 Descriptive statistics 52
3.6 Past professional experiences 55
3.7 Information about the firm 57
3.8 Ecosystem elements 66
3.9 University role 68
3.10 Personality of the entrepreneur 71
3.11 Variables 73
3.11.1 Dependent variable 73
3.11.2 Independent variables 74
3.11.3 Control variables 79
3.12 Model 81

3.13 Results and discussion 83
3.13.1 Personal factors regression 83
3.13.2 Network factors regression 86
3.13.3 University's factors regression 88

CONCLUSIONS 91

BIBLIOGRAPHY 96

WEB RESOURCES 103

APPENDIX 105

INTRODUCTION

Entrepreneurship is one of the most important engines for the economic growth (Carreea and Thurik, 2012; Wennekers and Thurik, 1999). It allows economies to be more competitive and it contributes to the creation of new jobs and to the development of new skills. Considering the current economic evolution, the development of new original ideas and projects assumes an even more important value given their ability to generate new wealth and in some cases produce intellectual property (e.g. patents, copyrights, trademarks, registered designs). They contribute in this way to the progress of countries. Entrepreneurship is defined as one of the most important activities of modern economic life and has the potential to improve economic opportunities for all (Hart et al., 2015). In the most advanced economies, the growth is driven by innovation. This end up with new products and services able to stimulate the competition and the efficiency of the economic system, that lead also to an improvement of the consumer welfare. Considering instead the less advanced countries, the economic growth is more affected by readjustment of the industrial structure (Ferrante and Supino, 2016). For both cases however, the entrepreneurial activity is the foundation for the value creation process.

Landström, Harirchi and Åström (2011) reported an in-depth analysis about the core knowledge of entrepreneurship research considering the role and the different schools of thought around the phenomenon. From an individual level, psychological abilities and skills play a crucial role. They can be considered as a key element that triggers the creation mechanism. In order to maintain the entrepreneurial flame, individuals need an adequate environment and specifics support from institutions. Moreover, it is possible to say that business creation processes have both a direct and indirect impact on local and global economies: the creation of new companies increases the competition among enterprises. There might be several pros and cons toward a greater competition especially in the case of early stage start-ups. However, competition allows firms and people to learn each other's successes and disappointments. In this way, individuals and enterprises extend their skillset through this learning process.

Over the past 30 years, universities have been encouraged to foster entrepreneurial activities through different mechanisms: from the constitution of specific technology transfer offices, to the creation of dedicated policies for the support of academic spin-offs (Grimaldi et al., 2011). Some empirical analysis made on specific group of students demonstrate the possibility to foster economic development by stimulating student entrepreneurship through specialized course curricula (Colombo et al. 2015).

The thesis is structured as follows. The first chapter is an overview of studies on entrepreneurship (Landström, Harirchi and Åström, 2011). It also considers the passage from an individual entrepreneurship approach to an ecosystem entrepreneurship approach, explaining through the "six entrepreneurial ecosystem domains" (Isenberg 2011) how an entrepreneurial environment should be built. The second chapter is focused on the student entrepreneurship, analysing the role of universities in the creation of new firms and the networks they can provide: legitimation networks, opportunity networks and resource networks (Petretto, 2008). Finally, it is presented an overview on the student entrepreneurship literature (Colombo et al. 2015). The third chapter analyses the case of the University of Padova: we started using data available from the University dataset and data merged by Infocamere with the Italian Business register selecting all the students labelled as entrepreneurs graduated between 2000 and 2010. Then we prepared a survey and we called roughly 800 entrepreneurs present in the above merged database obtaining 231 answers. After a data revision, we provided a descriptive analysis of the sample. We reported statistics about the nature of enterprises, the gender of entrepreneurs, the performances obtained by companies, the utility of the academic knowledge and if there was any contact with the University of Padova after their graduation. The final part of the third chapter offers an original econometric approach applied to two group of individuals: what we labelled as student entrepreneurs - that person involved in a business creation process while she is still student and/or immediately after her graduation (Colombo, Piva, Rossi-Lamastra, 2016) -, and subjects that created their activity after five year the graduation. We created three regressions to analyse how personal aspects of entrepreneurs, their network and elements related to the University of Padova could affect firm's performances.

CHAPTER 1: BACKGROUND

1.1 Economic theories on entrepreneurship

Entrepreneurship is an emerging research field that has received much attention over the last few decades. However, there is a lack of consensus on precisely what constitutes entrepreneurship and in many cases it has either been related to the 'entrepreneurial individual' or framed as the creation and running of one's own firm (Davidsson, 2005).

The original entrepreneurs were different from what today we could imagine. They were "just" traders and merchants. The first known instance of humans trading comes from New Guinea around 17.000 BCE, where locals exchanged obsidian, a black volcanic glass, for other goods they needed. These early entrepreneurs exchanged one set of goods for another. The situation was remained constant for thousands of years, even with the introduction of agriculture and the creation of the first coins.

The concept of entrepreneurship started to gain importance from the middle ages when markets moved their first step to the modern evolution. From that point, authors and researches started to put more attention to the phenomenon to implement guidelines and theories useful to understand all aspects of the business creation.

The concept of entrepreneur is borrowed from the French words entreprendre, "one who undertakes", that is a "manager." In fact, the word entrepreneur was shaped probably from celui qui entreprend, which is loosely translated as "those who get things done." In the early eighteenth century, a group of people called "Physiocrats" appeared in France under a school of new economic theory.

One of the most famous among them was **Cantillon**. He could be considered the first author of a better definition of entrepreneurship. In 1755, in "Essai sur la Nature du Commerce en Général", observing artisans, farmers and merchants, Cantillion noticed that there were differences between demand and supply on the market, which made it possible to buy something cheaply and sell it at a higher price. He stated that entrepreneurs were people who exercises business judgment in the face of uncertainty, noticing such opportunities and rise profits (Blaug, 2000, p.471). Cantillon underlined that this way of acting does not require entrepreneur to have her own resources or be personally involved in the production of goods and services.

Say was another economist who dealt with entrepreneurship. For him, entrepreneur is person who coordinates the market, manages production and deals with the distribution of services and goods. According to him, entrepreneur is an individual who has set up the enterprise and is its supervisor. Say described entrepreneurship as the ability to notice and transfer economic resources from less efficient area to more efficient one (Gruszecki, 1994, p.32).

Another author was **Marshall** who considered entrepreneurship as the ability to establish and manage an organization. He supposed that specialized managers not only make enterprise functions properly but also take risks connected with her working, raise capital, and recruit labor resources necessary to provide services and produce goods (Kraśnicka, 2002, p.38). Marshall stated that the success of the entrepreneur depends on characteristics that the person has. Family and educational system form these characteristics and below there are the main important:

- determination,
- efficiency,
- acting in a rational and reliable way,
- perseverance,
- how fast one adjusts to changes occurring in environment (van Praag, 1999, p.320).

Apart from the above characteristics, Marshall noticed that the success of an entrepreneur required the person has her own knowledge on trade, ability to take risk and act in the conditions of uncertainty, as well as be open to emerging opportunities and possibilities.

Another economist that dealt with entrepreneurship is **Schumpeter**. For him entrepreneur is an individual who, by looking for more and more profit, destroys market order and introduces innovations (Gruszecki 2002, p.195). He understood innovation as any change in the production and distribution of goods and services. Moreover, he highlighted the fact that even the smallest change, which increases the usefulness of existing goods, could be considered innovation. Moreover, in his theory Schumpeter had lay down criteria for considering someone entrepreneur who, thanks to actions she make, is constantly introducing changes and innovations in environment. According to this idea, entrepreneurs are people who are not satisfied with selling goods consumers are familiar with. For him, entrepreneur is someone who wants to be better than others, tend to be very successful, take up new challenges, and create something unique and original (Schumpeter, 1991, p.163).

Dealing with the same topic**, Kirzner** defined entrepreneurs as that individual able to identify changes from the instability on markets and bring stability with her activity. Contrasting with the idea of Shumpeter, for Kirzner the entrepreneur will be able to hold new opportunities only if differences in a determined market become minor. He described the activity of the entrepreneur as "entrepreneurial element" which express the essence of making the decision (Kirzner, 1973, p.35). This aspect contributes to the creation of decision making sequences that are logically connected with one another.

Going further in our literal review, **Knight** defines the entrepreneurs as a risk-taker and considers the uncertainty a fundamental aspect for the value creation since if the return is predictable for all the individuals, there will be no profit opportunities. The author stated that since humans are not able to predict future events and behaviours of market, uncertainty and risk are strictly connected with the surrounding reality.

Another author we would consider is **Casson,** who thought that some person emerges because of certain characteristics and abilities that the considered individual has. In particular, the following are the most important: capability to acquire and use knowledge, analyze actions taken, predict the future effects and make numerous contacts (Kraśnicka, 2002, p.47). As indicated by the author, entrepreneur is also a coordinator of any actions taken on the market, and this coordination involves favorable reallocation of resources in a way that changes are made to generate greater profit in conditions of changing reality.

During the 1980s, researchers on entrepreneurship became a very important topic in the modern society. Fields such as the psychological attitude of the individuals and direct consequences of the business creation started to attract the attention of researchers. The 1990s and the following years until today, were characterized by a strong increase in education programs focused on entrepreneurship and by a growing attention of media about the topic. A significant amount of scientific journals and models started to circulate within academic and society environments generating a general desire to understand the phenomenon in all its aspects. To explain the utility of these academic papers, Landström, Harirchi and Åström (2012) made an extensive research work analysing and ranking all the sources and the authors that contributed to the study of entrepreneurship, classifying them for number of citation and for their importance in the entrepreneurship research. Authors identified two groups of scholars, one more focused on studies related to management ("entrepreneurship researchers") and the other one that includes different disciplines ("disciplinary researchers"). Landström, Harirchi and Åström also defined the top 20 scholars on the basis of their total contribution to the list of the 135 works present in

their database, i.e. their contribution to the field based on the overall J-index[1] of their various titles within the core literature. The ranking is dominated by USA scholars and is hard to identify a university or cultural centre for entrepreneurship in terms of research. According to the results obtained analysing the J-index and comparing them with the total number of citation taking into account the field[2], Schumpeter, Knight, McClelland, Barney, Porter, Storey and

Table 1 Top-20 scholar producers in entrepreneurship research, ordered for the J-index score

Rank	Total J-index	Author	Year(s)	Country	Affiliation(s)
1	47.02	Joseph Schumpeter	1934, 1942	Austria/ USA	Harvard University
2	29.59	Howard Aldrich	1979, 1986, 1990, 1993, 1994, 1999	USA	Cornell University, USA University of North Carolina
3	29.52	William Gartner	1985, 1988, 1990, 1992, 1995	USA	University of Virginia Georgetown University University of Southern California San Francisco State University
4	29.30	Israel Kirzner	1973, 1979, 1997	USA	New York University
5	27.71	Scott Shane	2000, 2000	USA	MIT University of Maryland,
6	21.91	Sankaran Venkataraman	1997, 2000	USA	Rensselaer Polytechnic Institute University of Virginia
7	17.14	William Baumol	1968, 1990, 1993	USA	New York University
8	16.59	David Audretsch	1988, 1990, 1995, 1996	Germany/ USA	Wissenschaftszentrum Berlin fur Sozialforschung
9	15.68	Frank Knight	1921	USA	University of Chicago
10	14.62	David Birch	1979, 1987	USA	MIT
11	12.16	Amarnath Bhidé	2000	USA	Harvard Business School
12	11.90	David Blanchflower	1998, 2000, 2001	USA	Dartmouth College
13	11.89	David McClelland	1961	USA	Harvard University
14	11.63	David Storey	1994	UK	Warwick Business School
15	11.38	Mark Casson	1982	UK	University of Reading
16	11.10	Jay Barney	1991, 1997	USA	Texas A&M University Ohio State University
17	10.97	Michael Porter	1980, 1990	USA	Harvard Business School
18	10.94	Josh Lerner	1999, 1999	USA	Harvard Business School
19	10.90	David Evans	1989, 1989, 1990	USA	NERA: National Economic Research Associates, Inc.
20	10.85	AnnaLee Saxenian	1994	USA	University of California

Source: Source: Landström et al. (2012)

[1] Definition taken from the work of Landström, Harirchi and Åström (2011): "J-index = (A*100)/E where A = actual citations E = maximum citations E is calculated by adding the number of all handbook chapters published at least one year after the publication date of the specific work. For example, to calculate the J-index for Shane and Venkataraman (2000), the actual citation is 17, and as this work could have been cited in all chapters of all handbooks published after 2001, the J-index for the article becomes (17*100)/19+11+27+27 = 22.97."

[2] This relation considers the Social Sciences Citation Index (SSCI) of Web of Science

Saxenian are classified as "entrepreneurship researchers" while the rest as "disciplinary researchers".

Considering the specific works made by all the authors[3] and their J-index is possible to identify the top-ranked works in term of citations showed in Table 2. Landström, Harirchi and Åström (2011) divided the Top-20 core works in thematic groups based on the field and the content. Thirteen out of twenty top ranked works are theoretical foundation works about the functions (Schumpeter, 1934; Kirzner, 1973; Knight, 1921; Casson, 1982; Shane and Venkataraman, 2000) and the characteristics (McClelland, 1962) of entrepreneurs in the creation of new products and new markets and the development of entrepreneurship (Stinchcombe, 1965; Penrose, 2002; Nelson and Winter, 1982; Aldrich, 1999).

Table 2 Top-ranked works for citations

Rank	Year	Author(s)	Title	Type	J-index
1	1934	Schumpeter, J.	*Theory of Economic Development*, Cambridge, MA: Harvard University Press.	Book	33.51
2	2000	Shane, S. and Venkataraman, S.	'The Promise of Entrepreneurship as a Field of Research', *Academy of Management Review*	Article	22.97
3	2000	Shane, S.	'Prior Knowledge and the Discovery of Entrepreneurial Opportunities', *Organization Science*	Article	16.22
4	1921	Knight, F.	*Risk, Uncertainty and Profit*, Chicago, IL: University of Chicago Press.	Book	15.68
5	1942	Schumpeter, J.	*Capitalism, Socialism and Democracy*, New York: Harper and Brothers.	Book	13.51
6	1988	Gartner, W.	'Who is an entrepreneur? Is the wrong question', *American Journal of Small Business*	Article	12.85
7	2000	Bhidé A.	*The Origin and Evolution of New Businesses*, New York: Oxford University Press.	Book	12.16
8	1973	Kirzner, I.	*Competition and Entrepreneurship*, Chicago, IL: University of Chicago.	Book	11.89
9	1961	McClelland, D.	*The Achieving Society*, Princeton, NJ: Van Nostrand.	Book	11.89
10	1994	Storey, D.	*Understanding the Small Business Sector*, London: Routledge.	Book	11.63

Source: Source: Landström et al. (2012)

[3] 135 works present in the database analysed by Landström, Harirchi and Åström (2011)

1.2 From an "individual entrepreneurship approach" to an "ecosystem entrepreneurship approach"

In literature, especially for the classical authors, the entrepreneur figure has been mainly analysed by looking at the personal characteristics, at the personal attitudes and personal ability of the subject to detect business opportunities, to start a company and get it developed over time. Recalling for example Cantillon (1931) for the ability of the subject to see market opportunities, or Say (1803) for the aptitude of the individual to manage the production, to deal with the distribution and the market or Smith (1776), with his example about the butchers, brewers and bakers,

> *"It is not from the benevolence of the butcher, the brewer, or the baker, that we can expect our dinner, but from their regard to their own interest"*

to say that the entrepreneur, after having identified certain opportunities and having taken some risks to obtain a profit, she does not offer her products for altruism or for the social wealth but just for her self-interest. Moreover, we can recall Schumpeter (1991) who defined the entrepreneur as the person who introduces innovations, whose experimentations constantly destroy the old and introduce new equilibria, making possible higher standards of living. The entrepreneur becomes the revolutionary, upsetting the established order to create dynamic change.

In a more recent literature, from an approach that tends to find in the personal attitudes and characteristics of the entrepreneur the reasons that induce the individual to start a business (e.g. risk propensity, innovation capacity etc.) we are moving toward a systemic approach: the person does not become an entrepreneur only for her own skills, propensities and attitudes, but because she is integrated in an environment, a system indeed. Social and business relations stimulate and simplify the individual in her starting and growing company processes. So, we refer to the school of thought of the social capital.

The idea of social capital, introduced by Jacobs (1961), is highly debated in social sciences (Coleman 1988 and 1990, Zukin & Di Maggio1990, Tsai & Ghoshal 1998, Nahapiet & Ghoshal 1998, Baron & Markaman 2000, Eerson & Jack 2002, Liao & Weslch 2005) and on studies focused on entrepreneurship (Johannisson 2000, Abell et al 2001, Davidsson & Honig 2004, Minniti 2005, Simoni & Labory 2006). This concept was connected to the human and personal relations into a specific contest (Colemann 1988), with the character and behaviors of entrepreneurs (Simoni & Labory 2006) with entrepreneurial decisions (Minniti 2005), with

economic performances of firms (Backer 1990) and with the birth and growth of entrepreneurship (Abell et al 2001, Davidsson e Honig 2003, Liao & Welsch 2005).
We can define as social capital the sum of actual and potential resources originated from the relational network of the entrepreneurs (Naphiet & Ghoshal 1998). The social capital shows various aspects that in the Naphiet and Ghoshal model (1998) are collected in three different dimensions:

- *structural dimension*: regarding all interactions and social relations that allow an easier access to information reducing time and investments needed;
- *cognitive dimension*: it is given by the set of resources that permit to share languages, codes, rules and norms able to influence economic relations among people;
- *relational dimension*: regarding all personal existing relations between individuals (Liao & Welsch 2005) that allow to develop higher trust points able to increase the knowledge levels and simplify the access to other forms of resources available into the social network.

These dimensions are explored also by Liao and Welsch (2005) to analyze the role of social capital in venture creation processes and to show how nascent entrepreneurs can utilize their interactions and social connections to influence and shape their cognitive capital (structural dimension) to increase the trust to receive the support of other players (relational dimension) and to share rules, values, goals during the whole entrepreneurial process (cognitive dimension).

Based on this prospective, the social capital is built upon networks ties that allow the access to resources (Naphiet & Ghoshal 1998). Thus, is a critical element for new entrepreneurship development and for the economic growth.

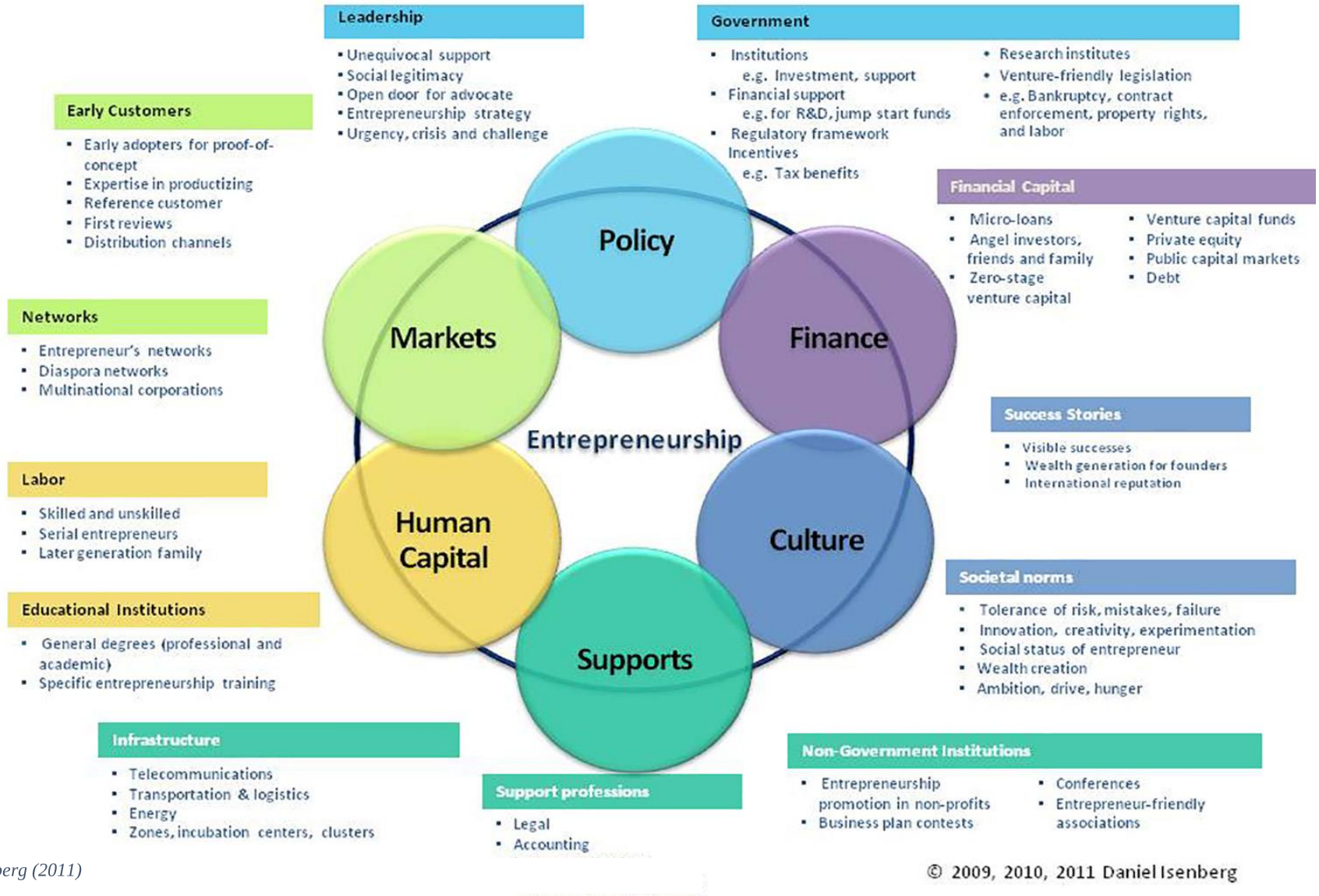
1.3 The entrepreneurship ecosystem

Nowadays fostering entrepreneurship has become a core component of economic development in cities and countries around the world. The predominant metaphor for fostering entrepreneurship, as an economic development strategy, is the “entrepreneurship ecosystem”. An entrepreneurship ecosystem is defined as a "set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of

"blockbuster entrepreneurship", number of serial entrepreneurs, degree of sell-out mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment" (Mason & Brown 2014).

There are now many models of entrepreneurial ecosystems. In recent years, a particularly influential approach has been developed by Daniel Isenberg at Babson College, who has started to articulate what he refers to as an "entrepreneurship ecosystem strategy for economic development" (Isenberg, 2011). He maintains that such an approach constitutes a novel and cost-effective strategy for stimulating economic prosperity. According to Isenberg (2001), this approach potentially 'replaces' or becomes a 'pre-condition' for the successful deployment of cluster strategies, innovation systems, knowledge economy or national competitiveness policies. He identifies six domains within the entrepreneurial system: a conducive culture, enabling policies and leadership, availability of appropriate finance, quality human capital, venture friendly markets for products, and a range of institutional supports (Figure 1). These generic domains comprise hundreds of elements interacting in highly complex and idiosyncratic ways. Isenberg (2011) therefore emphasizes the importance of context: each ecosystem emerges under a unique set of conditions and circumstances, leaders cannot copy anyone else's model because no one can replicate someone else's because they are unique, indeed. Thus, governments and policy makers should work on effort and resources, as well as experimentation and learning until the right unique configurations evolve.

Figure 1 Six entrepreneurial ecosystem domains



Source: Isenberg (2011)

In this scheme, the role of governments is crucial for the ecosystem creating process. As starting point, existing dynamics and challenges of new start-ups need to be understood, creating regulations and policies that help new businesses to start and existing businesses to be sustained. Initiatives by governments should consider, depending on the industry and sector, tax incentives, minimal red tape, business incubators, grants, vocational training, technology transfer, market access and infrastructural support.

Building a strong business community is an essential point. This community is composed by mentors and advisers, preferably from the private sector. Also teaching value for money and provide a strong focus on return on investment are crucial elements to sustain entrepreneurship. Early local success cases will help significantly to act as role models and to encourage others to venture this way, does reinforcing the local business ecosystem.

Moreover, governments should be focused also on removing obstacles. This would require to address infrastructural challenges (energy, logistics), reduce bureaucracy and streamlining processes (red tape), easy access to foreign markets (free trade agreements), attractive taxation structure specially for small firms to reduce financial burden and improve sustainability odds and qualified human capital (education and vocational training).

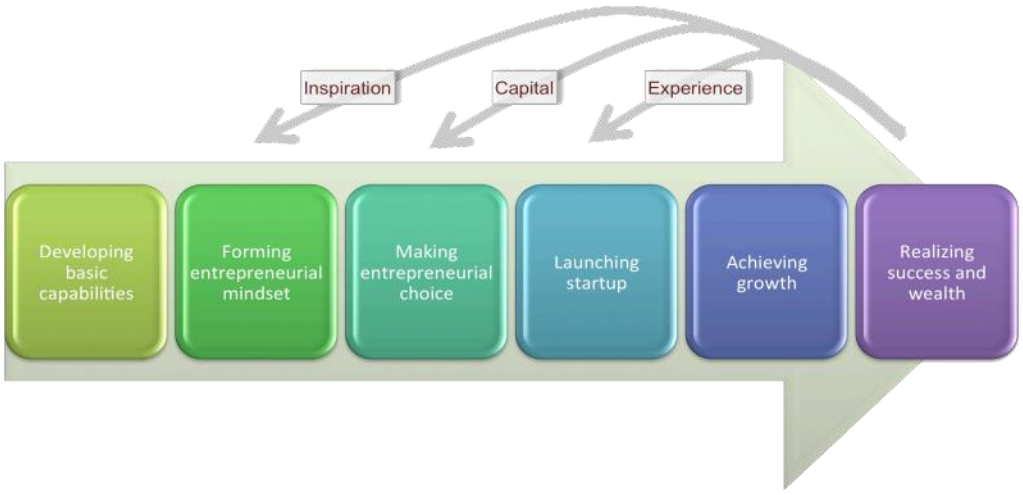
It is important to emphasize that the ecosystem proposed by Isenberg (2011) does not work as sealed compartments. Every single domain, to return positive results, requires the simultaneous application of the other dimensions. If policymakers are only focused on financing and/or creating a good financial system without educating in parallel the entrepreneurs, they will not get the benefits desired because private equities and other financial entities will go away. Alternatively, even if policymakers change the local culture towards a risk-taking orientation but they under evaluate the importance of creation and sustain of markets, the system would fail. So, the ecosystem approach must be seen as a dynamic process and not as a static structure.

Another important aspect is the fact that the most successful entrepreneurs like to create more entrepreneurship (Isenberg, 2011).

> *"Entrepreneurship, it turns out, when successful becomes like a hobby or sport which entrepreneurs pursue for a mix of motives, often for the challenge or the adrenaline rush long after their material needs are taken care of many times over. It becomes a positive addiction, one in which the venture junkie likes to get others hooked as well"* (Isenberg, 2011).

Thus entrepreneurship "dependent" individuals may become angel investors, advisors, venture capitalists or board members feeding back their experience and wealth to generate new entrepreneurship. They may also become public speakers or guest lecturers inspiring others to follow them in their footsteps (Figure 2). In sufficient quantities, these activities leave a region indelibly imprinted.

Figure 2 Entrepreneurial addicting effect



Source: Isenberg (2011)

Successful entrepreneurship thus has broad spillover effects on the entrepreneurship ecosystem, strengthening all of its domains. Human capital is upgraded through training and experience, success stories inspire new generations and make society less risk-adverse. This promote the wealth creation and new entrepreneurial ventures formation.

1.4 The Triple Helix model

The need of qualified human capital let us understand how important the university's role is in order to facilitate the creation of new enterprises and their subsequent survival (Gibson and Smilor, 1991). A literal model that helps us assimilate the above relation is the so-called "Triple Helix" system (Ranga & Etzkowitz, 2013), which describes the interaction between university, industry and government and states that innovation derives from the interaction of the aforementioned actors. The potential for innovation and economic development in a Knowledge Society is tied to the university' contribution. It is possible to define Triple Helix systems as a set of:

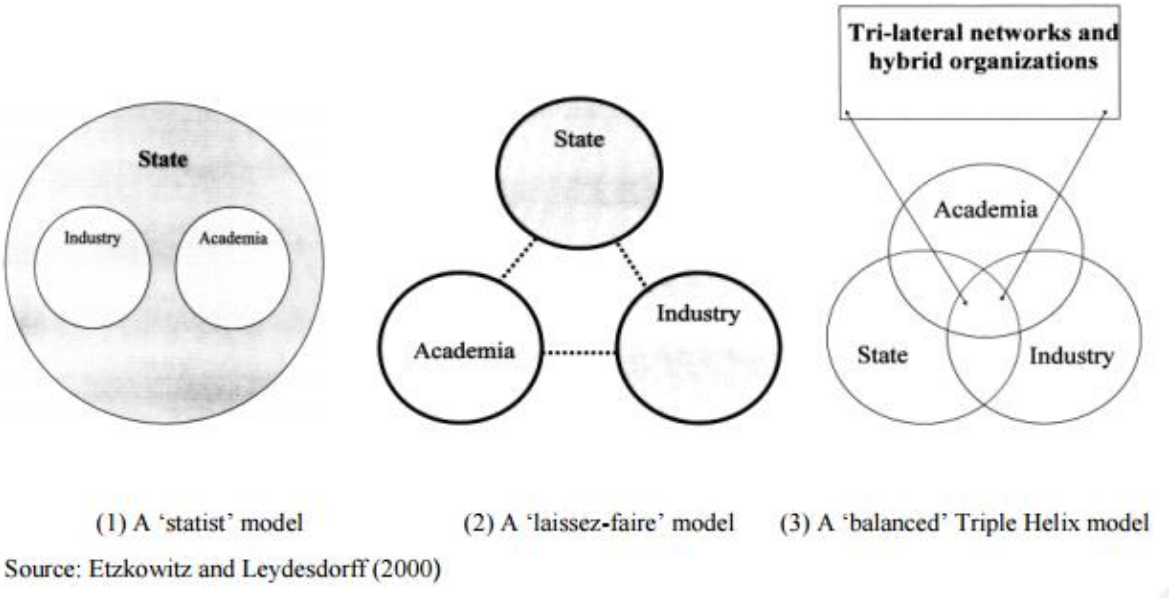
- *components*, the institutional dimensions of university, industry and government;

- *relationships between components*, collaboration and conflict moderation, collaborative leadership, substitution and networking;
- *functions*, described as processes taking place in what the authors label the 'Knowledge, Innovation and Consensus Spaces'. Not only, in addition to their traditional functions, each institutional sphere assumes also the "others role" conducting thus new roles and not only their usual one. This means that, in addition to fulfil their own traditional task (such the principal activity), each actor can assume the others' role as secondary activity. Universities, for example, in addition to their traditional path of teaching and researching, should also concentrate to capitalize their knowledges, through filling patents and start-ups creation (Etzkowitz, 2008).

The central role of university is attributed to its "*third mission",* that is to encourage the direct application, enhancement and use of learning to contribute to society's social, cultural and economic development. This can be realized through its continuous capacity to provide students with new ideas, skills and entrepreneurial talent and through its capacity to generate and transfer technology.

Figure 3 shows the "Triple Helix" system configuration proposed by Ranga and Etzkowitz, (2013). It presents three possible configurations:

Figure 3 Triple Helix configuration



Source: Ranga & Etzkowitz, 2013

1. the *statist configuration*, is characterised by a government that controls both the academic and the industry spheres and should assume a guide role on the projects developing and on providing resources for new technologies. This configuration limits

the capacity of innovation and transformation. Countries such China, Russia, Latin America and other states of the east Europe are a pure example.

2. the *Laissez-faire configuration* is characterised by a minor intervention of the state. It considers the industry as the primary force and the other two as an auxiliary support and they are considered independent each other. It is possible to find solutions like that in the USA and in some countries of the west Europe where universities are seen such human capital providers and the government act as regulator.
3. the *Balanced configuration* shows an overlapping and a collaboration of the three spheres. It is preferable to the other two above-mentioned because it offers the most favourable environment for innovation given the presence of interaction between the entities. In this case, the universities act together with industries and government forming joint initiatives.

In a context of a hybrid model, the aim of the Triple Helix framework is to promote an innovative environment, not controlled by just one of the players but encouraged by everyone. This implies that the historic function associated to the three actors will be done jointly with the others, reducing the role that each one has in the society. The three operators that originally were operating independently, tend now to work together generating different overlapping and incessantly reformulating their institutional agreements.

A more recent evolution of the Triple Helix model is the "Quadruple Helix" model in which the economic structure of a country is based on four pillars: academic system, industry, government and society. In literature, this model is not properly explored yet, mainly for what concerns the relations between the four helixes (Afonso et al., 2010).

CHAPTER 2: STUDENT ENTREPRENEURSHIP

2.1 The role of universities

In the previous chapter, we have seen an overview on the entrepreneurship's history and on the entrepreneurship ecosystem highlighting the need for a better interaction organization (Triple Helix model), in order to foster the creation of new businesses. This because the entrance of new entrepreneurs and new ideas in an economic-productive system, represents an instrument of innovation for products and processes and allows the creation of new jobs, the creation and conservation of new technological and managerial knowledges, in addition to an increasing of the social wealth.

In the present economic evolution, the development of creative ideas and projects assumes a more relevant economic value to such an extent that some authors configure a "creative economy" and an "experiential economy" (Bonaccorsi & Granelli 2005), hinting at an economic field able to generate a greater richness and intellectual property (e.g. patents, copyrights, trademarks) sustaining thus the growth of traditional economic sectors too. It is particularly true for a country like Italy which has an industrial structure more focused on traditional productions – for this reason heavily exposed to the more recent industrialised countries competition – where the creation of new firms assumes a strategic role. It seems more necessary than ever a cooperation between government, local administrations, universities and research centres to contribute and facilitate the creation of new firms and their subsequent survival (Gibson & Smilor 1991).

In the last few years, in Italy and in Europe in general, we have seen a proliferation of subsidized initiatives both financial (e.g. grants for youth entrepreneurship) and not financial (e.g. creation of incubators)[4]. Recently, in international contests, universities started to assume an important role in the valorisation of the entrepreneurship, focusing mainly on the internalization of the researches' results into the firms, working hard on the strategic management of the intellectual property, also on the promotion of the creation of new entrepreneurial activities (spin off) and on the creation of incubators and science parks.

[4] The European Union offers a vast range of measures for its member states in order to promote the creation of new firms. Since 1998 are available specific actions for encouraging people to become entrepreneurs. Those measures consisted in promotional and educational activities for the entrepreneurial mindset, others for the bureaucracy simplification, for the improvement of the technological transfer to the companies, to the reduction of the fiscal impact, to the improvements of the access to financial instruments.

The fruitful collaboration between universities and enterprises, gives the community the possibility to benefit technologies developed inside the academic institutions and allows the proliferation of new companies able to generate wealth and job opportunities.

For example, in the US, Stanford University has been considered the engine for the birth and growth of the high-tech economy in California. Students and Stanford's University workers founded more than 2.400 companies (e.g. Cisco, HP, Sun Microsystems, Google) so far. Another example is the MIT, Massachusetts of Technology Institute, that is generating each year more than 150 firms from 1990 to nowadays and, with its approximately 4.000 spinoffs, generate 1.100.000 jobs and an overall turnover of US$ 232 billion each year (Stefensen et al. 2000).

An evolution process toward this direction, although slow, it is moving in Italy too, where, despite a poor cooperation between academics and entrepreneurs, many university institutions can provide a valid support in the globalization process that every country has to face. Many Italian universities dealing with national and international firms are focused both on the quantitative and qualitative researches' enhancement, creating in their structures offices for the technological transfer, providing entrepreneurial educational programs, working hardly for the realization of structures for supporting new firms and for the foundation of new spinoffs. For example, from 2000 Polytechnic of Turin in working with Motoria on applied researches projects; the San Raffaele science parks' in Milan is hosting a research centre of the pharmaceutical Schering-Plough firm and, from 2004 the Trento University is hosting a Microsoft's research centre.

Moreover, in the last years we have seen a higher dedication on both education activities (with teachings for students) that are getting even more specific, and research activities (studies, researches, forums, workshops) that are getting always more focused on fields such as the birth and rise of new ventures. More precisely, it is increasing the number of university's courses focused on entrepreneurs and entrepreneurship that allow the creation of an important potential pool of entrepreneurs as well as a high human capital level.

Universities, therefore, while pointing at high educational levels, dealing with institutions and companies of their territory, represent possible engines for the growth of the country's economy and sources of entrepreneurial diffusion in their contests. They also contribute to the creation of new firms helping the introduction of innovations and new products' technologies increasing their technological portfolio through differentiation strategies.

2.2 Universities' Networks

Recalling the section 1.2 of the previous chapter, nascent entrepreneurs may use their network, their interactions and their social relationships to influence and shape their intellectual capital (structural dimension), to increase their trust and confidence to get support from various players (relational dimension) and to share values and goals during the entire entrepreneurial process (cognitive dimension). Every business initiative is conditioned by social relations and by the environment in which it operates. The institutions (including universities) create the contextual conditions and the relative endowment of social capital within which the business processes are manifested. In other words, universities can affect the entrepreneurial behaviour in terms of legitimacy of activities, opportunities exploitation, networks and resources.

On the 2001 "Social capital and entrepreneurship in Great Britain" work, Abell, Millis and Crounchley, analysed the existing link between social capital and propensity to become an entrepreneur, conceptualizing the existence of different networks able to stimulate and encourage the creation of new entrepreneurship. The authors proposed three different kind of networks:

- **Legitimation networks**, referring to relations among people that justify the individual action to become an entrepreneur;
- **Opportunity networks**, referring to relations among people that offer the opportunity to enter in a sector with the constitution of new firms;
- **Resource networks,** referring to relations among people able to guaranty a better access to material resources and to appropriate human capital.

It is possible to understand how easy for universities is to stimulate, with their roles and activities, strong networks that could allow the potential entrepreneur to be into a relations system able to:

- legitimate and support him in her entrepreneurial decisions (*legitimation networks*). The potential entrepreneur, whether she is a student or a researcher, will be into a set of connections that could legitimate, stimulate and improve her entrepreneurial willingness. Consider for example the distribution of grants for the best entrepreneurial ideas promoted both the Italian and the US universities, or moreover let think to entrepreneurial workshops to encourage the sharing of ideas, experiences and projects;
- offer him the possibility to identify, evaluate and choose opportunities (*opportunity networks*). Universities could offer possibilities to enter in touch with complementary

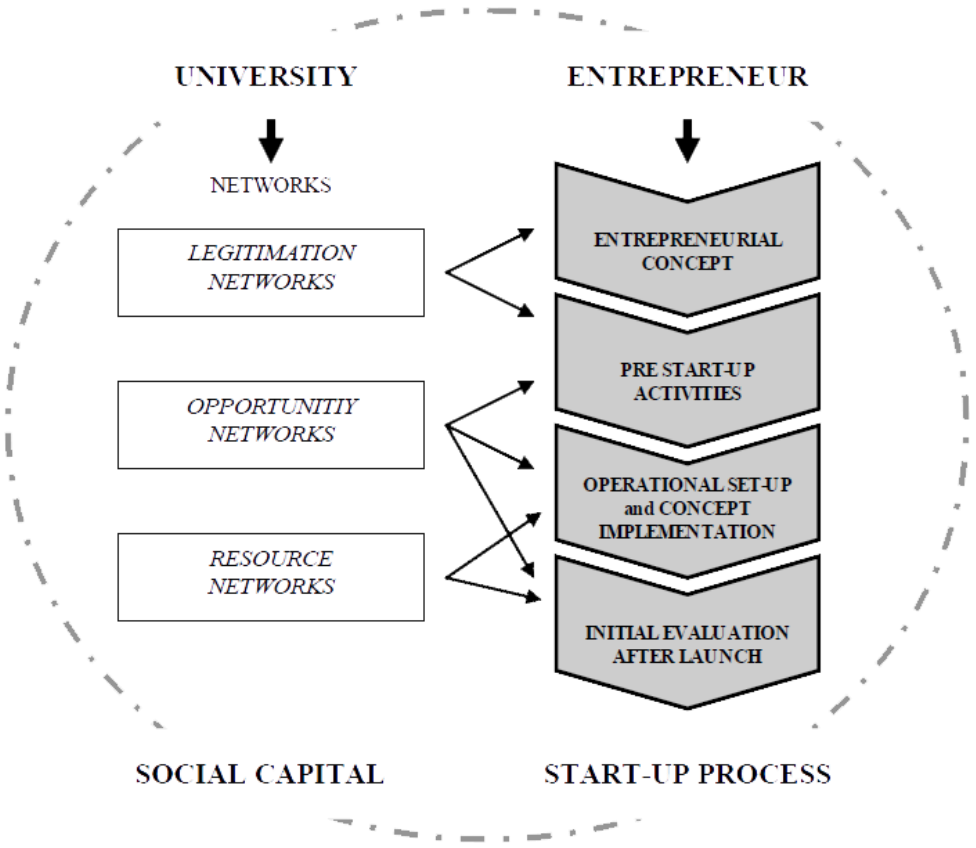
people in the entrepreneurial action, reducing in this way the evaluation and choosing costs in the whole stat-up process. For example, let think to the complementarity between an engineer and an economist in their market choosing decision for a technological product birth, suppose, from a scientific research. Or, the opportunity to be in touch with venture capitalists, business angels able to finance an entrepreneurial idea;

- allows the access to information and to material and intangible resources (resource networks). Imagine the possibility for the entrepreneur to access to facilities and structures like university' business incubators (Bollingtoft & Ulhoi 2005; Pan, Siegel and Wright 2005), to be in an active position in spin off and spin out processes (Van de Velde et al. 2005), the possibility to collate her firm in science parks and technology districts (Koh et al. 2005), and the opportunity to the services provided by the technology transfer offices (Markman et al. 2005).

The three networks forms, can be used by the entrepreneur to achieve resources, capitals, technologies, abilities and competences otherwise hard to obtain. The availability of these networks could be positively correlated to the creation of new companies and to their probability to realize good performances in the first years (Aldrich et al. 1986; Naphiet & Ghoshal 1998; Liao & Welsch 2005). Moreover, they could legitimate, encourage and stimulate processes for new entrepreneurship (Naphiet & Ghoshal 1998), and they also allow the access to crucial opportunities, resources and information for the success of the company.

The Figure 4 summarize how the entrepreneur can utilize the three categories of networks provided by universities to obtain either resources and capabilities essential for her business.

Figure 4 the three networks scheme



Source: Petretto (2008)

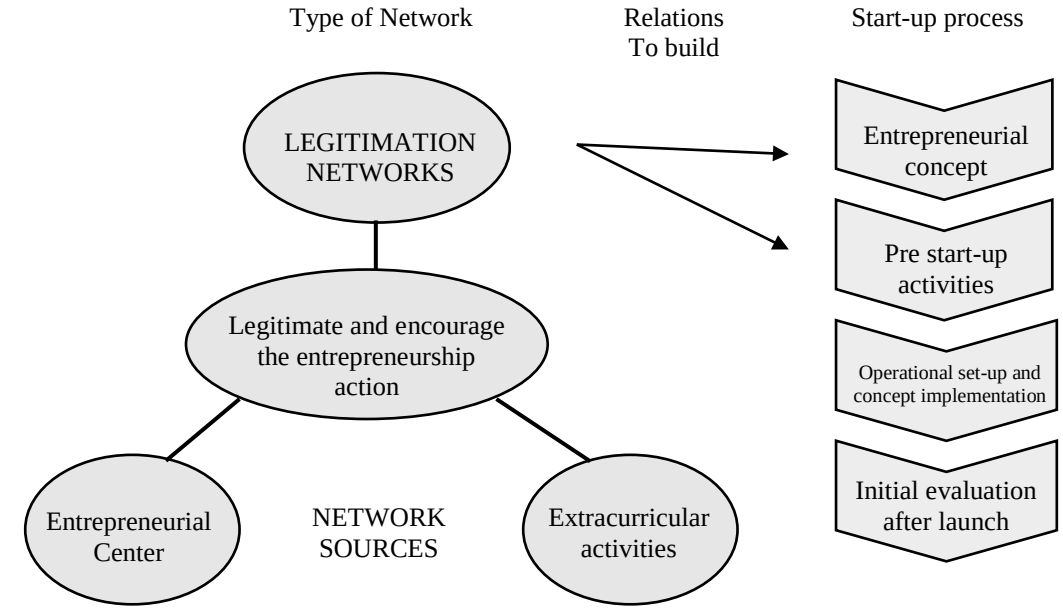
2.2.1 Legitimation networks

Some activities promoted by universities can stimulate the creation of social connections able to activate the desire and the vocation of being an entrepreneurship that, jointly with specific entrepreneurial capabilities, change an "unmotivated entrepreneur" in an "entrepreneur with success potential" (Vallini & Simoni 2006). The activation of these networks could have various sources, such as:

1) the existence inside the universities' structures of "Entrepreneurial Centers";
2) the existence inside the universities' campus of extracurricular activities as organizations and alumni & ex-alumni clubs, with particular regard to those focused on managerial and entrepreneurial events, as well as sports and cultural initiatives.

In Figure 5 it is shown the legitimation networks' sources, the relations to build and their impact in the various stages of the start-up process.

Figure 5 Legitimation Networks and relation with start-up process



Source: Petretto (2008)

1) In the main American's universities, the planning and organization of educational activities, of teaching and researches in entrepreneurial field is managed by the "Entrepreneurial Centers". They appear like the "hub for the entrepreneurial activities" and represent the points from where the different activities promoted by universities dealing with entrepreneurship start. Two are the principal objectives that the Entrepreneurial Centers have in common: educational programs looking to the whole lifecycle of the business activity, and the configuration of a community linkage between academics, students and companies. All activities guarantee the access of the potential entrepreneur into a *global network* and a *system of alliances* based on relations, connections, ideas sharing, learning and research activities.

The network system is empowered by many alliances, partnerships and collaborations with other research centers and other structures (e.g. the United State small business administration) offering in this way a complete assistance to the potential businessperson. The close collaboration with the entrepreneurial centers - established inside universities – for the organization of events such as meeting with VCs and business angels, brainstorming sessions for the creation of business ideas, business planning trainings, help the proliferation and legitimation of business activities.

2) With extracurricular activities, we mean all the elements offered by universities such as clubs, charities, sport and cultural organizations, brotherhoods and campus events. The

common point is the offer of many activities that allow the creation of interactions and relations among students and the possibility to utilize services, facilitations and benefits during the whole academic period.

Many colleges have internalized organization specialized on entrepreneurship, e.g. *entrepreneurial clubs* and *entrepreneurial associations*. These associations can contribute to:

- create an entrepreneurial culture;
- facilitate the sharing of ideas and projects;
- support the conception and successive realization of business ideas;
- motivate, legitimate and incentivize the birth of new business activities;
- allow the acquisition of skills, expertise and capabilities otherwise not available;
- facilitate the keeping in touch among people and institutions, such as investors, possible partners, business angels and venture capitalists.

2.2.2 Opportunity networks

Beside the legitimation of the entrepreneurial activity and to the creation of a set of shared values, some university activities can facilitate the entrepreneur in the evaluation, in the choosing process and during the following realization of the business opportunities.

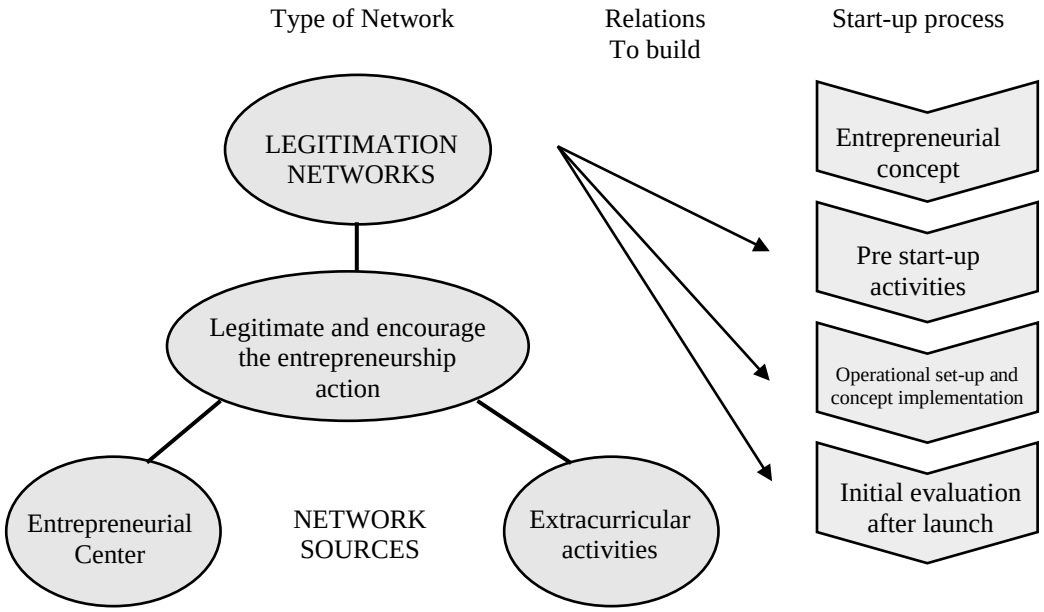
Universities, indeed, are also able to activate other forms of networks and relations we already defined as "*opportunity networks*" and can linked to

- education and training activities that permit the acquisition of knowledge and entrepreneurial competences useful for the new business creation processes;
- activities for the research valorization, realized with specific technological transfer offices, that allow the entrepreneur to commercialize ideas and projects birth from research initiatives.

In the same way of legitimation networks, opportunity networks can affect different phases of a business creation process, in particular the phase of pre-startup activities, of operation set-up and concept implementation, and of initial evaluation after launch (Figure 6).

Examining in detail the first aspect, education and training activities, it is possible to say that the continuous evolution of the economic and competitive contest in which new companies operate, require the possession of specific knowledge and competences tor the realization and consequent management of a new entrepreneurial activity. An important help in this sense, it is

Figure 6 Opportunity Networks and relation with start-up process



Source: (Petretto, 2008)

provided by *Education and Training* programs promoted by the main universities with the main object to stimulate, facilitate and support the development of entrepreneurial competences.

In detail, for Entrepreneurial Education we refer to the process that allows an individual to assimilate and develop knowledge, skills and competences for the definition, evaluation and resolution of entrepreneurial problems (Hynes, 1996). For *Entrepreneurial Training activities*, instead, we refer to activities with the aim to modify and/or develop knowledge, skills and capabilities (already hold) from works experiences and *job performances* (Garavan e Ò Cinneide 1994). The differences between the two types of programs are shown in the Table 3 where are reported the different content of activities, teaching methods used, objectives, and outcomes of process. Moreover, Table 3 shows that nowadays the academic proposal does not offer only generic management courses, but offer specific curricula and projects in addition to the traditional university courses.

In literature has been founded three evolutionary stages of the *entrepreneurship education (Leictch & Harrison 1999).* During the first stage, the *entrepreneurship education* was considered as a part of the general management and thus, not such as a specific teaching subject. During the 70s-80s there was the first evolution, second stage, as results of the increasing of importance within the academic world of themes linked to entrepreneurs and to firms that led to consider the *entrepreneurship education* as an autonomous teaching field. The following years, saw a growth in the number of academic proposals (Ivancevic 2001) that now, third stage, shows well-structured courses with theoretical and practical teachings. Frank (2005), in a

research for *Centre for Education in the Built Environment (CEBE)*, identified four pillars on which should be build the educational courses for potential entrepreneurs:

Table 3 Contents, characteristics and differences between Education and Training

COMPARISON FACTOR	EDUCATION	TRAINING
Content of activity	Specific curricula Academic courses Academic programs	Knowledge, skills, competences e attitudes relevant to a specific entrepreneurial activity
Method used	Lessons, Lectures e guided reading Debate e forum	Demonstrations, Practices Work experiences
Objectives	Objectives are in general terms	Can be specified clearly
Time scale	Specified period	Short term
Nature of learning process	Structurated or mechanistic	Structurated or mechanistic
Focus on activity	On structured development of individual to specified outcomes	On knowledge skills, ability e job performance
Outcomes of process	External specified outcomes	Skilled performance of tasks which make up an entrepreneurial activity
Process of evaluation	Evaluation in term of pass/fail levels	Evaluation against specific job performance steards

Source: (Petretto, 2008)

1. learning to know (conceptual, theoretical, how to learn)
2. learning to do (practical, applied knowledge and skills)
3. learning to be (how to be an entrepreneur with success potential)
4. learning to live together (such as entrepreneurial culture)

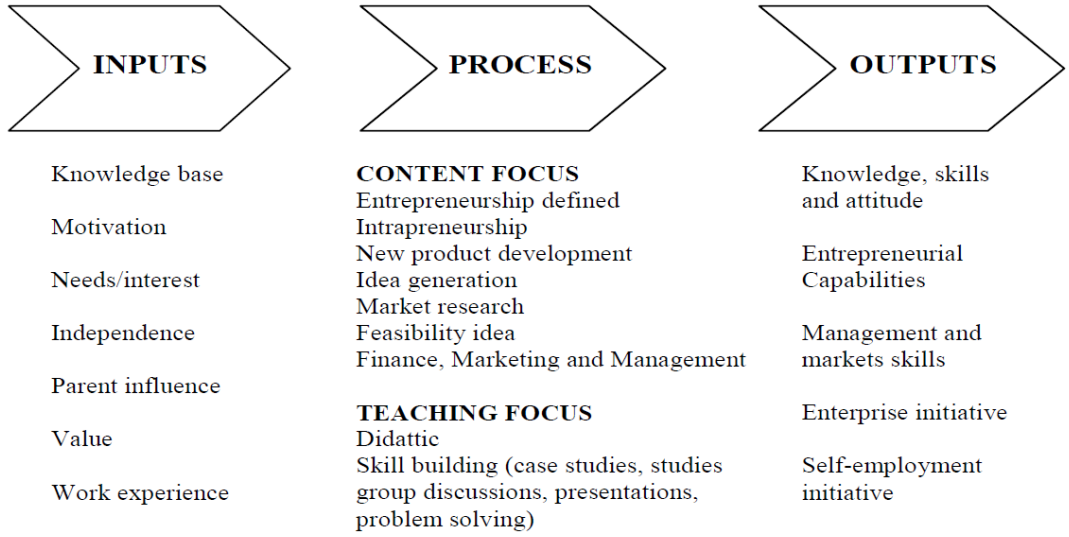
America could be considered one of the most advanced country in this field: they offered the first academic course on entrepreneurship in 1947 at Harvard Business School. In USA, there are 1354 colleges that offer programs on business management, marketing and related support services[5] In Italy the situation seems to be in continuous evolution showing an increasing interest by the principal Athenaeums towards this field, and the activation of new courses in faculties of social sciences, engineering, medicine and agronomy.

The new models of entrepreneurship education promoted by universities are able to create learning processes characterized by the transformations of inputs to outputs. In the *process model of entrepreneurship education* proposed by Hynes (1996), Figure 7, inputs of the process are given by contents of the educational programs (e.g. teachings of initial competences to

[5] US News sept. 2006

specific work experiences), and outputs are characterized by results in term of skills, attitudes, motivations, competences and capabilities acquired by the potential entrepreneurs.

Figure 7 Exaplation of the entrepreneurship education model



Source: Hynes (1996)

The final result of the whole process is the presence of a set of entrepreneurial opportunities strictly linked with attitudes and skills (both of general and specific type) learned during the educational path and so, they are available for the potential entrepreneur during the ideation and realization of a business project, Figure 8.

Figure 8 Example of entrepreneurial opportunities

Skills/Attitudes	Ex. Entrepreneurial Opportunity
General Business skills such as marketing, time management, ect Confidence, enthusiasm, willingness to work hard	*General Business Ventures*
Idea development, working with public, fund raising General Business Skills	*Social Entrepreneurs*
Idea development, recognising opportunities for improvements Alliance building, confidence, leadership	*Intrapreneurship*
General Business Idea development creativity, confidence	*Non traditional specialist business*

Source: Frank (2005)

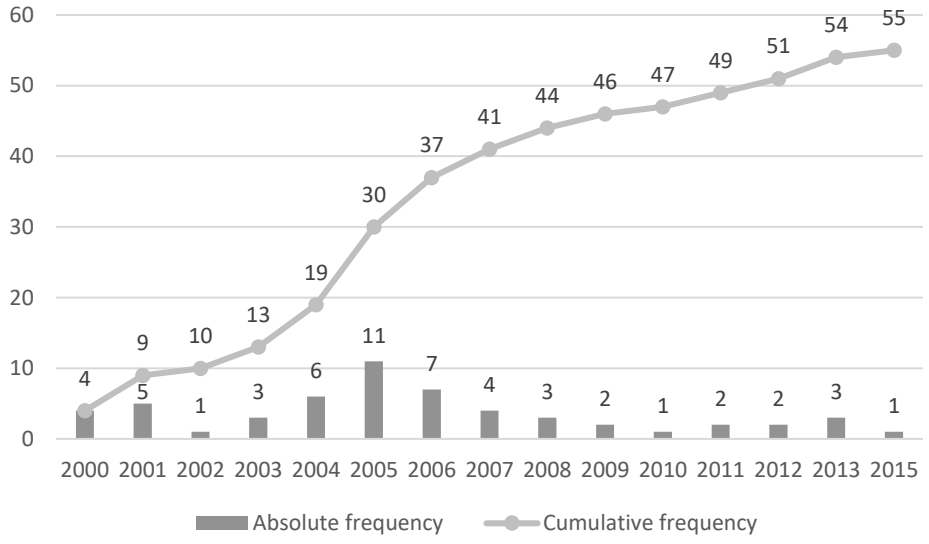
The second highlighted source of opportunity networks is given by the possibility to realize and commercialize results of researches conducted by students, researchers and professors from the same universities. We are talking about the *research valorization activity* (Chiesa & Piccaluga 2003), realized by the so called technological transfer offices (TTO) and they deal with:

- patents and copyrights;
- spinoffs creation;
- creation of collaboration with industries;
- involvement of student in research projects.

Numerous national and international surveies (e.g. ProTon in Europe and AUTM in America) confrm the increasing effort of universities toward researches valorization.

Referring to the Italian contest, using data of the 2016 NetVal report, the phenomenom is increasing from a qualitative and quantitaive point of view. In Italy, since 2000 have been activated specific structures for the technological transfer and for patetent activities (Graph 1).

Graph 1 TTO in Italy from 2000 to 2015



Source: 2016 NetVal report, page 27

The main task of technology tranfesr offices are:

- facilitate and promote the entrepreneursial activity, though the technical services management and the professional development (supporting the *pre start-up* activities and *operational set-up* phases);
- promote and support patent and licensing activities that started inside the university, incresing in this way the possibility to take economic advantages from their commercialization (they influence the pre *start-up* and *set-up* activities);
- promote and facilitate new business creation processes with supporting activities for new firm and spinoffs creation through the management of science parks (they facilitate the *operation set-up* and the *initial evaluation after launch* phases).

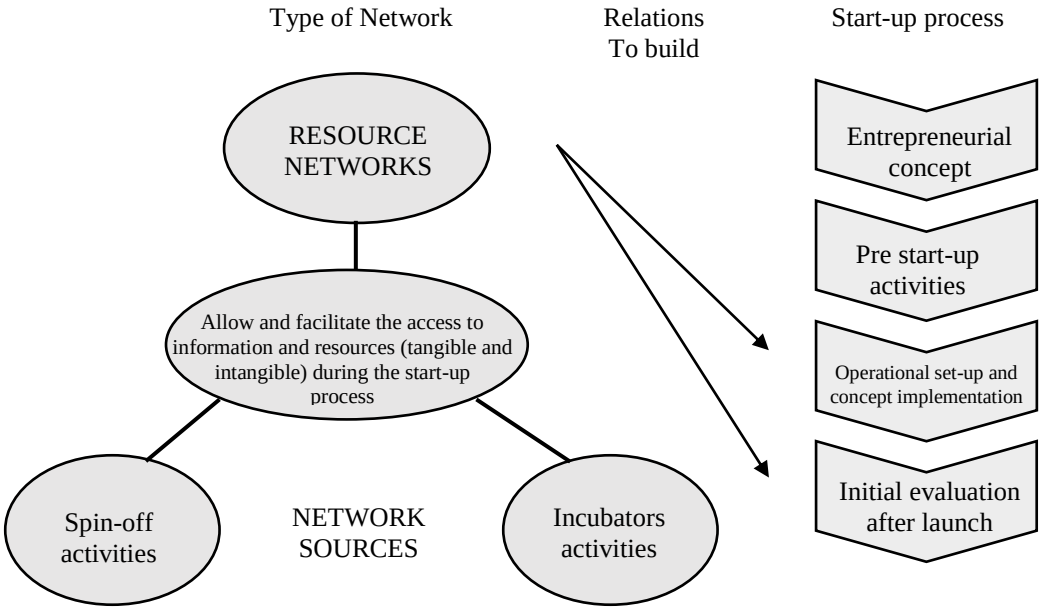
2.2.3 Resources networks

The third category of networks that universities could activate refers to the so called "resource networks". Their activations allow the entrepreneur to access to information and resources (tangible and intangible), useful for the entire new business creation process. The main sources of these networks are:

- creation of academic spinoffs, as result of the industrial utilize and commercialization of research's outcomes;
- activities done by science parks and incubators that can stimulate the technological development and can promote the transfer of innovations;
- activities in charge to create a relational system that permit a closer connection between enterprises and financial institutions, with the aim to facilitate the access to financial resources for the realization of business projects.

These networks influence, above all, the last two phases of the start-up process (Figure 9). They help and facilitate the operational set-up and conceptual implementation, as well as the initial phase toward the market of the new firm, the initial evaluation after launch. Let imagine, for example, the possibilities for entrepreneurs to utilize incubators and their services, or the possibility to stablish the company inside a science park utilizing both relational and product's services.

Figure 9 Resource Networks and relation with start-up process



Source: Petretto (2008)

The above relations, however, have also a strong influence on elements such motivation of the entrepreneur and conception of her business idea, influencing in this way the first two phases of the start-up process too. Indeed, a potential entrepreneur will be more motivated and will have a higher trust in her capabilities knowing that she can utilize some of the aforementioned structures.

Looking at the spin-offs, it is possible to define them as firms that were born by the initiative of other companies or by other kind of organizations such universities and research centres. They are thus, start-ups constituted with resources (e.g. capitals, technologies, human resources, relations etc.) provided by another entity (Declich, 2006). Dealing with academic spin-offs, it is possibile to say that their main objective is to realize the so called "*conversion process*", referring to the transformation of a research or of a specific technology in a business project, using financial resources provided by other subjects. Academic spin-offs have the role to foster technological transfer processes helping to close the gap between the point where the academic research ends (i.e. the publication of the achieved results) and that one where the companies' interest starts (i.e. when it is clear an industrial application of the same research) (Cesaroni, Moscara & Piccaluga 2005).

Talking about business incubators we do not refer to a single structure, but to several actors with the same aim: incentivize the creation of new entrepreneurial activities. Looking at its provided by the *National Business Incubators Associations*, an incubator is an instrument for the economic development designed to accelerate the growth and success of business initiatives through a set of services and resources. Universities could be seen like the major supporter of these structures as demonstrated by the firsts incubation experiences in 50' in the USA, when the most important universities started to build incubators hoping to stimulate the creation of new businesses with the subsequent economic growth. The active role played by universities is due to the incubators' nature that allow a continuous knowledges exchange between academic world and industries, because they connect universities with the local territory and because they permit the existence of the incessant research-industrial application cycle.

In Italy, the incubators' system in mainly divided in three categories:

1. science and technological parks
2. business innovation centres (BIC)
3. academic incubators

Science parks are in charge of the knowledge and technology transfer, of the information and knowledge management and creation and launch of spin offs. Moreover, science parks pursue

a higher strategic objective, the realization of a productive fabric in a given territory with initiatives of research valorisation and with services finalised to the develop of technology innovation.

2.4 Student Entrepreneurship literature

Entrepreneurship is one of the eight key competences that, for the European Commission, should be developed and consolidated within continuous learning processes, with the aim to promote the active citizenship, the employment, the social inclusion and the auto realization of people in a knowledge based society. Nowadays entrepreneurship is considered one of the principal engines of the economic growth (Hart et al. 2015; OECD 2015), not only for most advanced economies, but also for those countries that approached global markets during the last twenty years.

For the first type of economies, where growth is basically driven by innovation, entrepreneurship assumes a role of catalyst for intangible capital (R&D, education and formation). It is thanks to entrepreneurship that knowledge become new products and services that feed, from one side, the competitiveness and profitability of enterprises, and on the other hand the consumers' wealth.

For the second type of countries, where growth suffers of the delicate passage from an intensive to an efficient use of inputs, entrepreneurship represents the principal instrument for the transformation and reorganization of the industry base. It is thanks to entrepreneurship, especially that one focused on processes of imitation and active recombination, that the knowledge (mostly developed elsewhere) is spread in the territory contributing to change the economies' structure toward a better efficiency.

In both cases, the process of *creative destruction* connected to the entrepreneurial *turn over* represents the base of innovative processes, both radical and incremental, that continuously feed the value creation for the firm. This could happen with the increase of number of available products and services, but also increasing the efficiency during their production phases.

Given the contest conditions, the creation of new firms and their performances over time is influenced, at least in the short term, by the large or small presence of individuals that hold a set of characteristics – such as some psychological and cultural attitudes (optimism and risk propensity, creativity, trust in the others, leadership, etc.) –, knowledge, competences and

capabilities – obtained both trough education and trainings/experiences –, useful to recognize possible opportunities and to valorise them.

Robust empirical evidence suggests that education is an important positive determinant of entrepreneurial performance (survival probability, revenues growth, occupation rate, profits, propensity to innovate and to valorise human capital) (e.g. Bates, 1999; Ferrante, 2005), and according to some studies (Bugamelli et al., 2011; Schivardi and Torrini, 2011; Federici and Ferrante, 2014), the poor economic performance of the Italian economy in the past 15 years or so can be partly ascribed to entrepreneurial styles and strategies determined by a poor endowment of human capital.

For the above reasons, from the last decade, there was an increasing interest for the understanding of the entrepreneurship phenomena and for a better analysis of the student entrepreneurship dimension since it is an under-investigated phenomenon.

One of the most important author on this field is Professor Colombo who, in one of his papers, tried to investigate what is the relationship between alumni's course curriculum and the decision to become student entrepreneurs (Colombo, Piva, Rossi-Lamastra 2016). He focused his attention on the effects of the student entrepreneurship in technology-based universities, conducting so, his study in Politecnico of Milano.

In the same way, in accordance with Professor Sedita, we thought to investigate the situation at the university of Padova, since no one else before has done a similar work. For this reason, we made a survey of 36 questions where we asked the respondents to tell us information regarding the firm, about the founding team and regarding possible facilities they received for the foundation of their business activity.

In the following chapters, we will go into the explanation of our analysis, starting with a descriptive analysis of the sample and then, in the fourth part, we will compute a couple of regressions for a deeper understanding of our variables on the firms' performances.

CHAPTER 3: STUDENT ENTREPRENEURSHIP AT THE UNIVERSITY OF PADOVA

3.1 Padova contest

The Veneto region is one of the most productive regions in Italy and it could be considered the engine and the throbbing heart of the manufacture of our country. According to the annual report concerning the Veneto economic situation in 2015, the sector with the higher rate of employee in the region is the manufacturing one, indeed, followed by retail, accommodation, restoration sectors (Unioncamere Veneto, 2016).

Given this consideration, it easy to understand how the University of Padova operates in a favourable environment for entrepreneurship. Instead, if we try to compare our situation with the international panorama especially with countries such as the USA, the United Kingdom and France, it is possible to understand how our contest is much less developed than the abroad ones in terms of attractiveness and support for business creation. Padova University is classified at the second place, according to Censis Italian ranking 2016-2017, for public universities as shown in Table 4[6].

Table 4 Ranking for Italian public universities in 2016-2017

University	Score
Bologna	94.00
Padua	**88.80**
Florence	88.00
Pisa	85.80
Rome Sapienza	85.20
Palermo	84.60
Turin	83.00
Milan	80.20
Bari	79.80
Naples Fed.II	75.80
Catania	73.00

Source: Censis

The University of Padova has an average of approximately 10,800[7] students that complete the academic path each year from year 2000 in the one of courses offered. In accordance with the annual report prepared by the NdV (Nucleo di Valutazione) of Padova (University of Padova,

[6] The ranking considers only universities with over 40,000 students enrolled for the year 2016-2017 and takes into account the level of services, facilities, internationalization and communication.
[7] Average calculated using the total amount of student graduated each year at the University of Padova from 2000 to 2010. For the computation was the database provided by the statistic office of the University of Padova.

2015), and with the website "Universitaly[8]", the high number of students that find a job after the first and the third year their graduation, places Padua in the top three of the ranking among universities in the comparison group. The University is organised in 32 departments and offers a wide range of managerial and economic courses not only in the economics department but also in other field such as pharmaceutical, engineering, agronomy, psychology, literature and much more. In accordance with the 2016 ANVUR report, the economic/managerial departments of the University of Padova are classified at the first place for the category of "Grandi Atenei" with regard to public universities. In this report, our University is on the top list also for other five areas, assessing the high quality of the athenaeum.

A good signal to keep in mind for the entrepreneurial appeal is given by the total amount of spinoffs activated. University of Padova has already launched 58 spin offs in which it holds an average of 5% stake since 1981[9] and it is second for created spinoff in the national panorama (Table 5).

Table 5 Ranking of Italian entities for activated spinoffs from 1981 to 2016

Entity	Spinoffs
Politecnico di Torino	85
Università degli studi di Padova	**58**
CNR (Consiglio nazionale delle ricerche)	57
Università degli studi di Firenze	53
Università di Genova	48
Scuola Superiore Sant'Anna	48
Università degli studi di Pisa	44
Università Politecnica delle Marche	43
Università degli studi di Udine	39
Università di Perugia	39
Università degli studi di Bologna	39
Università degli studi di Roma Tor Vergata	39
Università del Salento	37
Politecnico di Milano	36
Università degli studi di Cagliari	33
Università degli studi di Torino	33
Università della Calabria	31
Università di Modena e Reggio Emilia	29
Università degli studi di Siena	26
Università degli studi di Ferrara	25
Politecnico di Bari	25
Università degli studi di Milano	25

[8] Website promoted by MIUR (the national minister for instruction, university and research), with the aim to make possible transparent comparisons between Italian universities
[9] Data from Spin Offs Italia http://www.spinoffricerca.it/

Università degli studi di Pavia	24
Università degli studi di Trieste	22
Università degli studi di Bari	22
FBK (Fondazione Bruno Kessler)	21
Università degli studi di Parma	21
Università di Roma "La Sapienza"	20
Università degli studi del Piemonte Orientale A. Avogadro	19
Università degli studi di Milano Bicocca	19
Università di Camerino	18
Università degli studi di Palermo	17
Università di Verona	16
Other	262
Total	**1373**

Source: SpinOff Italia

According to the annual report made by the NdV of Padova (University of Padova, 2015), in 2014 the University provided approximately € 20.5M to various initiatives (€ 1.5m less respect 2013):

- Junior and Senior Research Grant Projects (€ 7M for two years);
- Institutional Research Projects (€ 5M);
- University Research Projects (€ 4.5 M);
- Young Scholars Projects (€ 2 M);
- University Strategic Projects (€ 1 M);
- Scientific equipment (€ 1 M).

In 2016 the University registered an impressive record of 21 new patents (13 in 2015, 13 in 2014, 15 in 2013, 17 in 2012) compared to the Italian national average of 4.9 applications per university and were constituted 2 new spinoffs (in line with numbers of previous years).

Around Padova area, there are some entities such as incubators and science parks that support the business creation processes:

- **M31 Italy**: since 2007, the incubator creates new enterprises and support growth in international markets combining incubation services and venture capital.
- **StartCube**: it is the incubator of the university of Padova and offers functional services and modular equipped offices, which are rented, to stakeholders at a favourable price.
- **PST Galileo**: it is a science park and its mission is to support the competitiveness of enterprises through innovation. PST Galileo deals with the technology transfer, industrial design and new materials.

- **UniSMART:** a new firm, 100% controlled by UNIPD, with the aim to transfer the academic knowledge to the surrounding enterprises.
- **SCENT - School of Entrepreneurship**: the mission of the school is to set up a scholastic reference point for researches on business enterprises, instruction projects and learning sharing on entrepreneurial aptitude. The School is active in research, learning and information sharing.
- **Fablab**: It is a place where individuals and businesses have access to equipment, processes and where they can transform ideas into prototypes and products at low prices.

Moreover, there are other entities in Veneto region connected with the University of Padova and with other universities, the main important are:

- **Fondazione la fornace dell'innovazione (Asolo – TV)**: it is an incubator with the aim to encourage innovative entrepreneurial projects.
- **H-Farm (Roncade – TV)**: it is an incubator, founded in 2005 and listed in Milan Stock Exchange, has the aim to help young entrepreneurs in launching innovative initiatives and support the transformation of the Italian companies in the digital perspective.
- **Incubatore di Venezia (Venice)**: it operates in the following asset classes: information, communication, arts and entertainment.
- **Vega In Cube and Vegapark (Venice)**: it is a science park and an incubator that host start-ups, spin-offs and companies recently formed that deal with ICT, nanotech and green economy.
- **Star Parco Scientifico di Verona (Sommacampagna - VR)**: it was created to encourage the diffusion of innovation in the area, acting as a link between local businesses, the research community and funding sources.

In order to create a more efficient network and to increase the cooperation in R&D investment in and transfer innovation to support small and medium enterprises, in Veneto were introduced and enhanced the regional innovative networks (reti innovative regionali - RIR). These aggregations are designed to connect SME to the world of innovation and research, starting from common needs (Unioncamere Veneto, 2016). A RIR aggregates companies, public and private entities, universities and research centres and creates partnerships aimed to conceive products, processes, methods, tools or services completely new, redesigned or improved. The areas of activity include aerospace, automotive, biomedical, nanotechnology, industrial automation, food, and energy and are consistent with the regional policy of smart specialization but also open to the multi-sectoral nature.

3.2 Methodology

The initial dataset, provided by the statistics office of the University of Padova, included 119,347 students graduated at the University of Padova between 2000 and 2010. Information about personal data, university courses, enrolment and graduation years, number and types of credits (ECTS), supervisors and title of the thesis, final grade and other characteristic about the individual and/or the academic dimension were collected with the compilation of two surveys at the beginning and at the end of the academic life. InfoCamere S.c.p.A. matched the aforementioned students with the companies present on the Italian Business register where the alumni were listed as shareholders or a managerial role. The process creates interaction between students and companies and widens the search field. After an elaboration and other subsequent additions, we obtained one databases, hereafter database "db_Co", that is the result of the merge between the Italian Business register and the University of Padova databases.

Database db_Co includes 20,338 companies founded by university students graduated between 2000 and 2010. The matching doesn't consider if the company is a branch or the headquarters and creates duplicates or observations with no data. The problem was bypassed using the "drop duplicates observation" function on STATA fixing the tax code of the student, the Italian Business register code of the company and giving priority to headquarters rather than branches. The function checked the presence of duplicate of students and companies and in positive cases, i.e. firms with headquarter and branches, it was considered only the headquarter. In this way from an initial sample of 20,338 companies, we obtained a sample of 14,671 detections. The below tables show the first restrictions applied to the database db_Co to reach the 4,172 observations used for our research.

Table 6 Data selection

db_Co	
Universe	20,338
Drop duplicates with STATA	(5,667)
	14,671
Role selection	(7,983)
Individuals - Natural Person	(30)
Consortia	(13)
Entrepreneurs before 18 years old	(195)
Partnerships	(28)
Sample (N. Companies)	6,427

Source: db_Co, Authors' elaboration

Table 7 Managers and Entrepreneurs breakdown

db_Co		
Sample (N. Companies)	6427	100%
Companies with a Manager	(2255)	(35%)
Companies with an Entrepreneur	4172	65%
Sample (N. Companies)	4172	100%

Source: db_Co, Authors' elaboration

The parameters used for the data selection concern the corporate structure of the company created or the role of the former student inside the business. For our research, we used the definition of entrepreneur given by Art. 2082, Civil Code, that states: «The entrepreneur professionally carries out an economic and organized activity with the aim of production or exchange of goods and services». Then, looking at our data instead, we defined "Entrepreneurs" all students above 18 years old categorised owners at the time of the company foundation. The whole analysis includes only entrepreneurs who create an enterprise after the legal age, trying to avoid in this way, firm successors and to have a higher probability to analyse the original founders. About 195 observations were deleted due to this restriction. The analysis doesn't consider the natural person and consortia as a company forms useful to investigate the entrepreneurial impulses of a student. We eliminate consortia due to their nature of "over entrepreneurial" considered as a combination of companies without the ownership.

The process used to identify the entrepreneurs is different for each category of companies and considers information not existing for all firms present in the sample. In case of corporations and partnerships, such characteristic is applied if the student is classified as partner or labelled as an owner. The qualification of entrepreneur is also assigned to the holders ("Titolare") in case of individual companies and for the other types of enterprises only if the student is stated as an owner. After the selection process, we deleted the remaining students (Managers, 35%, as shown in Table 7) if they were not classified as entrepreneurs.

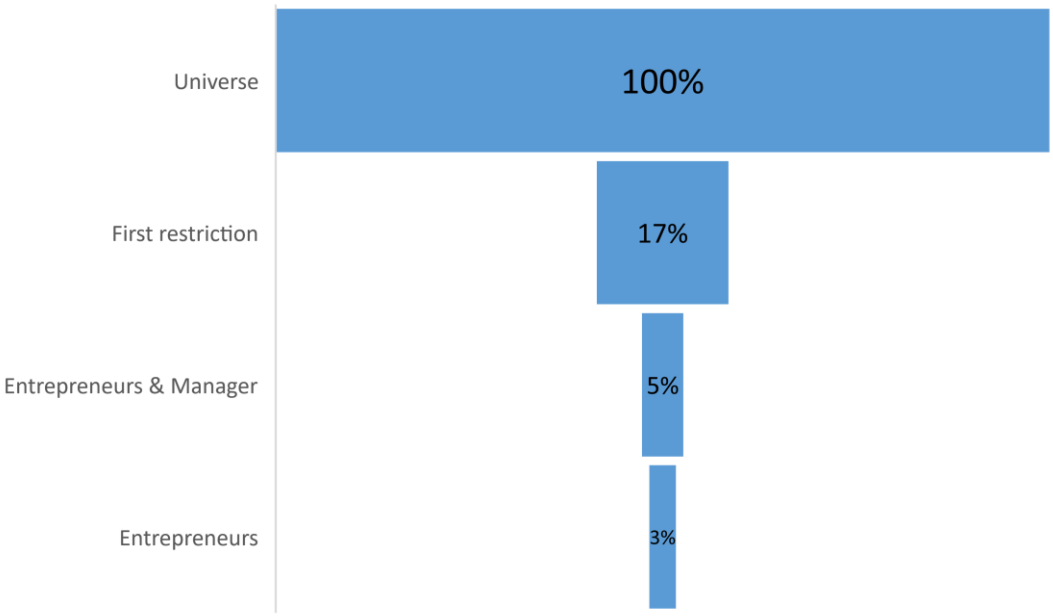
Moreover, for our research we kept the "individual companies" (i.e. enterprises made by just a person) and "limited companies" (i.e. "Società di Capitali") removing, due to their low dimension (28), partnerships firm. In this way, we ended up with a sample of 4172 companies.

Furthermore, due to the lack of information in the database provided by the university about the character of the entrepreneur, concerning her relational network, about the role of the

University of Padova in the business creation process and so on, we constructed a survey trying also to understand the motivation of the business foundation, to capture and analyse the performances of the firms over years, if companies were established with business partners or not and much more.

Below, in Graph 2, it is shown a funnel to summarize our sample and the restriction applied.

Graph 2 Summary funnel of the sample



Source: db_Co, Authors' elaboration

3.3 Sampling procedure

In order to have an as much as possible representative sample, to better analyse the phenomenon, we started to create a stratified sample of the db_Co data (Graph 4, next page). The stratification was obtained taking into consideration the legal nature of the firm, i.e. individual company or limited company, Graph 3 below,

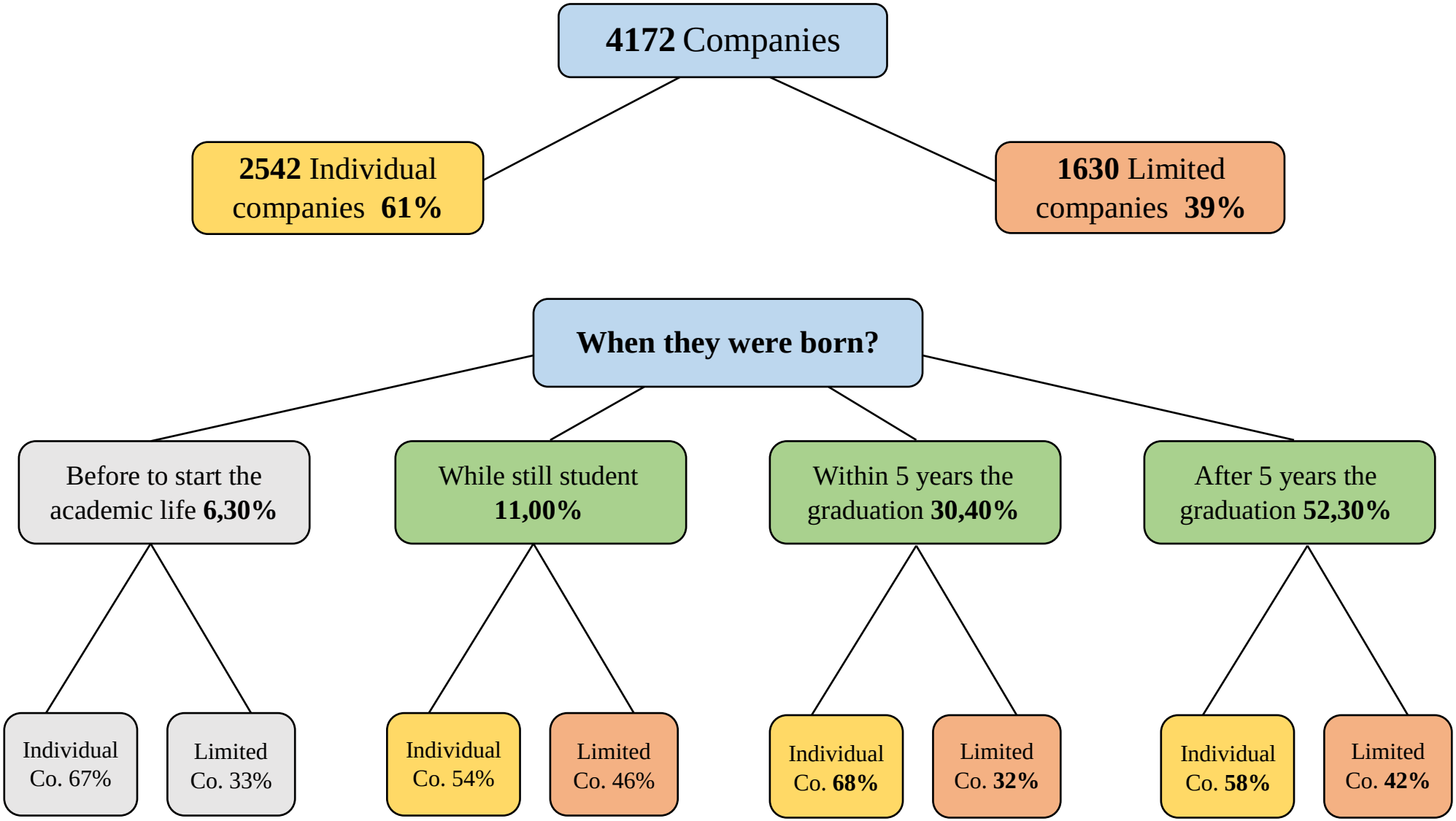
Graph 3 Firm legal nature subdivision

Source: db_Co, Authors' elaboration

the university course[10] followed by the ex-student, Table 8

[10] All the clusters applied for each university course (170 courses) are listed in Appendix A.

Graph 4 Scheme of stratified sample



Source: db_Co, Authors' elaboration

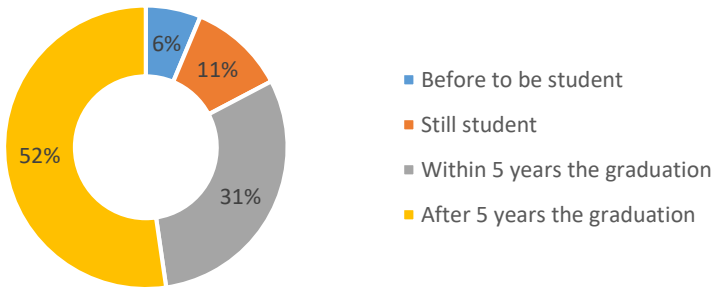
Table 8 University course subdivision

Facolty	Individual Companies	Limited Companies	Total
Agronomy	332	46	378
Economics	54	94	148
Pharmacy	183	42	225
Law	73	43	116
Engineering	302	537	839
Literature and philosophy	243	102	345
Medicine and surgey	313	213	526
Veterinary medicine	56	11	67
Psicology	251	147	398
Education	96	60	156
Mathematics, physics and natural science	190	75	265
Politics science	394	215	609
Statistics science	55	45	100
Total	**2542**	**1630**	**4172**
Percentage	**61%**	**39%**	**100%**

Source: db_Co, Authors' elaboration

and when the company was created: before to start the university, meanwhile the entrepreneur was still a student or within or after 5 years the achievement of the academic title, Graph 5.

Graph 5 Creation company



Source: db_Co, Authors' elaboration

3.4 The survey

For the construction of the questionnaire[11] we utilized the SurveyMonkey platform, thanks to which, using the Computer-Assisted-Telephone-Interviewing (C.A.T.I.) technique, it was also possible to collect the answers of the respondents. The survey was composed of 35 questions divided in 6 main parts:

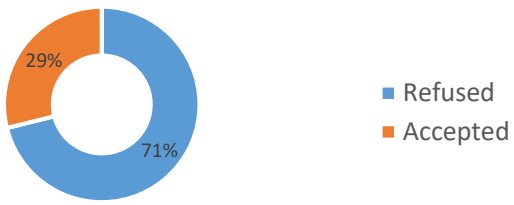
1. ***Personal data***, such as name, surname, fiscal code and company denomination. These questions were crucial in order to match the respondent person in the original database and can compute in this way a merge between the old database and the answers achieved with the survey;

[11] A full version of the survey is available at Appendix B.

2. ***Past professional experiences***, asking to the entrepreneurs if they had any previous work experience and if yes, which type (e.g. in a family firm, in other companies, as consultant and/or if they had already established another firm – serial entrepreneurs), and how useful it was during the whole entrepreneurial activity;
3. ***Information about the firm***, such as the number of employee, revenues and innovation (percentage of their gross return given by new products in the market) in four different periods: first, second and third year of the company foundation and 2015. Moreover, it was asked if they were in Veneto and what finance sources they utilized to start their business. Here was also examined if the entrepreneurs started the business alone or with partners, the relation between them and why they decided to involve other people into their business activity;
4. ***Ecosystem elements***, such science parks, incubators, chamber of commerce, category associations (Confindustria, Associazioni Artigiani etc.);
5. ***University role***, asking them how much important they consider the experience as student for the entrepreneurial life, if there were any stimuli by the University and if entrepreneurs are still in contact with the University of Padova after the graduation;
6. ***Personality of the entrepreneur***, we asked the motivations for the business foundation and where was born the personal relational network of entrepreneurs.

For a better understanding of the student entrepreneurship phenomena, in accordance with Prof.ssa Sedita and Dott.ssa Apa, it was decided that a good sample size should have had approximately 200 answers. For this reason, in less than three months (March - May 2017), following the stratification schema shown in Graph 4, and making the calls in working hours from Monday to Friday and often during the weekend[12], were called roughly 800 hundred people collecting 231 answers. In Graph 6, it is shown the percentage of people who accepted and who refused to participate to the survey.

Graph 6 Willingness to participate to the survey



Source: db_Co, Authors' elaboration

[12] It depended on the appointment scheduled with the entrepreneur. One of the main problem utilising the C.A.T.I. methodology was the difficult to directly speck with the ex-student, because for example she was busy in that precise moment, because she was outside the office and/or because she was dealing with the business processes

The response rate of 29% is given by the fact that the database provided by InfoCamere S.c.p.A had both lack information and obsolete data since it contains numbers that refer to the 2015 and the same database was used in March-May 2017. For example, not all entrepreneurs had a telephonic number and others were different from the actual ones. To solve this issue was searched the name of the company or the name of the entrepreneur on the web, on LinkedIn or on AIDA to find a better contact and get in touch with him. Moreover, some ex-student refused at all to be interviewed because of their limited available time, others because of their missing of trust (especially for the use of the C.A.T.I. technique due to the impossibility to verify the identity of the interviewer and that the survey was for an academic project), others because of their none interest in participating in a research and others because they thought the interviewer was a telephonic seller.

From the 231 respondents were deleted 15 questionnaires, some for lack of information[13] and others for the overall quality of the completed survey. Moreover, since in literature we can consider the student entrepreneur such as that person involved in a business creation process while she is still student and/or immediately after her graduation (Colombo, Piva, Rossi-Lamastra, 2016), we decided to cut from our analysis all respondents that created a firm before to start their academic path. This deleted portion represented the 6% of the collected surveys. We kept instead those subjects that became entrepreneurs after five year their graduation. This, to make possible a comparison between them and the other categories of entrepreneurs.

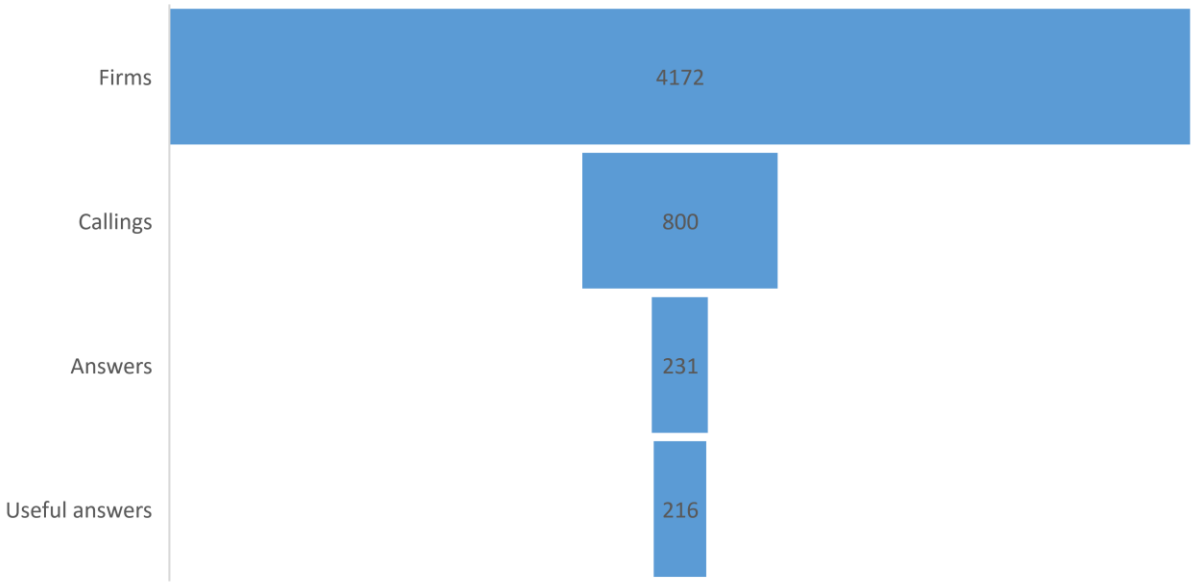
So, our attention was all canalised-on entrepreneurs that created their company during their studies and within or after 5 years after their graduation. The total answers utilized for our analysis where 216.

In Graph 7 it is shown a funnel to summarize the whole calling process indicating the numbers achieved in each phase. In Graph 8 instead, it shown the composition – firms were born during the study period, within 5 years or after 5 years the consecution of the academic title of the entrepreneur – of our respondents.

and she was not willing to spend 10-15minutes for the questionnaire. For this reason, often it was asked to the entrepreneur or to her staff to schedule an appointment outside the work time for the calling interview.

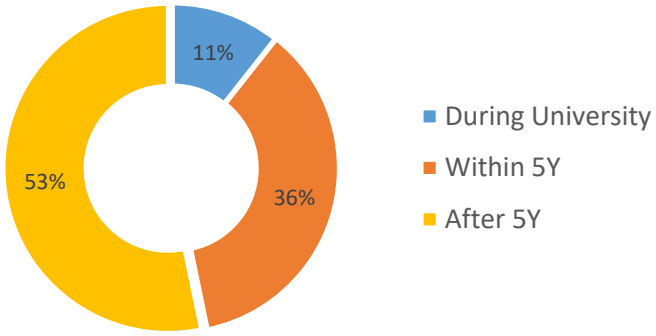
[13] Not everyone was willing to answer to questions related to the firm's dimension: revenues, number of employees over years, percentage of revenues given by innovative product etc. It was especially true for "individual firms". For "limited companies" the problem was much more marginal and where the entrepreneurs were reluctant, the initial diffidence to reveal the above information was passed when we remembered them that the balance sheet of limited companies is public in Italy and all information regarding the firm are available to everyone.

Graph 7 Summary funnel of the callings



Source: db_Co, Authors' elaboration

Graph 8 Born of the analysed firms

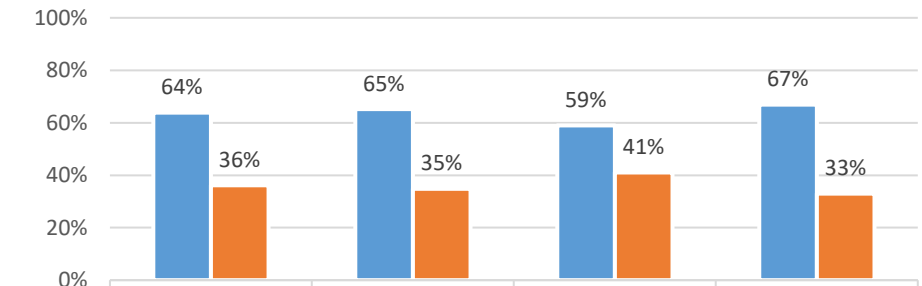


Source: db_Co, Authors' elaboration

3.5 Descriptive statistics

First of all, it is important to understand the composition of the analysed entrepreneurs: when they created their firm (during the study period, within or after 5 year the graduation), their age, their gender, their university course (crossing the data with the legal nature of the firm, with the gender of the entrepreneur and with the creation period of the firm), the number of the economics ECTS, their grade mark and so on.

Graph 9 Firms creation for gender



	Whole Sample	During University	Within 5Y	After 5Y
Male	64%	65%	59%	67%
Female	36%	35%	41%	33%

Source: db_Co, Authors' elaboration

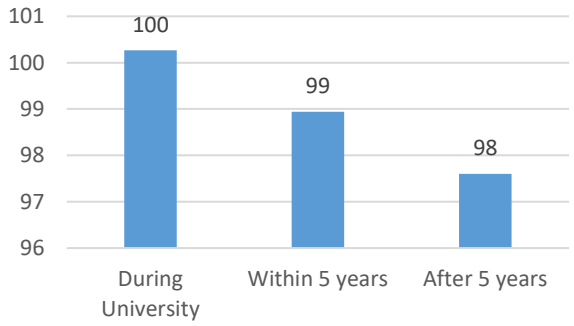
Graph 9 shows the composition of our sample: 64% males and 36% females. The possibility to be an entrepreneur seems to be more common for males. It is interesting to see the different percentages in the three analysed periods (during university, within 5 years of after 5 years): even if there is always a very important difference in the number of firms created by men or women, it appears smaller within 5 years the graduation rather than in the other two considered periods. It could be related, for example, to a higher willingness of females to start a business, take a higher portion of risk instead of accepting a salary month by month, while they do not have a family yet. After 5 years the graduation the gender difference in the business creation process is really considerable. As noted by Duxbury and Higgins, women experience higher levels of work-life conflict than do men (2001).

About the difficult of women on starting their own company, the action plan "Entrepreneurship 2020" (European Commission, 2013) highlighted issues related to the creation of a new business for women rather than men, mainly for problems related to the access to finance, training, networks and the reconciliation between the company and the family. In 2009, the Commission launched the European Network of Female Entrepreneurship Ambassadors that provides support and role models addressed to potential entrepreneurs. In addition, in 2012 the Commission presented a proposal to improve the gender balance on the boards of listed companies. Even if an individual requires different skills and abilities than entrepreneurial to be part of the board, a greater number of women in senior management could serve as a role model for other women in general and stimulate the resourcefulness.

Looking at personal academic results of our entrepreneurs, it is possible to state that the final university grade (Graph 11), in average, does not present a significant difference for subjects created their company while still students and those that started their businesses within or after

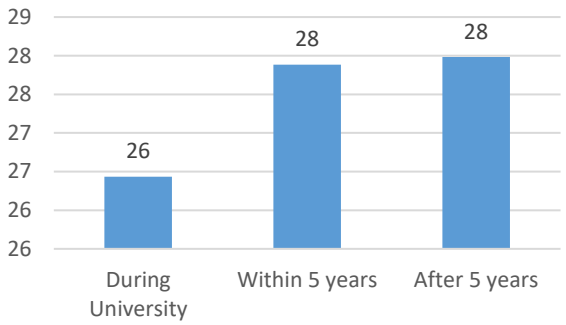
five years their graduation. It appears more interesting data presented in Graph 10 where it is shown the average age at the moment of the graduation. Even if there no significant difference, in age terms, for the last two categories since both have an average of 28 years old, it is possible to notice the younger age at the graduation, 26 instead of 28, reported by those subjects that

Graph 11 Average final grade



Source: db_Co, Authors' elaboration

Graph 10 Average age at the graduation day

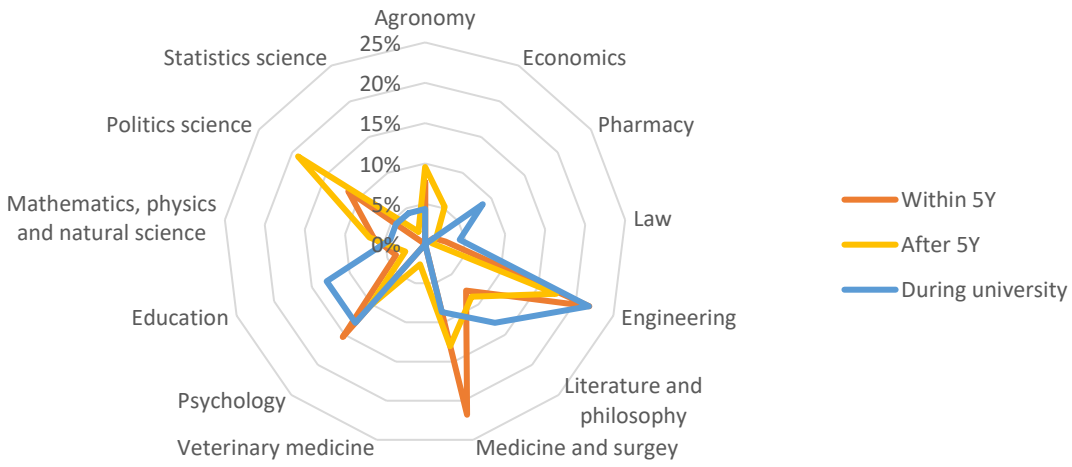


Source: db_Co, Authors' elaboration

became entrepreneurs while studying.

In Graph 12 entrepreneurs were divided for the university course category they followed, taking into consideration the three business starting periods. In average, engineering presents the highest percentages of student entrepreneurs A study of the economic impact of the MIT (Massachusetts Institute of Technology) founded that of their alumni, 50% to 100% more engineering than science alumni became firm founders. Wei (2005) stated that engineering graduates who go on to become successful CEOs and senior officers of companies "are often vocal in praise of the virtues and benefits of their engineering education, and they believe they acquired a number of positive attributes that are useful outside of a career in manufacturing and construction, such as rigorous discipline, a general knowledge of science and technology, the habit of collecting relevant information followed by quantitative analysis of data to construct conclusions and recommendations, teamwork, and strong oral and written communication

Graph 12 Academic course of entrepreneurs



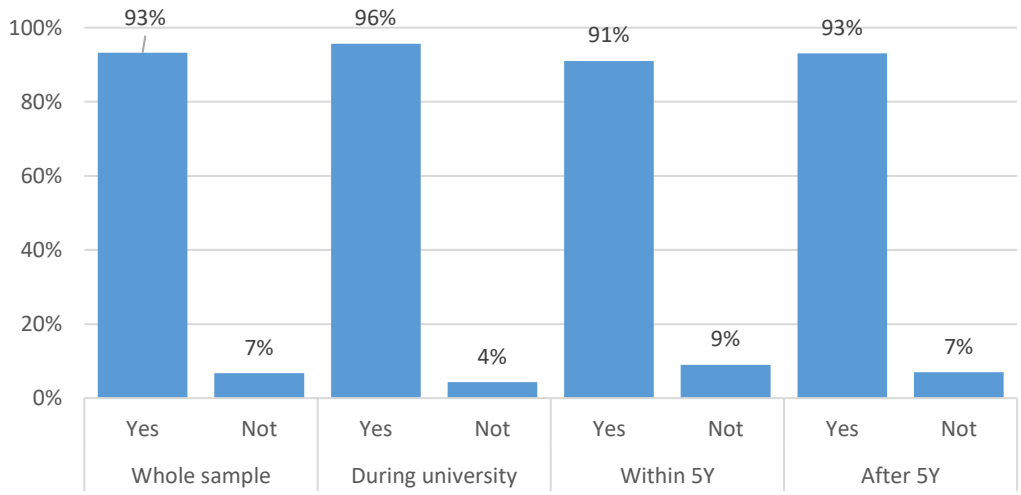
Source: db_Co, Authors' elaboration

skills" [1, p. 131]. Colombo and Grilli (2005) confirmed the correlation between technical/scientific education and entrepreneurship, explaining in this way the inclination of engineering students to found firms. The high presence of non-technical courses within and after five year the graduation (e.g. psychology, politics science), is given by the high difficulty of those subjects to enter into the labour market and find gratifying opportunities. Medicine and surgery shows a high percentage too: this is due the fact that almost all of them was enrolled at "tecniche audioprotesiche" university course. After achieved their academic goal, they opened shops and assistance point of audio-prosthesis

3.6 Past professional experiences

The second part our descriptive analysis refers to the past professional experiences of the responding subjects. In Graph 13 it is shown the percentage of both those that had and did not

Graph 13 Percentage of entrepreneurs with past work experience



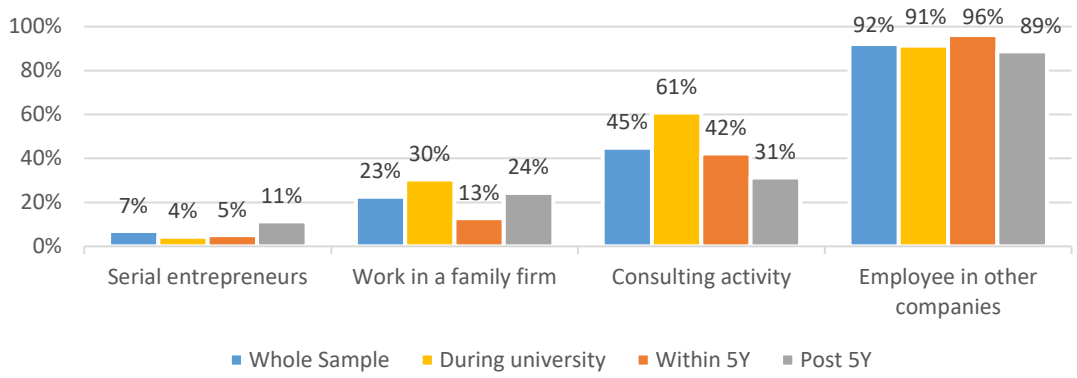
Source: db_Co, Authors' elaboration

have a previous work experience before to start their own business. Here again, we divided our sample in the three aforementioned periods of business creation and it is possible to see that, in average ("Whole sample"), approximately the 93% of entrepreneurs had a previous work experience. Data shows a higher number of entrepreneurs were born during university that had past professional experiences (96%) compared with those were born within five years the graduation (91%) and with those after five years (93%).

In Graph 14 are presented the typologies of previous work experiences done by our entrepreneurs. For this question, the respondents were allowed to put more than one answers choosing from: 1) I worked as employee in other companies, 2) I worked in the consulting sector (both independently and as employee), 3) I worked in a family firm, 4) I already launched other companies (serial entrepreneurs). What emerged from our analysis is that the wage-work

in other companies represents the most common choice (92%), with a minimum of 89% by entrepreneurs after five years and a maximum of 96% for those within five years. Another important role is played by the experience as consultant (45%) especially for those that created their firm while still student (61%). This can be explained by the fact that they could excel in their business area and could have been involved in consultancy activities by other companies. Moreover, the above 61% could also be related to the fact that they experienced a work activity

Graph 14 Typologies of past professional experiences

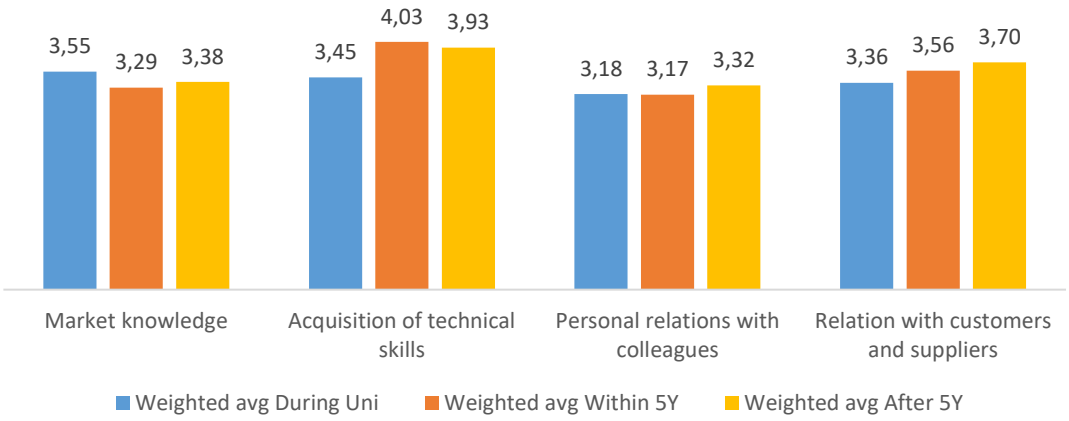


Source: db_Co, Authors' elaboration

in a family business (30%), so they absorbed the knowledge of the family firm and started to dispense advises to other firms. The last part of the graph refers to serial entrepreneurs and it presents higher results for subjects that started their business after five years the graduation (11%) compared with the other categories (4% during university and 5% within five years).

For the Graph 15 it was asked the usefulness of the previous experiences for their current entrepreneurial activity. For the scope, it was utilized a Likert scale from 1 to 5, where the meaning of 1 was "not important at all" and 5 was "extremely important". Below are indicated the weighted averages for each considered period. It possible to notice that in the three periods

Graph 15 Utility of past work experiences



Source: db_Co, Authors' elaboration

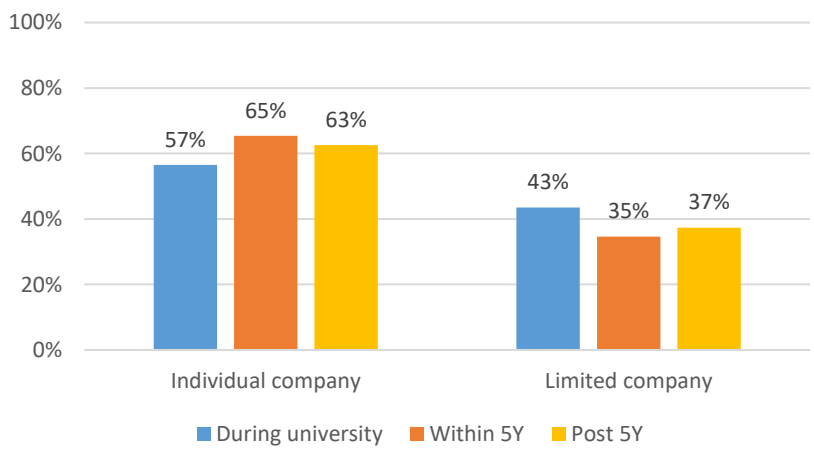
values are more or less equal for the knowledge of the market, for the establishment of relations with colleagues and for relations created with customers and suppliers. The most significant aspect here is the acquisition of technical skills that shows different results between the considered periods: 4,03 and 3,93 related to "within five years" and "after five years" respectively, versus 3,45 declared by entrepreneurs that were born at university. This difference is probably related to the type of experience accumulated by those subjects: as shown in Graph 14, entrepreneurs who started their activity within the university benches were actively involved in consultant works. Usually, but of course depends by the considered sector, experiences as consultant are useful for the knowledge of the market, for the network that is possible to build, for the managerial skills that are possible to acquire but much less for the acquisition of technical skills. This because they mainly derive by long experiences in other firms operating in the same or similar markets.

3.7 Information about the firm

This section is dedicated to a descriptive analysis of the information about firms: type of enterprises created, their localization, number of employee, annual revenues, finance sources utilized to start the companies and so on.

First of all, we examined the form of enterprises, individual and limited companies (in Italy they are called "ditte individuali" and "società di capitali" respectively)[14]. We looked if there was any difference in the form of created firms in relation to the period of when they were born Graph 16.

Graph 16 Type of firms



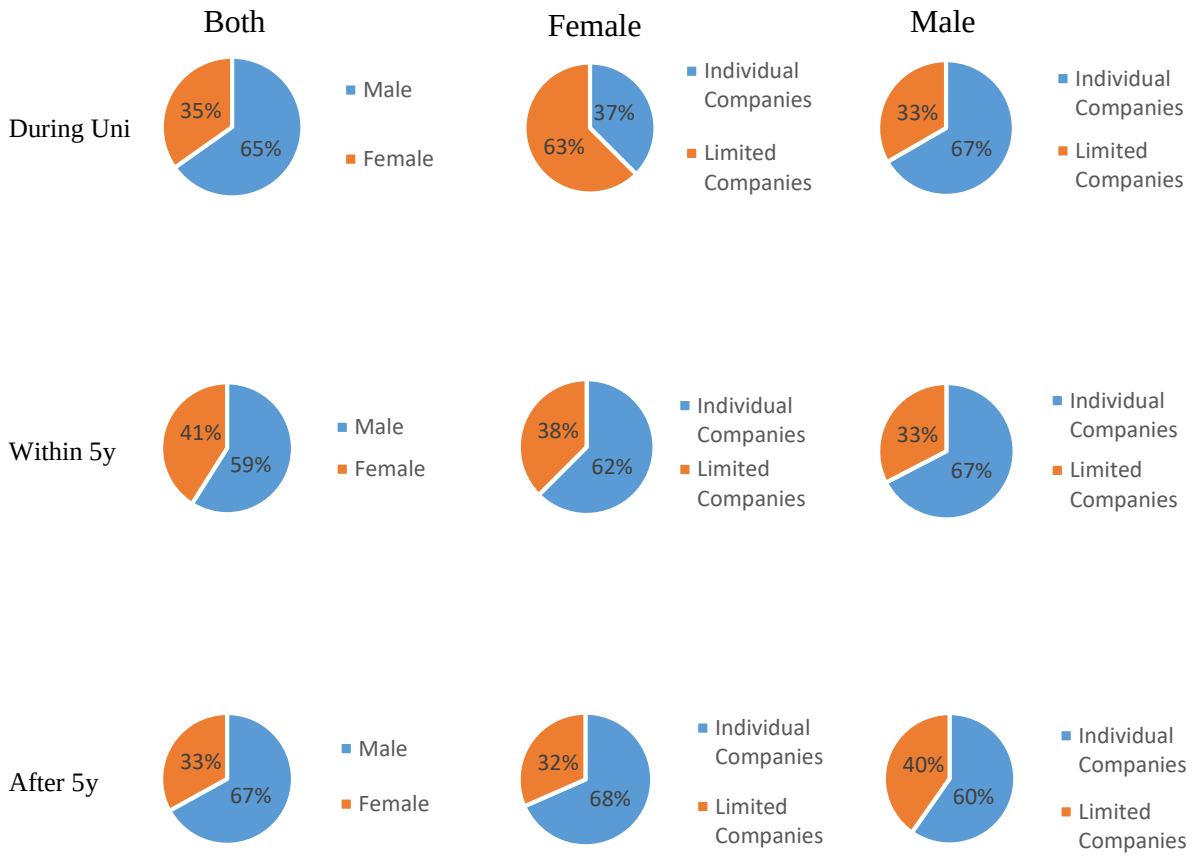
Source: db_Co, Authors' elaboration

[14] Here we are not taking into consideration enterprises in the form of self-employment (known in Italy as "partite IVA"), partnership (known in Italy as "società di persone"), cooperative and other forms apart individual and limited companies.

From the above graph, it looks like there is not high difference in the form for firms created after the graduation. However, it presents a variation of 8% in the form firms for companies created during the studies and after that period. The reason could be related to the fact that students are willing to take a smaller portion of risk and limited companies help in this sense because they have the advantage to guarantee a higher protection towards entrepreneurs. For example, in case of failure of the enterprise the entrepreneur does not risk her own capital and properties to pay potential debts, but will be used the social capital deposited on the firm.

Graph 17 presents an analysis computed by crossing the gender variable (male or female), the type of the created firms (individual or limited companies) and the business creation period (while still student, first row; within five years the graduation, second row; after five years the graduation, third row).

Graph 17 Gender of entrepreneurs



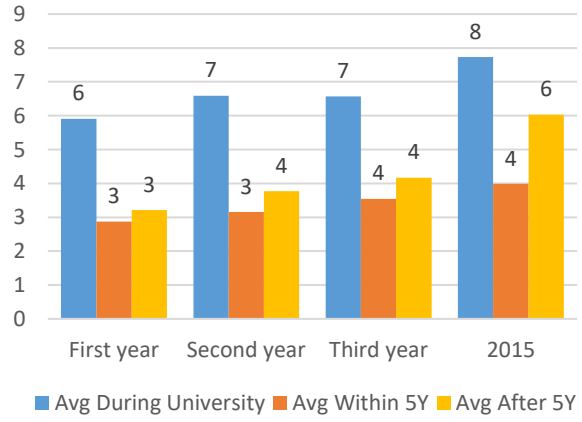
Source: db_Co, Authors' elaboration

In general women appear to be less willing a start a company in the three-considered period, with similar percentage for the first and the third period. In between, within five years, the gap between women and men entrepreneurs appears to be smaller. In fact, during the second phase women represent the 41%, an 8% more, compared with those that started a business after five years (33%). As we previously said, this could be related to the fact that immediately after the

university, women are less involved in family works and are willing to start a business. After that period, the conflict between work and family increase and they are considered mutually incompatible (Jennings 2007). In literature has been identified three different types of work-family conflict: (1) time-based conflict, given by the limited amount of time available to handle duties in both dimensions; (2) strain-based conflict, which occurs when stress in one domain spills over into the other one; and (3) behaviour-based conflict, which results when behaviours required by one domain are incompatible with those required by the other one (Greenhaus & Beutell, 1985). A curios aspect in the nine representations above, is the fact that for the whole periods the repartition of individual and limited company is roughly the same, but it is exactly the opposite for the second graph (intersection between "Female" and "During Uni") where women are more likely to start a business in the form of a limited company. This, probably, because women feel the need of a higher degree of certainty and security in the regulation of relations with possible partners.

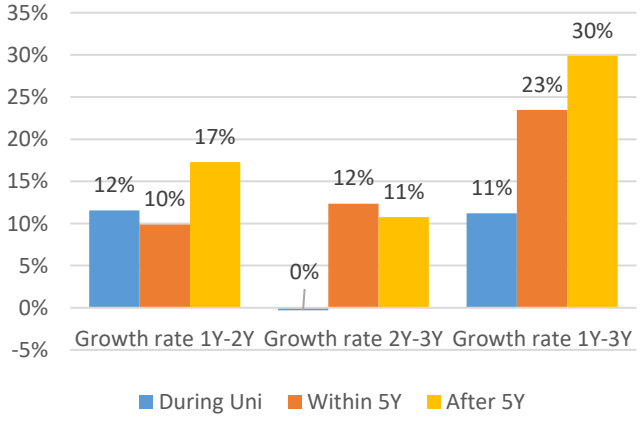
Looking at the employee's side we tried to investigate if there was any difference in the hiring numbers and in the growth rate of workers over years in relation with the three considered periods. We considered also the above numbers in relation to the company form. For this part of analysis, the respondents were asked to indicate the number of employees of their company at the end of the first, second and third year from the foundation of their firm and at the end of the 2015. Starting from the number of hired workers, Graph 18 shows us that companies founded by entrepreneurs while still student, tend to hire a higher number of employee from the beginning (6 workers), compared with the path of the other entrepreneurs (3workers). The numbers for those subjects remain almost constant or have small increases over years, while the hiring numbers for the other two types of entrepreneurs increase over time. It is easy to understand this aspect by looking at the employee's growth rate in Graph 19 (they were

Graph 18 Avg number of employees



Source: db_Co, Authors' elaboration

Graph 19 Employees growth rate

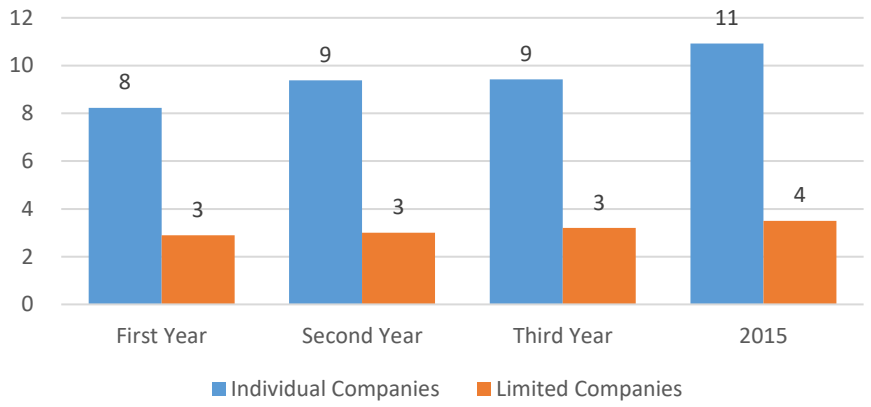


Source: db_Co, Authors' elaboration

considered: growth rate between the first and the second year, growth rate between the second and the third year, growth rate between the first and the third year).

What looks really interesting is the comparison of hired workers between individual and limited companies, Graph 20. Here we founded that individual companies have a higher number of employees and the difference, with the numbers achieved by limited companies, is almost constant over years and it is approximately higher of the 200%.

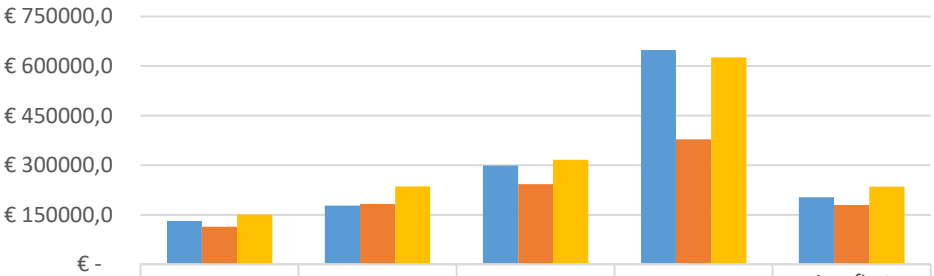
Graph 20 Comparison of the number of employees with the company form



Source: db_Co, Authors' elaboration

For the following part of our analysis, the respondents were asked to indicate the revenues of their company at the end of the first, second and third year from the foundation of their firm and at the end of the 2015, Graph 21. This to understand the performances obtained by the different categories of entrepreneurs. Given the nature of the question, a part of our sample refused to provide us this piece of information[15]. This was particularly true for entrepreneurs who established a personal firm, because they are not obliged to provide to the chamber of commerce the balance sheet of their company (in contraposition for what happens for the

Graph 21 Revenues comparison



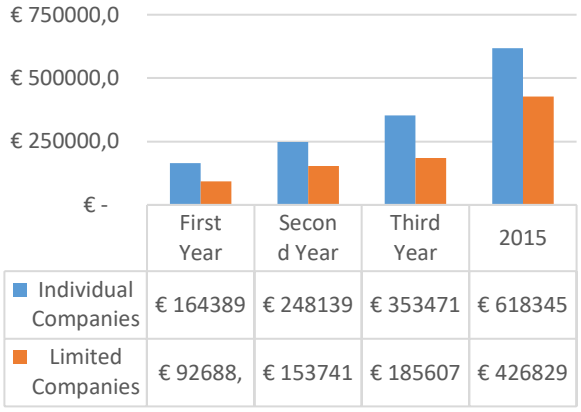
	First year	Second year	Third year	2015	Avg first three years
Avg During Uni	€ 131210,526	€ 177368,421	€ 299210,526	€ 648526,316	€ 202596,491
Avg Within 5Y	€ 113466,968	€ 182960,714	€ 242267,444	€ 378064,738	€ 179565,042
Avg After 5Y	€ 150635,714	€ 236131,313	€ 316319,149	€ 626390,0	€ 234362,059

Source: db_Co, Authors' elaboration

[15] Our analysis here is based on 181 answers

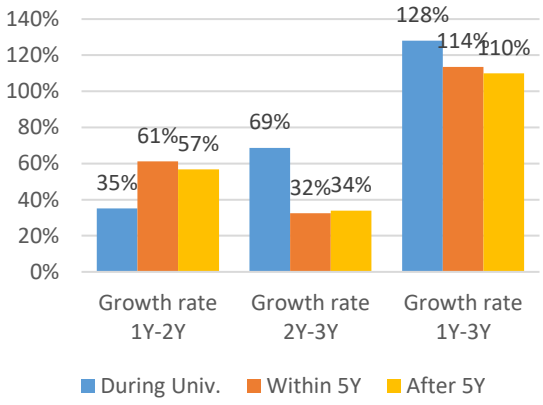
limited ones) at the end of the fiscal year. The problem was not related to individual companies only. In fact, some founders of limited firms were not inclined to declare the asked revenues too, but given the nature of the form of the enterprise, they knew that these data were public and easily accessible to everyone, for example using the AIDA database. Once the interviewer remembered this aspect to the entrepreneur, she was more inclined to answer to the questions. Furthermore, to better understand the veracity of the answers related to the revenues, the interviewer compared the achieved result during the callings with the data reported on AIDA[16] and, without modifying the given answers, he understood there was a system error: entrepreneurs were declaring an amount at least 20% smaller compared with that one available on AIDA. This, probably, is the reason why the below Graph 22 shows us better results obtained by individual firms. What here is particularly interesting is the Graph 23 that shows the better performance, after a relative low growth compared with the others, achieved by enterprises

Graph 22 Revenues comparison for nature of the firm



Source: db_Co, Authors' elaboration

Graph 23 Revenues growth rate



Source: db_Co, Authors' elaboration

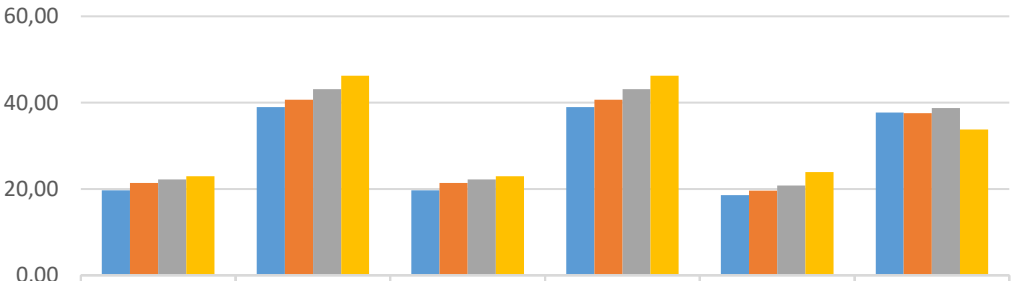
founded by subjects while they were still students. This could be related to the fact that university's homework, tasks and exams require time and effort to be done.

The importance of innovative processes to build the competitive advantage of a firm, is well known in the managerial literature. The creation of knowledge under the form of new products and/or services is one of the main factor to explain the performance differentials and survival rates among enterprises (Kogut & Zander, 1992; DeCarolis & Deeds, 1999). In particular, for the Italian entrepreneurial and industrial panorama, focused primarily on mid-low technological sectors, innovation represents an unavoidable condition to maintain shares market against the continuous global competition of low cost producers (Rullani, 2004). To analyses the grade of innovation of the company we demanded the amount of revenues, in percentage terms, derived

[16] It was possible only for limited companies. For individual enterprises, we were not able to verify the veracity of the provided answers since we did not have any instrument to check the data.

from their eventually new products on the market. Once again, it was asked for the end of the first, second and third year from the foundation of their firm and at the end of the 2015. A considerable part our sample was not able to provide a reasonable answer, due to a missing subdivision of their revenues. Graph 24 shows a higher innovativeness by limited companies in all the three considered periods. In average, the 40% of their revenues is driven by innovative solutions, despite to what happens for firms in the individual form (roughly 20%). The role of

Graph 24 Comparison of the percentage of innovation w.r.t. revenues



	Individual companies	Limited Companies	Individual companies	Limited Companies	Individual companies	Limited Companies
	During university		Within 5Y		Post 5Y	
First year	19,71	38,94	19,71	38,94	18,55	37,74
Second year	21,42	40,67	21,42	40,67	19,59	37,58
Third year	22,22	43,11	22,22	43,11	20,81	38,77
2015	22,97	46,22	22,97	46,22	23,91	33,81

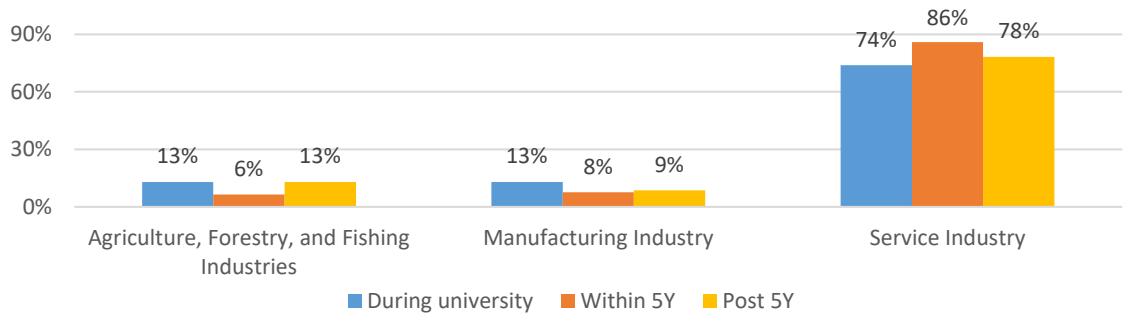
Source: db_Co, Authors' elaboration

innovative services/products seems to be crucial for the success of the enterprises. Moreover, considering that the average dimension of the participating firms is small, these innovation activities are not organized inside a specific Research & Development department, but they are often given by the collaboration of different divisions: production, marketing, sales area and so on. Our entrepreneurs, in other words, efficiently assimilated the modus operandi of the Italian district SMEs: in the face of little investments in formal researches, given by the sectorial specialization and by the small dimension of firms, innovation is a distributed process among different divisions areas of the company, strictly connected with the practice, with the planning processes and with the manufacturing (Brandolini, Bugamelli,2009).

Then we asked to our self in which sector the companies operate. The classification used to identify the company's sector followed the ATECO code [17]used by the chambers of commerce. After our computations, we grouped all sectors in the three-main important: "Agriculture, Forestry, Fishing Industries", "Manufacturing Industry" and "Service Industry". From our analysis, Graph 25, emerges that "Agriculture, Forestry, Fishing Industries" and "Manufacturing Industry" represent only a minor part (between 6% and 13% the first industries

[17] The full list of sectors associated with each course category is available in the Appendix C.

Graph 25 Firm's operating sectors

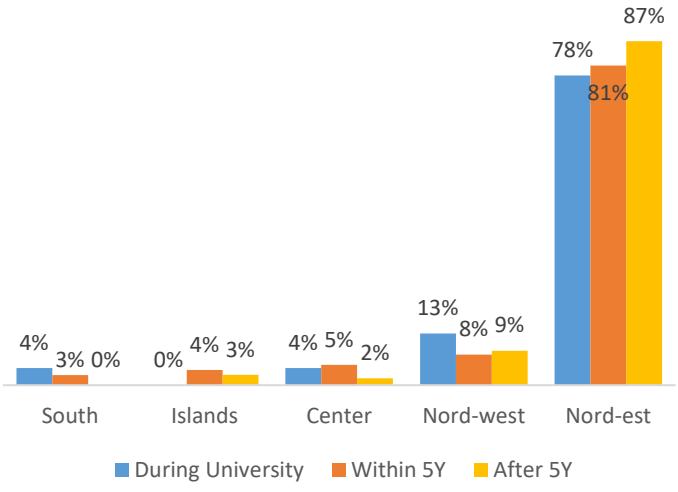


Source: db_Co, Authors' elaboration

group, and between 8% and 13% the second one). Most of the enterprises are focused on the Service Industry. According to the annual report concerning the economic situation of Veneto in 2015 in fact, the sectors with the higher rate of workers is retail, accommodations and restorations (Unioncamere Veneto, 2016).

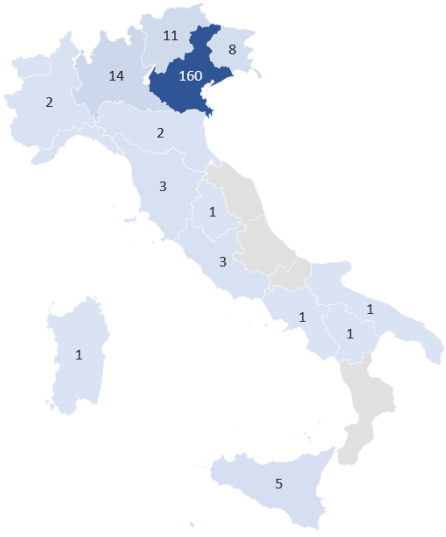
Looking at the geographic repartition of the analyzed enterprises, it is possible to see, Graph 26 and Graph 27 that the major part of them is located in Veneto and in Nord-Est area in general. This primarily because we considered students graduated at the university of Padova, where the majority part of the students is coming from the hinterland and from the Veneto region in general. An important point here is that the analysis does not take into consideration companies created outside the border even if they were constituted by a former student from Padua since were considered only the Italian companies found in the Italian Business Register.

Graph 26 Firms geographic repartition



Source: db_Co, Authors' elaboration

Graph 27 Firms geographic repartition

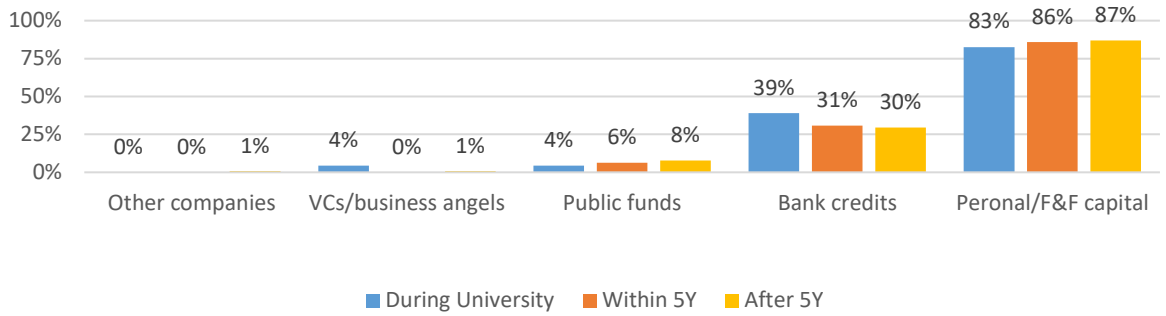


Source: db_Co, Authors' elaboration

Looking instead at the finance sources used by of our sample to start their activities (Graph 28), we can say that in these years Banca d'Italia, Confcommercio, Unioncamere have published statistic surveys reporting the difficulties to the access of credit. The low capitalization of

financial institutions, the high spreads between the interest rate of the treasury bonds of different countries had penalised the access to the credit by the enterprise dimension. In fact, only the

Graph 28 Finance sources



Source: db_Co, Authors' elaboration

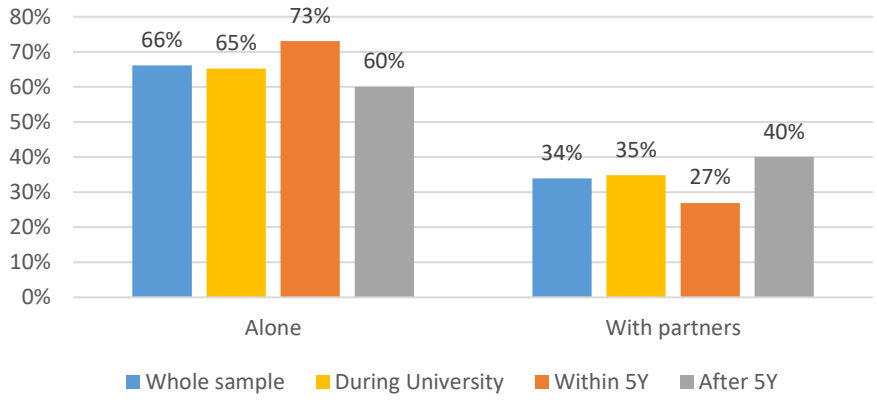
33% (on average) declared to use a bank or any other financial institute to obtain the initial resources to launch her business. Public funds are used only by a minor part, approximately the 6% (on averge), while the 2% (on average) chose VCs and Business Angels. This last low number is due to the fact that in Veneto region, and in Italy in general, private investors are figures not well developed yet. The major part of the entrepreneurs (85% on average) chose to use personal funds, capitals provided by families and/or by friends. Thus, families represent the first financial source for undertake the entrepreneurial path and these data tell us also the need and the importance for entrepreneurs to search low cost funds.

Another interesting aspect to analyse, refers to the subjects involved in the business creation processes. In the past, the economic literature considered the entrepreneur such a "heroic" figure, that thanks to her intuitions is able to generate radical innovation that can disrupt the competitive scenario and create a new technological trajectory (Schumpeter, 1934). The modern literature goes in an opposite direction, recognising the social nature of the entrepreneurship phenomena (Ruef, 2010). Entrepreneurship is a socially built process both because the decision to start a venture is given often by friendly, familiar and social relations, and also because the business idea and its consequent strategy, are the results of continuous interactions among people that share same interests, ambitions, ideas and objectives.

Looking at our data, Graph 29, only the 34% of the analysed sample declared to have had business partners (co-founders)[18] during the firm's initial phase, while the major part (66%) stated that they created their business alone.

[18] We identified as co-founder all business partners that entered into the enterprise composition within the third year of the firm constitution.

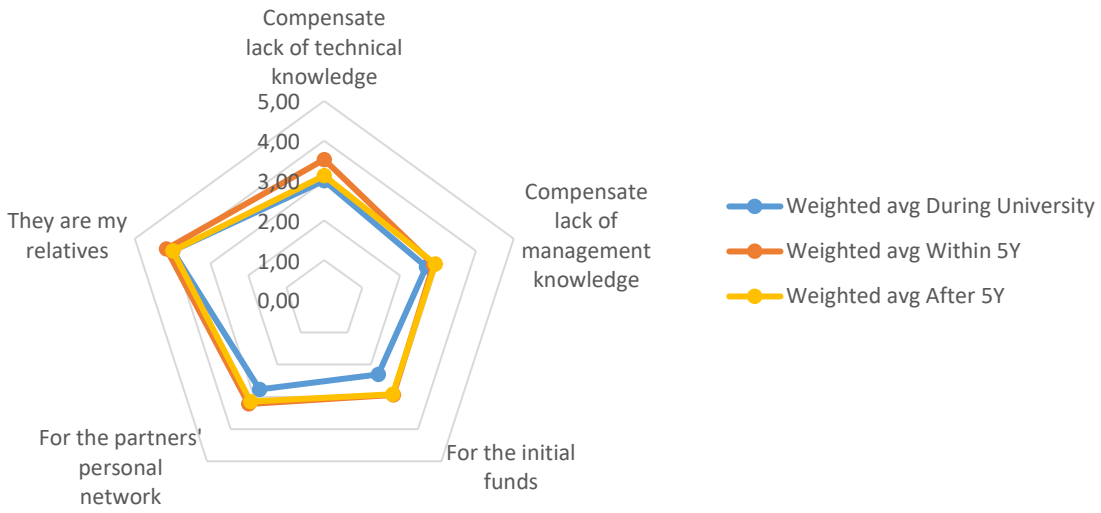
Graph 29 Co-founders schema



Source: db_Co, Authors' elaboration

Considering only the subjects that started their business with other co-founders[19], using again a Likert scale from 1 to 5 where 1 was "I totally disagree" and 5 "I absolutely agree", Graph 30 tell us the reasons to engage other business partners. From it emerges the central role played by the family (4,05 out of 5), strictly followed by the need of compensate the lack of specific technical knowledge and by the personal networks of the co-founders. Another important aspect is given by the need of initial funds, considered more significant by those entrepreneurs that started their companies after the graduation.

Graph 30 Reasons to engage co-founders



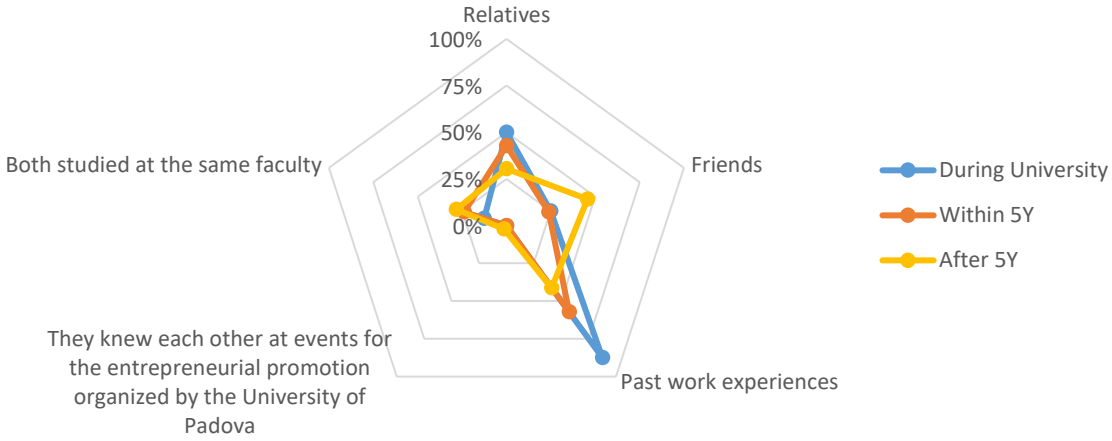
Source: db_Co, Authors' elaboration

In Graph 31, next page, we investigated the relation between co-founders[20] to understand which type of relation exist among them. Past work experiences have a crucial role in the team foundation especially for entrepreneurs that were born while still student. This aspect assumes

[19] For the computation of this part were used 75answers, given by those declared to have had at least one co-founder in business creation process of the firm

[20] For the computation of this part were used 75answers, given by those declared to have had at least one co-founder in business creation process of the firm.

Graph 31 Relations between co-founders



Source: db_Co, Authors' elaboration

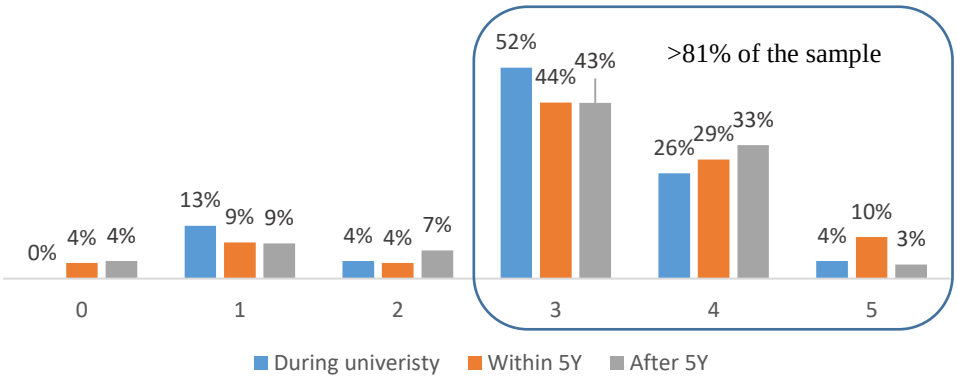
a decreasing important role in the team building process with the increase of the time of the business foundation. The same role is played by relatives. In the opposite way, instead, friends are privileged with the increasing of the time of the business foundation. So, the personal network of the entrepreneur assumes a central role in the identification of potential business partners.

3.8 Ecosystem elements

This section is dedicated to a descriptive analysis regarding the ecosystem elements. The main object here is to understand if there is any component that could help entrepreneurs in both foster opportunities they saw on the market and help them to growth their companies.

For the investigation of this aspect we asked to our respondents if they used any of the following instruments: science parks, chamber of commerce or any other public institution for the entrepreneurship promotion, category associations such as Confindustria, Associazione Artigiani etc., incubators and personal relational network. What emerged from our data (Graph 32) is that approximately the 81% of the interviewed subjects used at least three out of five of the aforementioned network actors. It means that there is a high communication among firms and the surrounding territory. The importance of this aspect is quite known in current researches on entrepreneurship that clearly document the importance of the social capital, and stress the ways in which individuals take advantages of their own social affiliations and network strategies in pursuit of their entrepreneurial objectives (Hoang & Antoncic, 2003).

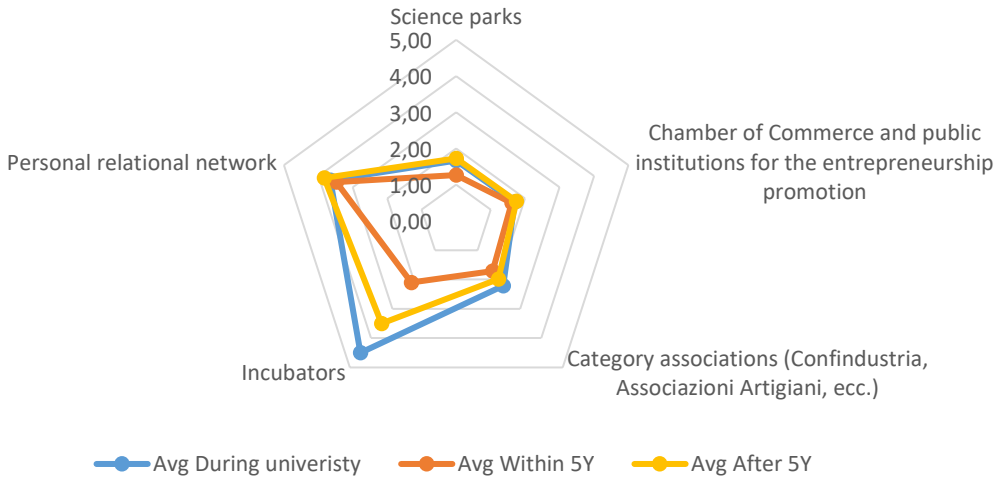
Graph 32 Network Breadth



Source: db_Co, Authors' elaboration

But how effectively useful are the above communications? And, are them equally important for each considered actor? To understand these aspects, we used once again a Likert scale from 1 to 5 (with 1 equals to "not useful at all" and 5 equals to "extremely useful"), or 0 if they did not use that particular ecosystem element. For the computation of our data we used only non-null answers, trying in this way to recognize the importance of the considered ecosystem component. In fact, for Chamber of Commerce, for category associations and for personal relation network, we had non-null answers by almost every subject of our sample. For

Graph 33 Ecosystem actors



Source: db_Co, Authors' elaboration

incubators and science parks, we had 18 and 80 answers with a vote higher than 0. From our calculations shown in Graph 33, we can say that even if incubators were used only by few entrepreneurs (only 8%), they played an extremely important role (4,50 out of 5) in the definition of the business ideas and their successive definition and establishment of firms. Moreover, the usefulness of incubators seems to me more appreciated by "student entrepreneurs" despite those that founded their firm within five year the graduation. Another important role is played by the personal relational network of the entrepreneur (3,65 out of 5), but this time regardless the foundation period. As we already said in the previous paragraph,

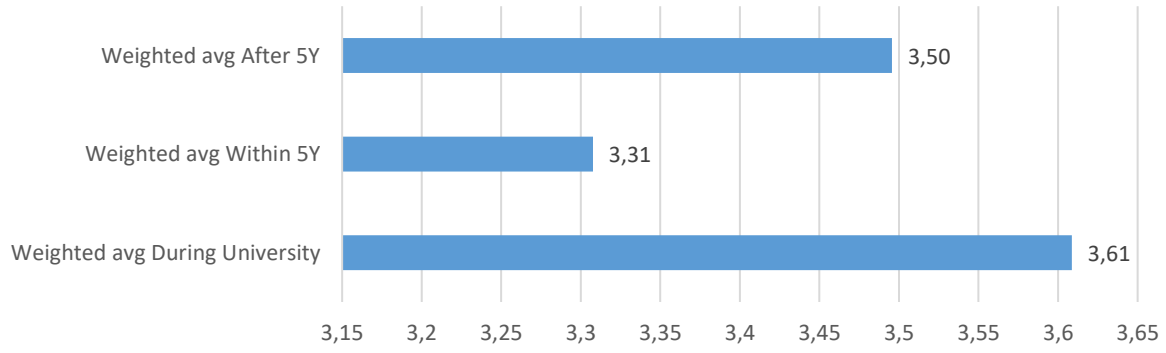
the personal relational network represents a primary source of support (both economic and moral) and important element for the selection of potential business partners.

3.9 University role

The role of the entrepreneurship education has been identified as one of the central factors that help youths to understand and foster an entrepreneurial attitude (Gorman et al., 1997; Kourilsky and Walstad, 1998). Considering the effect that education could have on both attitudes and aspirations of young people, there is a need, on one side, to understand how to develop and stimulate potential entrepreneurs even while they are still within benches; on the other hand, instead, to understand the satisfaction of the studies conducted by already established entrepreneurs.

Given our sample we tried in this section to investigate, indeed, the role of university on the student entrepreneurship. Played role in terms of utility of the acquired academic knowledge, in terms of mindset predisposition, in terms of formation of stronger individuals (due to the difficulties of exams, hardness of homework, class projects and so on). The results we ended up with (Graph 34) show a considerable appreciation among youngest entrepreneurs, with an evaluation of 3,61 out of 5. During the few hundred callings, emerged a different type of appreciation in relation of the birth period of the firm and in relation of the university course attended by subjects. More precisely. The first group of individuals (entrepreneurs were born at university) were grateful for the quality of the teachings while the second group reported an overall lower appreciation, 3,31 out of 5. The last group instead, especially those that studied technical and scientific fields, surprisingly showed a high appreciation of the university path

Graph 34 University appreciation



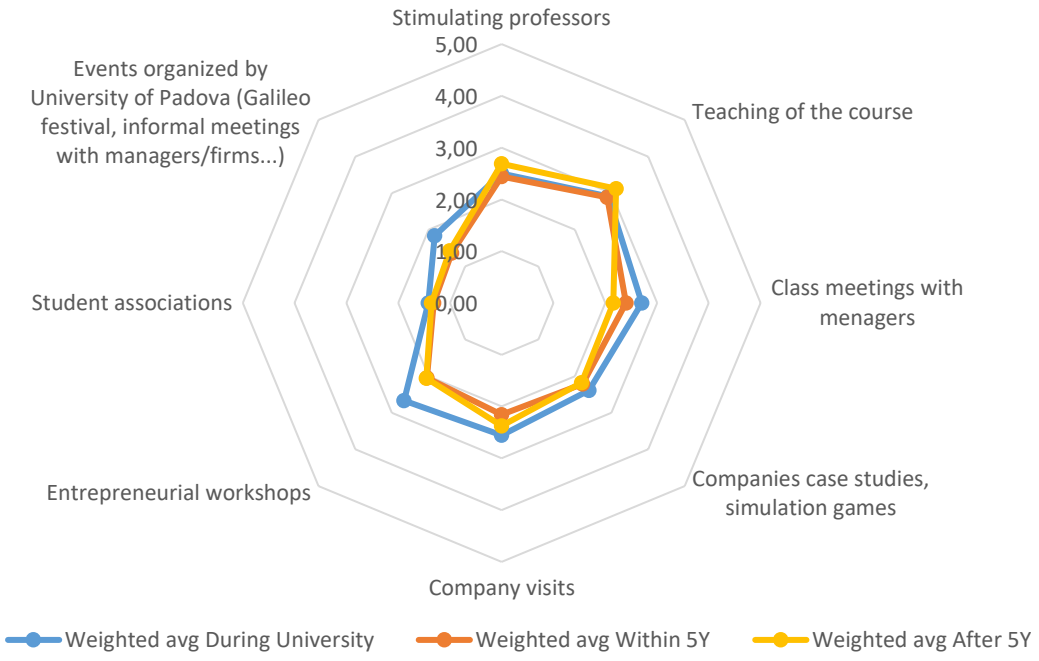
Source: db_Co, Authors' elaboration

especially for the acquisition of technical knowledge. They stated that it was crucial for the launch and for the development of their business, since some of them is producing laser

machines, some others high precision manufacturing machinery, others packaging systems etc. On the contrary, subjects with a non-technical background, always from the third group, noticed the importance of the university especially for its ability to form stronger persons (comparing with the individuals they were before to start the academic course), for the possibility to meet people that became friends and then business partners, and because they received stimuli to look forward for always better life conditions.

For a deeper analysis of the role of the university we made a question where we asked, with a Likert scale from 1 to 5, if the following elements related to the university influenced somehow their decision to start a venture. We stressed the following aspects: stimulating professors, teaching of the course, class meetings with managers (if any), in class case studies of companies and/or simulation games (if any), visits of companies (if they had any), workshops focused on entrepreneurial themes (if they had any), student's association (if they participated in any), participation at events organized by University of Padova such as the Galileo Festival and/or

Graph 35 University stimuli



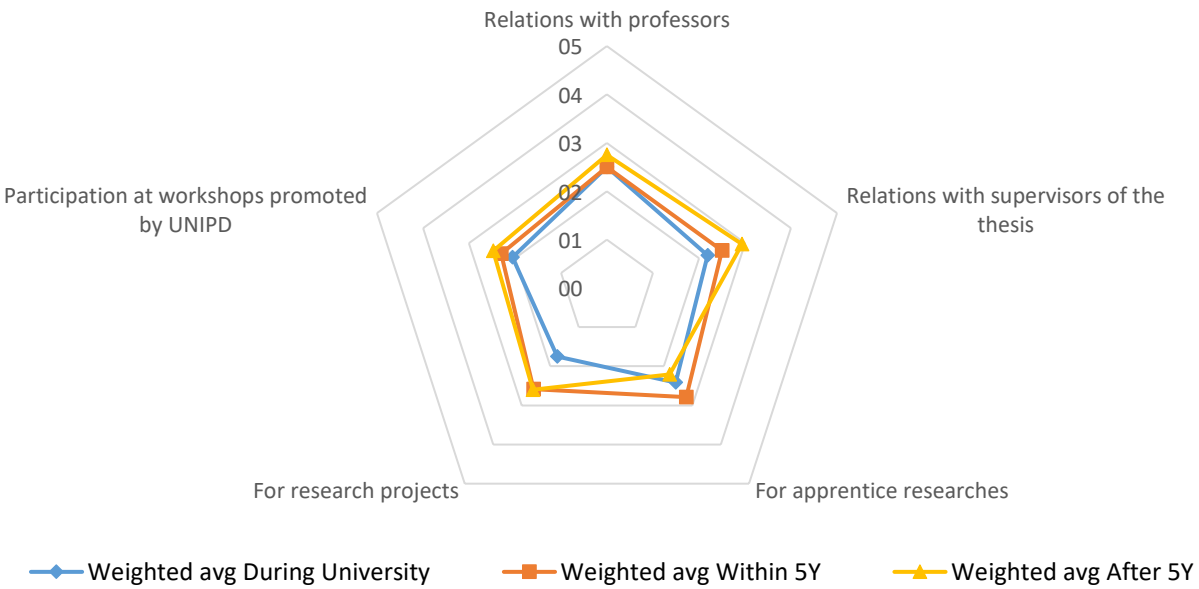
Source: db_Co, Authors' elaboration

informal meetings with managers/entrepreneur (if any). What emerged, shown in Graph 35, is that university have a moderate action on the business intention only thanks to the teachings of the courses, especially for those that founded their firm after five years the consecution of the academic title. "Student entrepreneurs" declared more stimulating, compared with the opinion of the other two groups, the meetings in class with managers, the participation to some visits in companies' plants and the participation to workshops on the theme of the business creation. Student's associations and informal events promoted by the university does not seem to have

an important significate. We have to remember and take in mind that we are dealing with graduated students from the 2000 to 2010, a period where there was not a high effort from university to invest in such events and/or opportunities. In fact, only a very little portion of our sample declared to have had participate to events promoted by the university and this primarily because university did not organize this kind of actions until few years ago. Nowadays, University of Padova is much more involved in the organization of network meetings, in the promotion of informal events with managers or important entrepreneurs and, with a high degree of probability, we will see in the next future different results from those obtained here.

Going further on our analysis, another element that we investigated is linked to the existing relations between the University of Padova and entrepreneurs after their graduation. It is an essential point to understand if exist or not a formal or informal connection between the examined counterparties. Graph 36 let us appreciate the evaluation given by the respondents for each of the asked elements. They stated that after the graduation university totally disappeared from their life, and they disappear from the university's radar too. Most of them

Graph 36 Post lauream relations with University of Padova



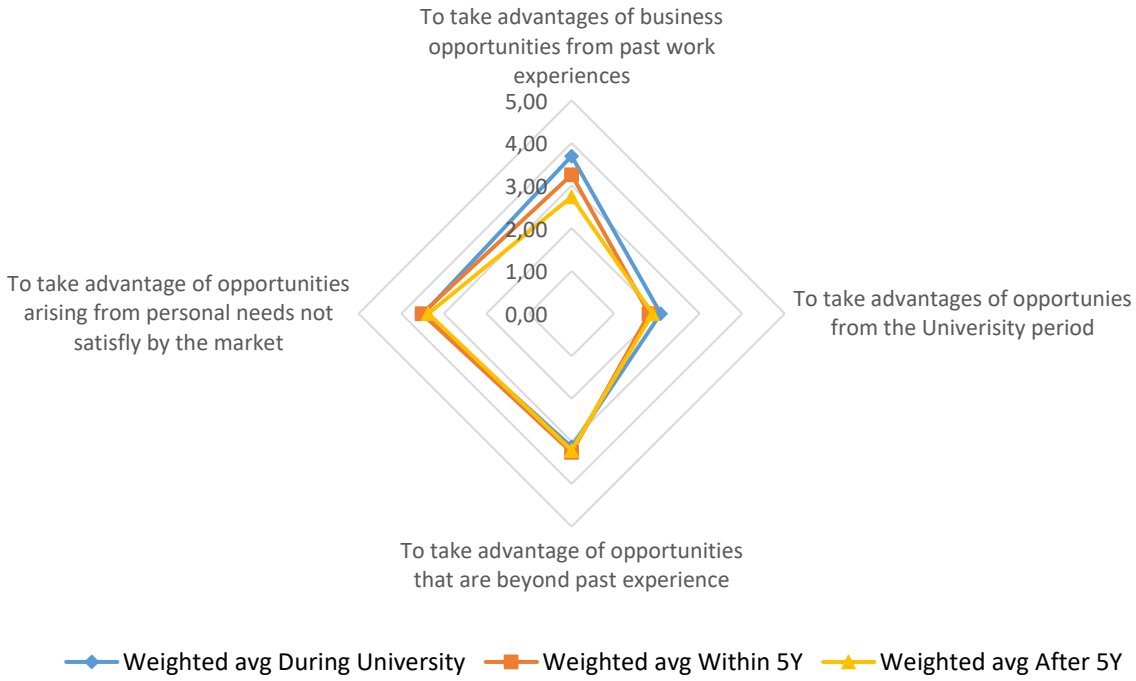
Source: db_Co, Authors' elaboration

was really disappointed regarding this "behavior" done by the university. A big portion of our respondents did not know there was the possibility to collaborate with the university for the research of apprentices; most of them did not know about the collaboration for research projects neither. The elements obtained highest grades, but always smaller than 3 out of 5, are related to the relations with professors, both thesis supervisors and teachers of the followed courses.

3.10 Personality of the entrepreneur

In analyzing and mapping the main characteristics of the considered companies, it is essential to understand the dynamics that led to their constitution. First of all, it is important have clear what are the motivations that encourage a young person to undertake an entrepreneurial career and second, what are the modalities through which the process of starting a new business is structured. For what concern the first aspect we asked them to explain the reasons, choosing among four different options measured with a 1 to 5 Likert scale, of why they decided to start an entrepreneurial activity. Results in Graph 37 show that, for all three entrepreneur's typologies, the main reason is related to identification of opportunities arise from personal needs not satisfied by the existing solutions on the market yet. Here it is important specify that with this statement there are included two different meanings: the first one refers to a personal need of services or products that are not available on the market for example for some specific aspects or characteristics (e.g. a lady reported she had a need for a particular type of service in the asylum because her son has handicap problems. Since there was not anything that properly fit with her situation she decided to open her asylum for children affected by handicaps). The

Graph 37 Reason to start a company



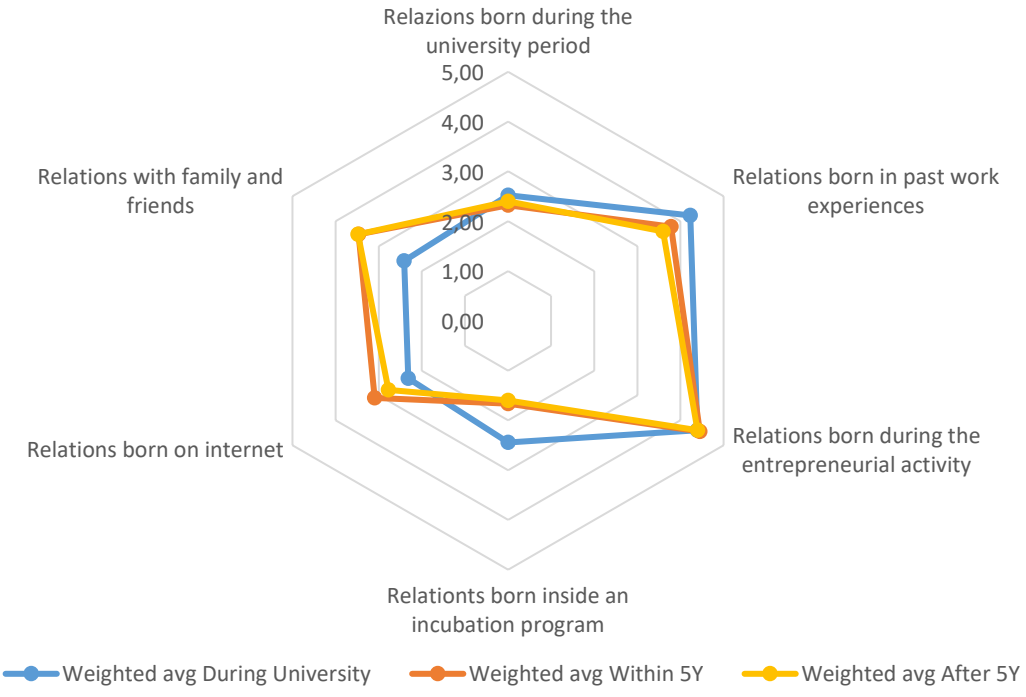
Source: db_Co, Authors' elaboration

second one instead is related to a better work occupation not satisfied by the labor market, for example for low wage reasons, for work-life balance problems or because they had issues to find a proper occupation. Emerge from these two considerations an entrepreneurial

phenomenon guided by a vocation to catch market opportunities and by a desire to improve their occupational situation. A general reading of these results with those outlined in the utility of past work experiences, highlight an entrepreneurial figure similar to that one foreseen by the so called "linear" literature on entrepreneurship (Shane, Venkataraman 2000). Entrepreneurs, with their work experiences and competences, are able to identify and grab market needs not satisfied yet, and they are able to evaluate the connected risk the and success opportunities.

Another important aspect we analysed concerns the personal relational network of the entrepreneur. Here we wanted to understand the role of the social capital for the entrepreneurial activity and more precisely, we investigated which are the most important relations and where they were born. For our question, we asked the importance of the following connections: relations were born within the university benches, during past professional experiences, during the entrepreneurial path, inside an incubation program, on internet or relations with relatives and friends. In Graph 38, respondents affirmed that being an entrepreneur is a day by day activity, meaning that the crucial personal connections are those that were born after the constitution of their companies, with participation to meetings, to workshops, with business travels etc. Also, past work experiences assume a relevant role, because from there were born working collaborations, they permit information exchanges with previous colleagues and for this they are more or less considered as important as the previous category of connections.

Graph 38 Relational network of the entrepreneur



Source: db_Co, Authors' elaboration

Relations that were born inside incubators are more important, but not essential, only for firms created by students while for the others are not important at all. University played a passive role

by giving the opportunity to meet other people (for example in the library or in common spaces) with different backgrounds, from different university courses, with different capabilities and ideas. They lamented that University of Padova did not have an active role on the creation of connections between students or with other players. The last two types of networks, developed on internet and F&F, present the same appreciation among "graduated entrepreneurs", while for the first group they seem to be irrelevant. The good score obtained by the internet's category is related to the increasing use of social networks especially those related with business fields such as LinkedIn. Family and friends, once again, represent an important pillar for the entrepreneurial life: from the conception of the idea, passing to the founding phase of the project to their utility for the firm's life.

3.11 Variables

In this section we computed different regression to better understand firm's performances. Before to move forward to the model description, below it is presented an explanation of all used variables: depend, independent and control variables.

3.11.1 Dependent variable

Since the aim of this part of our work was to understand what could affect business performances, we decided to use the revenues growth rate as dependent variable. More precisely, we decide to take the revenues growth rate from the first to the third year from the firm's foundation (the name of the variable of this aspect is "revenues5").

We decide to apply a logarithm transformation of these data for an easier understanding. Thus, we computed the minimum of the variable revenues5 to verify that the smallest value was not below 1 (Table 9). Since Table 10 shows a minimum of -0,75, we then decide to shift all data of 1,76.

Table 9 Min-max on 1Y-3Y revenues growth

Name	min	max
revenues5	-0,75	165,67

Source: Author's elaboration

In Table 10 it is presented the new variable that we used as dependent one for all our calculations.

Table 10 Description of dependent variable

Label	Name	Type	Description
Revenues growth rate	ln_rev2	Dependent variable	Logarithm of the revenues growth rate from the first to the third year from the firm's birth

Source: Author's elaboration

3.11.2 Independent variables

Such as independent variables we took into consideration some aspects that refer to entrepreneurs' personal sphere, some that analyse their network and others related to the university dimension. Below, in Table 11, there is a description for all of them.

Table 11 List of independent variables

Label	Name	Type	Description
Graduation mark	gradmark	Independent variable	Final mark at university of the entrepreneur
Total credits in economics exams	totcredecon	Independent variable	Sum of the credits in all the exam listed above
Past work experience in a family firm	ex1	Independent variable	Dummy (0,1): Assumes value 1 if the entrepreneur worked in a family firm
Past work experiences in other firms, different from family businesses	ex2		Dummy (0,1): Assumes value 1 if the entrepreneur worked in other firms (no family)
Past work experiences as consultant	ex3		Dummy (0,1): Assumes value 1 if the entrepreneur worked as consultant
Past work experience as founder of other firms (serial entrepreneur)	ex4		Dummy (0,1): Assumes value 1 if the entrepreneur has already founded other firms
Motivation for firm's foundation: exploit opportunities seen in past work experiences	motivation1	Independent variable	Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Motivation for firm's foundation: exploit opportunities birth at the University	motivation2		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Motivation for firm's foundation: exploit opportunities beyond past work experiences	motivation3		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Motivation for firm's foundation: exploit opportunities birth from persona need	motivation4		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Partner influence for firm's creation: incubators	veneto_influence1	Independent variable	Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important". 0 if they did not use that partner
Partner influence for firm's creation: chambers of commerce	veneto_influence2		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important". 0 if they did not use that partner
Partner influence for firm's creation: category associations	veneto_influence3		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to

			"extremely important". 0 if they did not use that partner
Partner influence for firm's creation: science parks	veneto_influence4		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important". 0 if they did not use that partner
Partner influence for firm's creation: personal relational network	veneto_influence5		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important". 0 if they did not use that partner
Number of partners	breadth_network	Independent variable	Values vary from 1 to 5, in relation of the number of used partners (veneto_influence1-5)
Incubators and science parks	incub	Independent variable	Dummy (0,1): Assumes value 1 if the entrepreneur passed through an incubator or a science park
Appreciation academic knowledge	knowledge	Independent variable	Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
University stimuli: U-E relations	f1	Independent variable	Factor obtained through the factor analysis
University stimuli: teachings	f2		Factor obtained through the factor analysis
University stimuli: gatherings	f3		Factor obtained through the factor analysis
Utility of relations with professors	post_lauream1	Independent variable	Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Utility of realtions with thesis supervisors	post_lauream2		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Utility of academic realtions for apprentice researches	post_lauream3		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Utility of academic realtions for research projects	post_lauream4		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"
Utility of academic workshops	post_lauream5		Values vary from 1 to 5, with 1 equal to "not important al all" and 5 equal to "extremely important"

Source: Author's elaboration

- **Graduation Mark**: The variable is a quality indicator of the academic performance of the student and correspond to the final grade obtained in the last experience made by the individual at the University of Padova.
- **Credits in economics exams**: we used the variable totcredecon that indicates the sum of all credits obtained by individuals with exams in economics areas. The complete list of exams in economics areas is reported in the Appendix D
- **Past work experiences**: these variables denote the type of past work experiences practiced by the considered entrepreneurs. In our questionnaire we gave them eight possible answers: 1) work in a family firm operating in the same market of your (of the entrepreneur) company, 2) work in a family firm operating in a different respect to your company, 3) work in other firms operating in the same market of your company, 4) work in other firms operating in different markets of those where operate your company, 5)

work as consultant in the same market of your company, 6) work as consultant in other markets, 7) past entrepreneurial activities in the same market of your actual company, 8) past entrepreneurial activities in markets of your actual company. Then, for our analysis we grouped the above possible responses in the following way: we called "ex1" the answers 1) and 2) indicating it as work in a family firm; "ex2" the union of answers 3) and 4) indicating with it past work experiences in other firms; "ex3" the merger of answers 5) and 6) denoting with it consulting activities; "ex4" it is the union of responds 7) and 8) that denotes serial entrepreneurs.

- **Motivation for firm's foundation**: these variables denote the reasons why the entrepreneur decided to start her company. We crated four variables each for all possible answers of the question n°32[21] that states: "Express an evaluation of the followings motivatons for the foundation of your firm". We indicated "motivation1" for the first answer "to take advantages of business opportunities from past work experiences", with "motivation2" for "to take advantages of opportunities from the Univerisity period", with "motivation3" for "to take advantage of opportunities that are beyond past experience", and "motivation4" for "to take advantage of opportunities arising from personal needs not satisfied by the market".
- **Partners' influence**: under this label we identified five variables that explain in the entrepreneur We created five possible answers that can assume values from 1 to 5 and 0 if they did not use that particular ecosystem elements. Then we created five dummy variables (1 if the evaluation was between 1 and 5, and 0 otherwise), calling them veneto_influence1 (incubators), veneto_influence2 (chambers of commerce), veneto_influence3 (category associations), veneto_influence4 (science parks) and veneto_influence5 (personal relational network).
- **Breadth network**: this variable identifies the number of different partners used by the entrepreneurs in her business activity. For partners we mean those indicated in the previous label "Partner's influence" (incubators, chambers of commerce, category associations, science parks, personal network). The variable breadth_network can assume values from 0 to 5 and it is the sum of 5 dummy variables, each for every partner.
- **Incubators and science parks**: this is a dummy variable that indicates if the entrepreneur passed through an incubator and/or a science park. It returns 1 if the subject passed at least through one of the two indicated institutions.

[21] A complete version of the survey is available at the appendix B

- **Appreciation of academic knowledge**: the variable indicates the appreciation grade of the academic knowledge among entrepreneurs. It can assume values from 1 to 5, "not satisfied at all" to "extremely satisfied".
- **University stimuli**: we identified eight stimuli from the University. They refer to the answers of the question 33 of our questionnaire, where we asked to indicate with a vote from 1 to 5 "the importance of the followings elements related to the University that could have influenced your idea to found a firm". Possible answers were: stimulating professors (uni_influ1), teachings of the university's course (uni_influ2), class meetings with managers (uni_influ3), companies case studies and simulation games (uni_influ4), companies' plant visits (uni_influ5), workshops on entrepreneurship (uni_influ6), student associations (uni_influ7), events organized by the University of Padova such as Galileo festival, informal meetings with managers/firms etc. (uni_influ8).

Since we dealt with a high number of variables we decided to make a factor analysis in order to reduce the number of variables and then to find some others hidden. More precisely, we used a Principal Factor Method (PFM), but before to start with its computation we made some tests to understand if would have been possible to use it or not. The Bartlett's Test and the Kaiser-Meyer Olkin (KMO) measure of sampling adequacy, were used to examine the appropriateness of factor analysis. The Bartlett's test suggests rejecting the null hypothesis (Table 12). The Kaiser-Meyer-Olkin (KMO) measure shows a value of 0.799, which, being above the usual threshold of 0.5, confirms the validity of the factor analysis.

Table 12 Bartlett's Test and the Kaiser-Meyer Olkin (KMO)

Determinant of the correlation matrix	0.058
Kaiser-Meyer-Olkin Measure of sampling Adequacy	0.799

Bartlett test of sphericity	
Chi-square	600.912
Degrees of freedom	28
p-value	0.000
H0	variables are not intercorrelated

Source: Author's elaboration

Given the results of the above test, we computed the factor analysis and Table 13 shows the results.

Table 13 Results of the factor analysis (VARIMAX ROTATION)

Variable	Factor1 (U-E relations)	Factor2 (teachings)	Factor3 (gatherings)	Uniqueness
uni_influ1 (stimulating professors)		0.6046		0.5984
uni_influ2 (teachings)		0.6149		0.5964
uni_influ3 (class meeting with managers)	0.7215			0.4439
uni_influ4 (simulation games	0.7535			0.3535
uni_influ5 (companies visit)	0.6671			0.4902
uni_influ6 (workshops on entrepreneurship)	0.7657			0.3026
uni_influ7 (student associations)			0.5411	0.6113
uni_influ8 (events organized by UNIPD)			0.4893	0.569
blanks represent abs(loading)<.45				

Source: Author's elaboration

In the above table, variables Factor1, Factor2 and Factor3 respectively identify the relations between University of Padova and Enterprises, the quality of teachings (both professors and courses) but in the sense if they were interesting and stimulating, and gatherings (alluding to informal meetings among students).

- **Relations post lauream**: This variable identifies if there was any contact with the University of Padova after the graduation of respondents and the utility of these relations. More precisely, we created the above variables from the following alternatives: relations with professors, relations with supervisors of the thesis, relations with UNIPD for apprentice researches, for research projects, participation at workshops promoted by UNIPD. Each of the alternatives can assume value from 1 to 5.

Table 14, shows all independent variables used in regressions and their basic statistics.

Table 14 Basic statistics on independent variables

variable	mean	sd	min	max
gradmark	98.37037	8.503999	72	110
totcredecon	2.990741	10.10318	0	72
ex1	0.2037037	0.4036867	0	1
ex2	0.8101852	0.3930654	0	1
ex3	0.2777778	0.4489436	0	1
ex4	0.0787037	0.2699012	0	1
motivation1	3.027778	1.380653	1	5
motivation2	1.884259	1.104129	1	5
motivation3	3.217593	1.316749	1	5
motivation4	3.430556	1.395938	1	5
breadth_ne~k	3.078704	1.144577	0	5
veneto_inf~1	0.2361111	0.881221	0	5
veneto_inf~2	1.435185	1.076369	0	5
veneto_inf~3	1.615741	1.288783	0	5
veneto_in~e4	0.5740741	0.9567747	0	5
veneto_inf~5	3.430556	1.568525	0	5
incub	0.3935185	0.4896649	0	1
knowledge	3.448598	1.127827	1	5
f1	-1.07E-09	0.8809765	-1.246007	2.569641
f2	-2.41E-10	0.7109435	-1.84302	1.639716
f3	-1.38E-09	0.6482921	-1.436923	2.248286
post_laure~1	1.865741	1.199043	1	5
post_laure~2	1.87963	1.251734	1	5
post_laure~3	1.680556	1.088969	1	5
post_laure~4	1.449074	0.9534267	1	5
post_laure~5	1.75	1.0664	1	5

Source: Author's elaboration

3.11.3 Control variables

Such as control variables we took into consideration aspects related to the gender of the entrepreneur, to the location of the firm and how it was created, the market sector where the enterprise operates and some others. Below, in Table 15, there is a description for all of them.

Table 15 List of control variables

Label	Name	Type	Description
Number of employee	employee4	Control variable	Total number of employees of the company at 2015
Gender	male	Control variable	Dummy (0,1): Assumes value 1 if the entrepreneur is a male

Company geographic distribution: northwest of Italy	loc_no	Control variable	Dummy (0,1): Assumes value 1 if the company is located in the northwest of Italy
Company geographic distribution: northeast of Italy	loc_ne		Dummy (0,1): Assumes value 1 if the company is located in the northeast of Italy
Company geographic distribution: centre of Italy	loc_c		Dummy (0,1): Assumes value 1 if the company is located in the centre of Italy
Company geographic distribution: south and islands of Italy	loc_si		Dummy (0,1): Assumes value 1 if the company is located in the south of Italy
Company form	imp_ind_dummy	Control variable	Dummy (0,1): Assumes value 1 if the company is an "individual firm" type
Firm's foundation: *de alio*	foundation_dealio	Control variable	Dummy (0,1): Assumes value 1 if the firm is a result of extraordinary operation (acquisition, fusion, M&A)
Firm's foundation: *de novo*	foundation_denovo		Dummy (0,1): Assumes value 1 if the company was created by our subject
Firm's foundation: franchising	foundation_franchising		Dummy (0,1): Assumes value 1 if the company is a franchising
Company's birth	ycompbirth	Control variable	It reports the foundation year of the considered company
Agriculture, forestry and fishing	ateco_agri	Control variable	Dummy (0,1): Assumes value 1 if the company operates in the agriculture, forestry and fishing sector
Manufacturing	ateco_manu		Dummy (0,1): Assumes value 1 if the company operates in the manufacturing sector
Services and other	ateco_serv		Dummy (0,1): Assumes value 1 if the company operates in all service sectors

Source: Author's elaboration

- **Number of employee**: It represents the size of a company and it gives us the number of employee at 2015. The variable, employee4, helps to control for effects related to the size of the company.
- **Gender**: The dummy variable "Male" indicates the gender of the individual and assumes value 1 if the person is a male.
- **Company geographic distribution**: We grouped the Italian regions in geographic areas: North East, North West, Centre, South & Islands. Then we created dummies for each area calling them loc_no, loc_ne, loc_c, loc_si and they assume value 1 if the company is located respectively in North East, North West, Centre, South & Islands of Italy. The geographic distribution helps to control for eventual geographical effects such as the economic trend of an Italian area.
- **Company form**: the variable tells us the form of the company: individual or limited. It assumes value 1 if the firm is the individual form. The company form could help us to avoid effects related to the typology of the enterprise.

- **Foundation of the company**: variables explain how the entrepreneur created the firm: *de alio, de novo* (Furlan, Grandinetti 2012) or franchising. We created three dummies: the first assumes value 1 if the company is the result of business combinations, such as acquisitions, fusions and M&As; the second assumes value 1 if the company was created from the beginning by our entrepreneur; the third variable assumes vale 1 if the company is a franchising. The aim is to control if the nature of the firm could affect performances.
- **Company birth**: it indicates the foundation year of the firm. This to control the differences in performances between old and new enterprises.
- **Sectors**: Set of 3 dummy variables that indicates the sector in which the company operates according to the Ateco classification and the subsequent grouping. The variable "ateco_agri" assumes value 1 if the company operates in the agriculture, forestry and fishing sector. Variable "ateco_manu" assumes value 1 if the company operates in the manufacturing sector. Variable "ateco_serv" assumes value 1 if the company operates in service industries. The cluster for activity helps to control for specific sector trend and phenomena.

Table 16, shows all control variables used in regressions and their basic statistics.

Table 16 Basic statistics on control variables

variable	mean	sd	min	max
employee4	5.431925	7.563025	1	60
male	.6388889	.4814384	0	1
loc_no	.087963	.283899	0	1
loc_ne	.837963	.3693407	0	1
loc_c	.0324074	.1774909	0	1
loc_si	.0416667	.2002905	0	1
imp_ind_du~y	.6296296	.4840256	0	1
foundatio~io	.1481481	.356072	0	1
foundatio~vo	.8425926	.3650304	0	1
foundation~g	.0092593	.096001	0	1
ycompbirth	2006.255	10.48875	1967	2015
ateco_agri	.1064815	.3091694	0	1
ateco_manu	.087963	.283899	0	1
ateco_serv	.8046512	.3973943	0	1

Source: Author's elaboration

3.12 Model

To investigate if there was any variable that could affect the performance of the firms, we built different regressions. With this object in mind, we decided to split our analysis in two main groups:

1) Students: we collected under this label subjects that created their company while still in the universities benches and those involved in the business creation process within five year the graduation;
2) Not students: subjects that founded their firm after five years the graduation.

Then, the next step was the computation of three regression for each group of individuals, as above explained, Students and Non-Students. In the first regression, we analysed the personal factors of respondents, in the second their personal network and in the third we studied the university's role in the business creation process. For our study, from the total universe of 186 variables we dropped characteristics concerning not useful information for research purposes as badge number and personal contacts and, in addition, we created new variables to improve some existing information or to create new interaction.

The analysis specifically estimates the following regressions:

A. $Y_i = cons + \beta grademark_i + \beta totcredecon_i + \beta ex1_i + \beta ex2_i + \beta ex3_i + \beta ex4_i + \beta motivation1_i + \beta motivation2_i + \beta motivation3_i + \beta motivation4_i + \gamma W_i + \varepsilon_i$

B. $Y_i = cons + \beta breadth\_network_i + \beta veneto\_influence1_i + \beta veneto\_influence2_i + \beta veneto\_influence3_i + \beta veneto\_influence4_i + \beta veneto\_influence5_i + \beta incub_i + \gamma W_i + \varepsilon_i$

C. $Y_i = cons + \beta knowledge_i + \beta f1_i + \beta f2_i + \beta f3_i + \beta post\_lauream1_i + \beta post\_lauream2_i + \beta post\_lauream3_i + \beta post\_lauream4_i + \beta post\_lauream5_i + \beta grademark_i + \beta totcredecon_i + \gamma W_i + \varepsilon_i$

Model A is applied for both student entrepreneurs and for those who started a firm after five year their graduation at University of Padova. The regression aims to understand if personal factors could have an impact on business performances. In details, the dependant variable is ln_rev2. The independent variables applied in model A concern some personal characteristics of the entrepreneur: graduation mark, total number of credits in economic teachings, type of past work experiences and her motivation for the firm foundation. Variables concerning the firm's location, number of employees, gender of the entrepreneur, form of the company, creation process of the enterprise (de alio, de novo, franchising), year of the firm constitution and sector in which the company operates, were denoted with W_i and were used as control variables.

Model B is applied for both student entrepreneurs and for those who started a firm after five year their graduation at University of Padova. The regression aims to understand if the network could have an impact on business performances. In details, the dependant variable is ln_rev2, while independent variables applied in model B concern: the possibility to have used incubators, science parks, chambers of commerce, category associations, personal relational network (veneto_influence1-5); the sum of above used elements (breadth_network), and if the entrepreneur passed through an incubator and/or a science park (incub). Variables concerning the firm's location, number of employees, gender of the entrepreneur, form of the company, creation process of the enterprise (de alio, de novo, franchising), year of the firm constitution and sector in which the company operates, were denoted with W_i and were used as control variables.

Model C is applied for both student entrepreneurs and for those who started a firm after five year their graduation at University of Padova. The regression aims to understand if some factors regarding the university dimension could have an impact on business performances. In details, the dependant variable is ln_rev2., while independent variables applied in model C concern: the appreciation of the academic knowledge, the three factors that we funded with the factor analysis (U-E relations - Factor1, teachings - Factor2, gatherings - Factor3), if there was any contact between the University and the graduated once the academic path was over, the graduation mark of individuals and the total number of credits in economic teachings. Variables concerning the firm's location, number of employees, gender of the entrepreneur, form of the company, creation process of the enterprise (de alio, de novo, franchising), year of the firm constitution and sector in which the company operates, were denoted with W_i and were used as control variables.

All correlation matrixes are available in appendix E-G.

3.13 Results and discussion

In the following three sub-paragraphs we will go further into the computation and analysis of the three explained regressions to a deeper comprehension of the effect of the considered variables on firms' business performances.

3.13.1 Personal factors regression

Table 17 reports the application of the regression model A to both types of subjects of our sample. The depended variable is the logarithm of the revenues growth rate from the first to the

third year of the firm's foundation, ln_rev2, and is explained by a set of independent (gradmark, totcredecon, ex1, ex2, ex3, ex4, motivation1, motivation2, motivation3, motivation4) and control variables (employee4, male, loc_ne,loc_no, loc_si, loc_c, imp_ind_dummy, foundation_dealio, foundation_denovo, foundation_franchising, ycompbirth, ateco_agri, ateco_serv, ateco_manu). The following table shows two different regressions: "Model 1_fatt_pers_stud" refers to student entrepreneurs, while "Model 2_fatt_pers_NON" refers to non-students. Recalling the definition of student entrepreneurs, we can consider under this label that person involved in a business creation process while she is still student and/or immediately after her graduation (Colombo, Piva, Rossi-Lamastra, 2016).

Results tell us that the significant variables are different for the two considered groups of people: for student entrepreneurs, what seem to be relevant is "ex3" that indicates a past work experience in the consulting industry. This could be related to the fact, as we have already seen in chapter 3 paragraph 3.5, student entrepreneurs could have been excelling in some areas (due for example for previous activities in family firms), dispensing thus their knowhow through consulting activities.

On the contrary, for entrepreneurs were born after five year the graduation we can see a higher presence of significative variables: the grade mark seems to be relevant in the sense that a higher score degree could positively affect the company's performance. Another two significative parameters are under the section of past work experiences: ex2, and ex4. The first refers to experiences done in other companies and it seems reliable since these subjects had the opportunities to develop hard and soft skills during their past jobs otherwise difficult to have. So, these activities seem have a positive effect on the business performance of the company. Unfortunately, we have a lack of information because we do not know the Ateco code of the previous firms and we can not estimate if the new enterprises could be considered spinoffs or not. The second variable, ex4, refers to serial entrepreneurs and data shows a negative effect on the business performance. If it seems natural to imagine a positive effect of the considered variable on the firm performance, because being an entrepreneur is a learning by doing process, our data, due to the nature of our sample, tell us that who has already founded other companies could have a negative influence on firm's performances. The other two significative variables are under the motivation section: motivation1 and motivation2. The first, that resumes "To take advantages of business opportunities from past work experiences", seems confirm our earlier hypothesis of the utility of past work experiences in other firms: they are useful not only for the acquisition of knowledge, but they also help the future entrepreneur to glimpse possible business opportunities. The second factor, motivation2 ("To take advantages of opportunities

from the University period"), seems to play instead a negative effect on the firm's performances. This maybe because, since we are dealing with entrepreneurs that were born at least five years later their graduation day, university's project and opportunities do not properly fit with the work experience accumulated by the entrepreneur. Last element is totcredecon that refers to credit in economic teachings. Since its low score, -0.00829, we can neglect its negative effect.

Table 17 Personal factors affecting firm's performances

VARIABLES	Model 1_fatt_pers_stud	Model 2_fatt_pers_NON
gradmark	-0.00264	0.0211**
	(0.00926)	(0.00873)
totcredecon	-0.00279	-0.00829*
	(0.00522)	(0.00440)
ex1	-0.114	-0.184
	(0.124)	(0.164)
ex2	0.0436	0.335**
	(0.134)	(0.153)
ex3	0.268*	0.195
	(0.137)	(0.204)
ex4	0.179	-0.446*
	(0.217)	(0.261)
motivation1	0.0441	0.156***
	(0.0445)	(0.0585)
motivation2	-0.0368	-0.0821*
	(0.0485)	(0.0473)
motivation3	0.0379	-0.0405
	(0.0553)	(0.0468)
motivation4	-0.0220	0.0151
	(0.0366)	(0.0498)
employee4	0.0160*	0.0440***
	(0.00810)	(0.00832)
male	0.176*	0.100
	(0.102)	(0.166)
loc_no	0.667*	0.777**
	(0.366)	(0.358)
loc_ne	0.120	0.219
	(0.216)	(0.227)
loc_si	0.136	-0.234
	(0.340)	(0.275)
loc_c	-	-
imp_ind_dummy	0.237*	-0.208
	(0.124)	(0.144)
foundation_dealio	-	-
foundation_denovo	0.325	0.187
	(0.249)	(0.156)

foundation_franchising	-	0.992**
		(0.389)
ycompbirth	-0.000827	0.0336
	(0.00552)	(0.0305)
ateco_agri	-	0.249
		(0.228)
ateco_serv	-0.354	-0.205*
	(0.372)	(0.122)
ateco_manu	-0.420	-
	(0.383)	
Constant	2.182	-69.51
	(11.44)	(61.42)
Observations	77	87
R-squared	0.414	0.447

p-value<0.1; * p-value<0.05; ** p-value<0.01; *** p-value<0.001

Source: Author's elaboration

3.13.2 Network factors regression

Table 18 reports the application of the regression model B to both types of subjects of our sample. The depended variable is the logarithm of the revenues growth rate from the first to the third year of the firm's foundation, ln_rev2, and is explained by a set of independent (breadth_network, totcredecon, veneto_influence1, veneto_influence2, veneto_influence3, veneto_influence4, veneto_influence5, incub) and control variables (employee4, male, loc_ne,loc_no, loc_si, loc_c, imp_ind_dummy, foundation_dealio, foundation_denovo, foundation_franchising, ycompbirth, ateco_agri, ateco_serv, ateco_manu). The following table shows two different regressions: "Model 3_fatt_pers_stud" refers to student entrepreneurs, while "Model 4_fatt_pers_NON" refers to non-students.

Regarding the network that is possible to establish in the Veneto region, unfortunately, our data does not tell us so many information, but there are two variables that deserve our attention. The first one, related to student entrepreneurs, is the "veneto_influence3" factor and it refers to category associations such as Confindustria, Associazioni Artigiani and others similar, and data suggest a negative effect of these institutions on the business performance. Given the hundred callings done during the last months what emerged from our respondents is the fact that they do not feel the above institutions close to their needs, for example to approaching a bank for a loan request, or for the missing of events where it is possible to create a relational network among entrepreneurs from the surrounding territory. For these reasons, our respondents

negative judged the role of category associations and thus our regression provide a negative effect.

The second significative variable is "veneto_influence1" that refers to incubators and involve the "non-students" group. Even if they were used only by a small portion of our sample, approximately the 8%, data shows that incubators have a positive effect on business performances. The result is in line with results we already stated in ch.3 paragraph 3.7, where we saw a higher appreciation of incubators among entrepreneurs that were born within university's benches, followed by those that started their activity at least after five years their graduation and then by those within five years. Here, since we grouped entrepreneurs that were born at university and within five years, the negative result of this group could be related to the low appreciation of incubators among entrepreneurs within five years. Instead, the positive value obtained by the second group, Model 4, seems confirm the appreciation as reported in paragraph 3.7.

Table 18 Network factors affecting firm's performances

VARIABLES	Model 3_network_STUD	Model 4_network_NON
breadth_network	0.0501	-0.190
	(0.106)	(0.166)
veneto_influence1	-0.0252	0.0955*
	(0.0394)	(0.100)
veneto_influence2	-0.0575	0.0866
	(0.0580)	(0.0728)
veneto_influence3	-0.103*	-0.0908
	(0.0546)	(0.0645)
veneto_influence4	0.0629	-0.114
	(0.0663)	(0.0741)
veneto_influence5	-0.0239	0.00923
	(0.0476)	(0.0606)
incub	-0.0111	0.174
	(0.165)	(0.291)
employee4	0.0209**	0.0397***
	(0.0103)	(0.00954)
male	0.184*	-0.166
	(0.0962)	(0.141)
loc_no	0.844**	0.721**
	(0.351)	(0.356)
loc_ne	0.364	0.350
	(0.242)	(0.234)
loc_si	0.299	-0.261
	(0.364)	(0.358)
loc_c	-	-
imp_ind_dummy	0.228**	-0.317*

	(0.114)	(0.170)
foundation_dealio	-	-
foundation_denovo	0.538**	0.0453
	(0.242)	(0.156)
foundation_franchising	-	-0.138
		(0.261)
ycompbirth	-0.00136	0.0300
	(0.00488)	(0.0368)
ateco_agri	-	-
ateco_serv	-0.358	-0.399*
	(0.341)	(0.209)
ateco_manu	-0.346	-0.318
	(0.329)	(0.240)
Constant	2.914	-58.72
	(9.805)	(74.05)
Observations	77	87
R-squared	0.379	0.366

p-value<0.1; * p-value<0.05; ** p-value<0.01; *** p-value<0.001

Source: Author's elaboration

3.13.3 University's factors regression

Table 19 reports the application of the regression model C to both types of subjects of our sample. The depended variable is the logarithm of the revenues growth rate from the first to the third year of the firm's foundation, ln_rev2, and is explained by a set of independent (knowledge, f1, f2, f3, post_lauream1, post_lauream2, post_lauream3, post_lauream4, post_lauream5, gradmark, totcredecon) and control variables (employee4, male, loc_ne,loc_no, loc_si, loc_c, imp_ind_dummy, foundation_dealio, foundation_denovo, foundation_franchising, ycompbirth, ateco_agri, ateco_serv, ateco_manu). The following table shows two different regressions: "Model 5_fatt_pers_stud" refers to student entrepreneurs, while "Model 6_fatt_pers_NON" refers to non-students.

For student entrepreneurs appears significative the variable "f1", related to class meetings with managers, companies case studies, simulation games and companies' plant visits. The possibility to visit the production plants of established firms, to study their business model, to analyse their balance sheets, to find solution with competitive games and get in touch with managers and/or entrepreneurs, could positively affect the business performances of the future entrepreneurs. A second significative variable is post_laurem3 that indicates the possibility to

search apprentices through University's channels. This element positively affects business performances because University's channels help the entrepreneur to avoid cost for hiring new employee, because students have a mindset prepared to absorb and so they quickly learn during the stage period, allowing the firm to obtain good results. An opposite effect instead, it is played by the variable "post_lauream5" that indicate the utility of workshops promoted by the university once the academic path of the student was over, so we refer to the utility of post-lauream relations, in this case through workshops, with the University of Padova.

For the Model 6, that refers to the non-students group, "post_lauream5" has a negative effect as well as for the student group. The second significative variable in Model 6 is the positive effect of the graduation grade that we obtained as well in the first regression when we analysed the personal factors. Once again, it confirms that having a good graduation vote help entrepreneurs to help a good quality knowledge, useful to well perform.

Table 19 University's factors affecting firm's performances

VARIABLES	Model 5_univ STUD	Model 6_univ NON
knowledge	0.0438	-0.0221
	(0.0616)	(0.0572)
f1	0.108*	0.0213
	(0.0648)	(0.0761)
f2	-0.163	0.0684
	(0.115)	(0.105)
f3	-0.106	-0.0183
	(0.0917)	(0.109)
post_lauream1	0.0696	0.258
	(0.0630)	(0.249)
post_lauream2	-0.0937	-0.237
	(0.0573)	(0.175)
post_lauream3	0.145*	0.0186
	(0.0838)	(0.0870)
post_lauream4	0.0274	-0.0692
	(0.0659)	(0.0925)
post_lauream5	-0.0771*	-0.136*
	(0.0862)	(0.0783)
gradmark	-0.000302	0.0150*
	(0.00813)	(0.00917)
totcredecon	-0.000943	-0.00785
	(0.00538)	(0.00727)
employee4	0.0225**	0.0360***
	(0.0108)	(0.00923)
male	0.272**	0.0243
	(0.105)	(0.146)

loc_no	0.596	0.897**
	(0.407)	(0.348)
loc_ne	0.325	0.454*
	(0.239)	(0.251)
loc_si	0.364	0.248
	(0.356)	(0.371)
loc_c	-	-
imp_ind_dummy	0.286***	-0.286*
	(0.105)	(0.154)
foundation_dealio	-0.492**	-
	(0.227)	
foundation_denovo	-	0.216
		(0.169)
foundation_franchising	-	0.619
		(0.520)
ycompbirth	0.00253	0.0338
	(0.00466)	(0.0382)
ateco_agri	0.520*	-
	(0.295)	
ateco_serv	0.288**	-0.559*
	(0.137)	(0.331)
ateco_manu	-	-0.455
		(0.348)
Constant	-5.387	-68.18
	(9.582)	(77.20)
Observations	76	87
R-squared	0.461	0.445

p-value<0.1; * p-value<0.05; ** p-value<0.01; *** p-value<0.001

Source: Author's elaboration

CONCLUSIONS

With this report we provided an in-depth analysis of the student entrepreneurship phenomenon with particular regard to the University of Padova. We focused our attention on the population of students graduated from 2000 to 2010. We analysed their entrepreneurial activities and their personal characteristics providing some robust evidence that could be useful for implementing effective actions to support entrepreneurship among university students. The survey that we conducted between March and May gave us the possibility to have a deeper understanding of the developed enterprises, knowing for example the number of employees, their revenues, their constitution form. It also provided us information regarding the entrepreneurs' motivations to start a new firm, if they had any business partner, the relation among them and the reasons to involve them in their business activities. Moreover, thanks to the survey we knew the utility of the University of Padova in terms of teachings, professors, workshops, informal and formal activities.

In the first paragraphs of the third chapter we started with a stratification of the population, dividing the 4172 companies for their legal form (individual 61% or limited 39%), the period of their creation (while the entrepreneur was within the academic benches 11,00%, within five years the entrepreneur's graduation 30,40% and after five years the entrepreneur's graduation 52,30) and the academic course followed by the considered subject. What immediately emerged from the analysis of the 800 callings was the fact that the 64% of entrepreneurs were male against only 36% of female. About this topic, the action plan "Entrepreneurship 2020" (European Commission, 2013) highlighted issues related to the creation of a new business for women rather than men, primarily with regard to access to finance, training, networks and the reconciliation between the company and the family. In 2009, the Commission launched the European Network of Female Entrepreneurship Ambassadors that provides support and role models addressed to potential entrepreneurs. In addition, in 2012 the Commission presented a proposal to improve the gender balance on the boards of listed companies.

The second interesting element was the academic course attempted by individuals: data put engineering as one of the most "producer" of entrepreneurs. Colombo and Grilli (2005) confirmed the correlation between technical/scientific education and entrepreneurship, explaining the inclination of engineering students to found firms. Beside technical studies, there were graduated in non-technical courses (psychology, politics science) and their high presence could be given by the high difficulty of those subjects to enter into the labour market and find gratifying opportunities.

Then we investigated if entrepreneurs had past work experiences and their utility for the business activity. What surprised us were the answers provided by subjects that founded their enterprises while they were still students. They stated to have accumulated experience as consultants (61% while the average of the sample is 45%) and we explained this phenomenon thanks to their experience also in family firms. They excelled in some areas with the work in their family's firm and then started to commercialize their knowledge through consultant activities.

Regarding the companies' sphere we highlighted that firms in the individual form have a number of employees that is approximately the triple of those by limited companies. We had a similar path when we analysed the amount of revenues of both groups, but when we computed statistics on the innovation grade of firms, we ended up with an opposite result: limited companied reported a grade of innovation that is the double of those obtained by individual firms. Looking at their operating markets we saw that most of the enterprises operate in service industries (>80%), while only a minor part operates in the agriculture sector (≈10%) and the rest in the manufacturing industry. For what concerns the localization, the examined enterprises are distributed in almost every Italian region but they are mainly concentrated in Veneto (160 firms, ≈74%). This due to the fact we analysed students from University of Padova and most of them came from the same region and it was natural to found their activity in the region where they were born. The second region for number of enterprises is Lombardia (14), followed by Trentino Alto Adige (11). Then, when we investigated the origin of the initial funds used to start the business activity, we saw that entrepreneurs preferred to use their own capitals or resources from relatives and friends (≈85%). Only the 33% of our sample decided to get a mortgage from a bank or any other financial institutions. Due to this result, we thought that a reason to involve other possible business partner was to have the required initial funds to start the enterprise, but instead it was the fourth motive for importance. The first one was because the other partners were relatives of entrepreneurs. The second was to compensate lacks of technical knowledge while the third was for the personal relational network of partners. Partners that they had the opportunity to meet during previous work experiences. Once again, here we had the confirmation of the utility of past works for entrepreneurial path.

Then, we investigated the utility of the network provided by the surrounding territory. Precisely, we saw there was a high appreciation of incubators, especially among entrepreneurs that were born during the university period. What appeared interesting was the fact that the biggest part of respondents (>81%), reported to have used at least three of the five presented elements of the territory. This element let us appreciate a high communication among actors of the region.

University obtained a good appreciation for the quality of teachings and professors. What frustrate our respondents was the absence of any contact with University once their academic path was over. They presented to the interviewer their willingness to be involved in University's activities. Before the calling for the survey most of them did not know about the possibility to use University's channels for apprentices research or about the possibility to start a research project with the University.

In the last part of our work we computed an econometric analysis for a deeper understanding of the student entrepreneurship phenomenon. More precisely, in the three regressions we investigated which elements could have been influencing the business performance of the analysed firms. All three regressions we created confirmed data we obtained in the descriptive analysis.

The first one, that refers to the personal factors of the entrepreneur, settles that the consulting activity positively affect the business performances of student entrepreneurs. Remember that we collected under this label that person involved in a business creation process while she is still student and/or immediately after her graduation (Colombo, Piva, Rossi-Lamastra, 2016). For what concern the second group of people, who started her firm at least five year later the consecution of the academic title, ex2 and ex4 resulted to be significative. They assess that past work experiences in other firm positively affect the firm's results but being a serial entrepreneur negatively affect the performances. Variables motivation1 and motivation2 that are related to the reasons of the entrepreneur to found the company are both significative only for the second group. They have an opposite effect: motivation1, that means "to exploit business opportunities seen during past work experiences" seems have a positive effect on performances. On the contrary, motivation2 that refers to "exploit opportunities seen at the University" have a negative impact. This could be possible because we are dealing with entrepreneurs that were born at least five years later their graduation day, university's project and opportunities do not properly fit with the work experience accumulated by the subject. The last relevant personal variable for the second group is the graduation mark: it appears to have a positive effect in the sense that a higher score degree could positively affect the company's performance.

The second regression analysed the role of network's factors. For both groups of individuals they do not seem to play a significative role. Only veneto_influence3, that examines the influence and utility of category associations such as Confindustria and Associazioni Artigiani, negatively affects performances of the of student entrepreneurs' firms. For the second group instead, veneto_influence1 that is related to the utility of incubators, shows a positive effect.

This could be explainable by the fact that inside an incubator it is possible to find a stimulating environment for the definition, development and growth of a business project.

The third regression examined the effect of elements related to the University's sphere. Once again, as already seen in the first regression, the grade mark expressed its positive influence on business performances among entrepreneurs that were born after five years their graduation. A variable that has a similar effect on both groups is post_lauream5. It refers to the utility of workshops organized by the University of Padova, and our analysis shows that they have a negative impact on firm's performances. On the contrary, post_lauream3 that refers to the possibility to search apprentices through the University's channels, denoted a positive impact on performances. This because entrepreneurs avoid cost for hiring new employee, and possibly because students have a mindset prepared to quickly absorb the knowledge of the firm during the stage period, allowing the firm to obtain good results. The last significative variable is f1. It is the result of a factor analysis and it refers to class meetings with managers, simulation games and companies' plant visits. The possibility to visit the production plants of established firms, to study their business model and to get in touch with managers and/or entrepreneurs, could positively affect the business performances of the student entrepreneurs group.

With this work we had a quite complete overview of what helps students and graduated at University of Padova to start their own company: we saw the utility of the network, both personal and of the surrounding territory, the reasons to engage other partners and the relation between them. Moreover, we saw the utility of elements related to the University of Padova and also the complaints of graduated for the absence of the University in their entrepreneurial path.

From these considerations, emerge at least two possible suggestions for further development of the present work:

- The first aspect concerns the possibility to extend the present study to other Italian Universities for a deeper understanding of the student entrepreneurship phenomenon. It this way we could have a high-resolution photograph of the national panorama;
- Entrepreneurship is one of the main engines for the countries' development. It would be interesting and useful understand why only the 3% of the graduated between 2000 and 2010 at the University of Padova decided to found a firm and the 97% decided to work for other firms. If one of the aims of Universities and Government is the study of entrepreneurship and its promotions, they should investigate the reasons that block the others to start their own business.

BIBLIOGRAPHY

Abell P., Crounchley R. e Millis C. (2001), "Social Capital and Entrepreneurship in Great Britain" in Enterprise and innovation management studies, n 2/2 pag 119-144.

Afonso O., Monteiro S., Thompson M.J.R. (2010) A growth model for the Quadruple Helix innovation theory (NIPE Working Paper 12), Braga: Universidade do Minho.

Aldrich H.E. (1999). "*Organizations evolving*", SAGE Publications, Trowbridge (UK), pp 19-33.

Baron R.A., Markaman G.D. (2000), "Beyond social capital: how social skill can enhance entrepreneurs' success", in Academy of Management executive num 14 pag 106-115

Becker G.S. (1974), "A theory of social interactions" in Journal of Political Economy num 82 pag 1063-1093

Blanchflower, DG, & Oswald, AJ 1998, 'What Makes an Entrepreneur?', Journal of Labor Economics, vol. 16, no. 1, p. 26

Bollingtoft A. e Ulhoi J.P. (2005), "The networked business incubator: leveraging entrepreneurial agency?" Journal of Business Venturing Vol 20 pag 265-290.

Bonaccorsi A. e Granelli A. (2005), "L'intelligenza s'industria" Il Mulino AREL.

Brandolini, A., Bugamelli, M. (2009) "Report on trends in the Italian productive system", *Questioni di Economia e Finanzia (Occasional Papers)*, 45, Banca d'Italia, Economic Research and International Relations Area.

Bugamelli M., Cannari L., Lotti L. e Magri S. (2012). "*The innovation gap of Italy's production system: roots and possible solutions"*. Bank of Italy.

Chell E. and Allman K. (2003) "Mapping the motivations and intentions of technology orientated entrepreneurs", R&D Management 33, 2, 2003. Blackwell Publishing Ltd.

Cantillon, R. (1931). "Essay on the Nature of Commerce in General", Transaction Publ. MacMillan, London (UK), pp 5-31.

Carreea M.A. and Thurik A.R (2012). "The Impact of Entrepreneurship on Economic Growth", in *Handbook of entrepreneurship research*, Springer (US), pp 437-471.

Casson M. (1982). “The entrepreneur. An economic theory”, Barnes & Noble Books, Totowa, (NJ), pp 384-395.

Cassoni F., Moscara P. and Piccaluga A. (2005), “Le imprese spin off della ricerca in Italia: modelli di sviluppo e percorsi di crescita” in Piccola Impresa-Small Business n 276 Vol 1, 2005.

Chiesa V. e Piccaluga A. (2003), "La ricerca fa impresa” in Bollettino dell’Innovazione tecnologica, PTU-Sitech, disponibile online

Coleman J. S. (1988), "Social Capital in the creation of human capital" in American Journal of sociology n.94 pag 95-120 del supplemento.

Coleman J.S. (1990), "Foundation of Social Theory", Bellknap press, Cambridge, MA.

Colombo, M.G., Grilli, L. (2005) “Founders’ human capital and the growth of new technology-based firms: a competence based view”, *Research Policy*, 34: 795-816.

Colombo M.G., Piva E., Rossi-Lamastra C. (2016). “Student entrepreneurs from technology-based universities: the impact of course curriculum on entrepreneurial entry”. Working paper

Davidsson, P. (2005a). The entrepreneurial process: Lessons for entrepreneurship education. International Journal of Entrepreneurship Education, 3(xx-xx)

DeCarolis, D.M., Deeds D.L. (1999) “The impact of stocks and flows of organizational knowledge on firm performance: An empirical investigation of the biotechnology industry”, *Strategic Management Journal*, 20(10): 953-968.

Declich A. (2006), “Una visione d’insieme degli spin-off universitari: tipi forme, ostacoli e potenzialità” in Conoscenza ed innovazione- rivista elettronica del CERFE disponibile on line http://www.conoscenzaedinnovazione.org

Duval-Couetil N, Reed-Rhoads T., Haghighi S., (2012). “Engineering Students and Entrepreneurship Education: Involvement, Attitudes and Outcomes”, International Journal of Engineering Education Vol. 28, No. 2, pp. 425–435, 2012.

Duxbury, L., & Higgins, C. 2001. “Work-life balance in the new millennium: Where are we? Where do we need to go?” Canadian Policy Research Networks discussion paper No. W/12, Ottawa, ON.

Etzkowitz, H. (2008) The Triple Helix: University-Industry-Government in action. Routledge, London

Eurochambres (2013). “Entrepreneurship Action Plan: motivating potential new entrepreneurs the no. 1 priority”. Press Release, available at http://www.eurochambres.eu/objects/1/Files/PR-Entrepreneurship_Action_Plan.pdf.

Federici, D., and Ferrante, F. (2014). “Ristrutturazione industriale e capital umano imprenditoriale”. *Economia dei Servizi*, n.3, 233-258.

Ferrante F. (2005). “Revealing Entrepreneurial Talent”. *Small Business Economics*, vol. 2, September, p. 159-174.

Frank A. (2005), "Developing entrepreneurship skills in the context of higher education”, Paper discussed at the Built environment education symposium 5-6 sept. 2005.

Furlan A., Grandinetti R. (2012) “Alle radici dello sviluppo locale: la creazione di nuove imprese”, ECONOMIA E SOCIETÀ REGIONALE-115 (1), FrancoAngeli.

Garavan T.N. e Ò Cinneide B. (1994), "Entrepreneurship education and training programmes: a review and evaluation”, in International Journal of European industrial vol 18 num 8 pag 3-12

Gibson D.V. e Smilor R.W. (1991), “The role of the research university in creating and sustaining the U.S. technopolis” in Brett A.M., Gibson D.V., Smilor R.W. (eds) “University Spin-off companies”, Rowman & Littlefield Publisher, Inc

Gorman, G., Hanlon, D., King, W., 1997. “Some research perspectives on entrepreneurship education and education for small business management: a ten-year literature review”. International Small Business Journal 15 (3), 56–77.

Greenhaus, J. H., & Beutell, N. J. (1985). “Sources of conflict between work and family roles”. Academy of Management Review, 10: 76–88.

Gruszecki T., (1994) “Przedsiebiorca w teorii ekonomii”, Cedor, Warszawa.

Gruszecki T., (2002) “Gruszecki T., (1994, p.32) “Przedsiebiorca w teorii ekonomii”, Cedor, Warszawa

Hart M., Levie J., Shasul M. K. (2015). “*Closing the Generational Start-up Gap”*. London: RBS Group.

Hynes B. (1996), "Entrepreneurship education and training – introducing entrepreneurship into non-business disciplines" in Journal of European Industrial training vol 20/8 pag 10-17

Hoang, H., Antoncic, B., 2003. "Network-based research in entrepreneurship: a critical review". Journal of Business Venturing 18 (2), 165–187

Isenberg, D (2011). "The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship", Babson Entrepreneurship Ecosystem Project, Babson College, Babson Park: MA

Ivancevich J.M. (1991), "A traditional faculty member's perspective on entrepreneurship",Vol 6 pag 1-7

Jacobs J. (1961), "The death and life of breath American cities", Random house, New York.

Jennings J. E., McDougald M S. "Work-Family Interface experience and coping strategies: implications for entrepreneurship research and practice" *Academy of Management Review* 2007, Vol. 32, No. 3, 747–760.

Johannisson B. (2000), "Modernizing the industrial district-rejuvenation or managerial colonization" in Taylor M., Vatne E. (eds.) The networked firm in a global world: small firms in new environment, Ashgate.

Kirzner I.M. (1973). "*Competition and Entrepreneurship*", University of Chicago Press, Chicago (IL), pp 30-88.

Knight F.H. (1921). "*Risk, Uncertainty and Profit*", University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship, Chicago (IL), pp 3-10.

Kogut, B., Zander, U. (1992) "Knowledge of the firm, combinative capabilities, and the replication of technology", *Organization Science*, 3(3): 383-397.

Kopycińska D., Bernat T. and Korpysa J. (2009). "Researching students' entrepreneurship skills in post-socialist countries: a multi-country survey *(Part 1)"*, T*ransformations in Business & Economics,* Vol. 8, No 2 (17).

Koh F.C.C., Koh W.T.H. e Tschang T F. (2005), "An analytical framework for science park and technology districts with an application to Singapore", *Journal of Business Venturing* Vol 20 pag 217-239

Kourilsky, M.L. & Walstad, W.B. (1998). "Entrepreneurship and Female Youth: Knowledge, Attitudes, Gender Differences, and Educational Practices". Journal of Business Venturing 13 (1), 77–88.

Kraśnicka T., (2002). “Koncepcja rozwoju przedsiebiorczosci ekonomicznej i pozaekonomicznej, AE Katowice, Katowice

Landström H., Harirchic G., Åströmd F. “Entrepreneurship: Exploring the knowledge base” Research Policy 41 (2012) 1154– 1181

Leitch C.M. e Harrison R.T. (1999), "A process model for entrepreneurship education and development”, in International Journal of Entrepreneurial Behaviour & Research vol 5 num 3 pag 83-109

Liao J. e Weslch H. (2005), "Role of social capital in venture creation: key dimensions and research implications" in Journal of small business management num 43/4 pag 345-362.

Markman G.D., Phan P., Blakin D. and Gianodis P. T. (2005), "Entrepreneurship and university based technology transfer", *Journal of Business Venturing* Vol 20 pag 241-263

Mason C., Brown R., (2014). “Entrepreneurial ecosystems and growth oriented entrepreneurship”, Background paper prepared for the workshop organised by the OECD LEED Programme and the Dutch Ministry of Economic Affair. The Hauge, Netherland

Minniti M. (2005), "Entrepreneurship and Network externalities", in Journal of Economic behaviour and organizations, num 57/1 pag 1-27.

Nahapiet J., Ghoshal S.(1998), "Social Capital, intellectual capital and the organizational advantage", in academy of Management Review n. 23 pag 242-266.

Nelson R. and S. Winter (1982). “An Evolutionary Theory of Economic Change”, University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship, available: https://ssrn.com/abstract=1496211.

OECD (2015). “*Entrepreneurship at Glance 2015”*. OECD Publishing, Paris

Penrose E.T. (2002). “*The theory of the growth of the firm*”, Oxford University Press, Oxford (UK), pp 279-309.

Petretto L. (2008), “Imprenditore ed Università nello start-up di impresa. Ruoli e relazioni critiche”, Firenze University Press.

Phan P.H., Siegel D.S. e Wright M. (2005), "Science Park and incubators: observations, synthesis and future research" Journal of Business Venturing Vol 20 pag 165-182.

Ramaciotti L., Daniele C., (2016). “Ricerca, valorizzazione dei risultati ed impatto”. XIII rapporto NETVAL sulla valorizzazione della ricerca nelle università e negli enti pubblici di ricerca in Italia.

Ranga, M. and Etzkowitz H. (2013). “Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society”, *Industry and Higher Education*, 27(4) pp 237-262.

Ruef, M. (2010) “The entrepreneurial group: social identities, relations and collective action*”*, Princeton University Press, Princeton, NJ.

Rullani, E. (2004) *La fabbrica dell’immateriale. Produrre valore con la conoscenza*, Carocci, Roma.

Say,J.B. (1803) Traité d’Eonomie Politique ou Simple Exposition de la Maniére Dont se Forment, se Distribuent et se Consomment les Richesses, 1st edn, Paris: Crapelet.

Schivardi F. e Torrini R. (2011). “*Structural change and human capital in Italy’s productive economy”*, Questioni di Economia e Finanza (Occasional Papers) 108, Bank of Italy.

Schumpeter J.A. (1934). “*The Theory of Economic Development*”, Harvard University Press, Cambridge (MA), pp 61-116.

Schumpeter J.A. (1991). “Comments on a plan for study of the entrepreneurship, ed. R. Swedberg” Economics and sociology of capitalism, Princeton University Press, New Jersey.

Shane, S., Venkataraman, S. (2000) “The promise of entrepreneurship as a field of research”, *The Academy of Management Review,* 25 (1): 217–226.

Simoni C. e Labory S. (2006), “The Influence of Social Capital on Entrepreneurial Behavior” in Minniti M., Zacharakis A., Spinelli S. Jr., Rice M.P. e Habbershon T.G. (eds.) The Engine of Growth, vol. I. Praeger Publishers, Greenwood Publishing Group, Inc., pp. 101-118

Smith A. (1776). “*An Inquiry into the Nature and Causes of the Wealth of Nations*”, Methuen and Co. London (UK), pp 147-195

Stefensen M., Rogers E e Speakman K. (2000), “Spin-offs from research centers at research university” in Journal of Business of Economics del 2000 vol 15 pag 93 e ss.

Stinchcombe A.L. (1965). “Organizations and social structure”, in *Advances in strategic management*, Toronto (CAD), 17, pp 229-259.

Tsai W., Ghoshal S. (1998), "Social Capital and value creation: the role of intra-firm networks" in Academy of Management Journal n. 41 pag 464-476.

Vallini C. e Simoni C. (2006), “Higher Education and entrepreneurial vocation and capabilities: a University of Florence case”, In press.

Van de Velde E., Clarysse B., Wright M., Lockett A. (2005), "Spinning out new ventures: a typology of incubation strategies for European research institutions", Journal of Business Venturing Vol 20 pag 183-216.

van Praag C.M. (1999). “Some classic views on entrepreneurship”, De Economist, n 3.

Wei J. (2005). “Engineering education for a post-industrial world”, Technology in Society, 27, 2005, pp. 123–132.

Wennekers A.R.M. and Thurik A.R. (1999). “Linking entrepreneurship and economic growth”, *Small business economics*, 13.1, pp 27-56.

Unioncamere Veneto (2016). “La situazione economica del Veneto”, Rapporto annuale 2016, available at http://rapportoannuale.unioncamereveneto.it/.

University of Padova (2015). “Nucleo di Valutazione di Ateneo” rapporto annuale sull’ateneo 2014-2015, available at http://www.unipd.it/nucleo/rapporti-annuali.

Zukin S., DiMaggio P. (1990) "Structures of Capital: The social organization of the economy", New York, Cambridge University press

WEB RESOURCES

- http://startupguide.com/world/the-history-of-entrepreneurship/
- https://news.gcase.org/2011/02/04/what-is-the-history-of-entrepreneurship/
- http://www.universitaly.it/
- http://www.anvur.org/rapporto/files/stampa/grandi%20universita.pdf
- http://www.spinoffricerca.it/

APPENDIX

APPENDIX A : Course category allocation

Course	Course Category
BIOTECNOLOGIE AGRARIE	AGRARIA
GESTIONE TECNICA E AMMINISTRATIVA IN AGRICOLTURA	AGRARIA
INDUSTRIE DEL LEGNO	AGRARIA
PRODUZIONI VEGETALI	AGRARIA
SCIENZE AGRARIE	AGRARIA
SCIENZE E TECNOLOGIE VITICOLE ED ENOLOGICHE	AGRARIA
SCIENZE FORESTALI	AGRARIA
SCIENZE FORESTALI E AMBIENTALI	AGRARIA
TECNOLOGIE ALIMENTARI	AGRARIA
TECNOLOGIE E INDUSTRIE DEL LEGNO	AGRARIA
TECNOLOGIE FORESTALI E AMBIENTALI	AGRARIA
TUTELA E MANUTENZIONE DEL TERRITORIO	AGRARIA
TUTELA E RIASSETTO DEL TERRITORIO	AGRARIA
PAESAGGIO, PARCHI E GIARDINI	AGRARIA
SCIENZE E TECNOLOGIE AGRARIE	AGRARIA
SCIENZE E TECNOLOGIE ALIMENTARI	AGRARIA
TECNICHE FORESTALI E TECNOLOGIE DEL LEGNO	AGRARIA
TECNICHE VIVAISTICHE	AGRARIA
ECONOMIA AZIENDALE	ECONOMIA
ECONOMIA E COMMERCIO	ECONOMIA
ECONOMIA E DIREZIONE AZIENDALE	ECONOMIA
CHIMICA E TECNOLOGIA FARMACEUTICHE	FARMACIA
FARMACIA	FARMACIA
INFORMAZIONE SCIENTIFICA SUL FARMACO	FARMACIA
GIURISPRUDENZA	GIURISPRUDENZA
SCIENZE GIURIDICHE	GIURISPRUDENZA
SERVIZI GIURIDICI	GIURISPRUDENZA
CONSULENTE DEL LAVORO	GIURISPRUDENZA
OPERATORE GIURIDICO D'IMPRESA	GIURISPRUDENZA
SCIENZE DELLE RELIGIONI	LETTERE E FILOSOFIA
VITICOLTURA, ENOLOGIA E MERCATI VITIVINICOLI	AGRARIA
BIOLOGIA MARINA	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOTECNOLOGIE SANITARIE	MEDICINA E CHIRURGIA
COMUNICAZIONE	PSICOLOGIA
COOPERAZIONE ALLO SVILUPPO	AGRARIA
LINGUE STRANIERE PER LA COMUNICAZIONE INTERNAZIONALE	LETTERE E FILOSOFIA
SCIENZE DELLA COMUNICAZIONE	PSICOLOGIA
SCIENZE E CULTURA DELLA GASTRONOMIA E DELLA RISTORAZIONE	AGRARIA
SCIENZE E TECNICHE DELL'ATTIVITA' MOTORIA PREVENTIVA E ADATTATA	SCIENZE DELLA FORMAZIONE

ACQUACOLTURA	AGRARIA
DISCIPLINE DELLA MEDIAZIONE LINGUISTICA E CULTURALE	LETTERE E FILOSOFIA
TECNICHE ERBORISTICHE	FARMACIA
INGEGNERIA AEROSPAZIALE	INGEGNERIA
INGEGNERIA BIOMEDICA	INGEGNERIA
INGEGNERIA CHIMICA	INGEGNERIA
INGEGNERIA CIVILE	INGEGNERIA
INGEGNERIA CIVILE - SEZIONE EDILE	INGEGNERIA
INGEGNERIA CIVILE - SEZIONE IDRAULICA	INGEGNERIA
INGEGNERIA DEI MATERIALI	INGEGNERIA
INGEGNERIA DELL'AUTOMAZIONE	INGEGNERIA
INGEGNERIA DELLE TELECOMUNICAZIONI	INGEGNERIA
INGEGNERIA DELL'INFORMAZIONE	INGEGNERIA
INGEGNERIA EDILE	INGEGNERIA
INGEGNERIA ELETTRICA	INGEGNERIA
INGEGNERIA ELETTRONICA	INGEGNERIA
INGEGNERIA ELETTROTECNICA	INGEGNERIA
INGEGNERIA GESTIONALE	INGEGNERIA
INGEGNERIA INFORMATICA	INGEGNERIA
INGEGNERIA MECCANICA	INGEGNERIA
INGEGNERIA MECCATRONICA	INGEGNERIA
INGEGNERIA PER L'AMBIENTE E IL TERRITORIO	INGEGNERIA
INGEGNERIA CIVILE - SEZIONE TRASPORTI	INGEGNERIA
INGEGNERIA ENERGETICA	INGEGNERIA
INGEGNERIA INFORMATICA E AUTOMATICA	INGEGNERIA
ARCHEOLOGIA	LETTERE E FILOSOFIA
DISCIPLINE DELL'ARTE, DELLA MUSICA E DELLO SPETTACOLO	LETTERE E FILOSOFIA
GEOGRAFIA DEI PROCESSI TERRITORIALI	LETTERE E FILOSOFIA
LETTERE	LETTERE E FILOSOFIA
LINGUE E LETTERATURE STRANIERE	LETTERE E FILOSOFIA
LINGUE E LETTERATURE STRANIERE MODERNE	LETTERE E FILOSOFIA
PROGETTAZIONE E GESTIONE DEL TURISMO CULTURALE	LETTERE E FILOSOFIA
STORIA	LETTERE E FILOSOFIA
STORIA E TUTELA DEI BENI CULTURALI	LETTERE E FILOSOFIA
STORIA MODERNA E CONTEMPORANEA	LETTERE E FILOSOFIA
CULTURA E TECNOLOGIA DELLA MODA	LETTERE E FILOSOFIA
FILOSOFIA	LETTERE E FILOSOFIA
LINGUE, LETTERATURE E CULTURE MODERNE	LETTERE E FILOSOFIA
ASSISTENZA SANITARIA (ABILITANTE ALLA PROFESSIONE SANITARIA DI ASSISTENTE SANITARIO)	MEDICINA E CHIRURGIA
DIETISTICA (ABILITANTE ALLA PROFESSIONE SANITARIA DI DIETISTA)	MEDICINA E CHIRURGIA
FISIOTERAPIA (ABILITANTE ALLA PROFESSIONE SANITARIA DI FISIOTERAPISTA)	MEDICINA E CHIRURGIA
FISIOTERAPISTA	MEDICINA E CHIRURGIA
INFERMIERE	MEDICINA E CHIRURGIA
INFERMIERISTICA (ABILITANTE ALLA PROFESSIONE SANITARIA DI INFERMIERE)	MEDICINA E CHIRURGIA

MEDICINA E CHIRURGIA	MEDICINA E CHIRURGIA
ODONTOIATRIA E PROTESI DENTARIA	MEDICINA E CHIRURGIA
OSTETRICIA (ABILITANTE ALLA PROFESSIONE SANITARIA DI OSTETRICA/O)	MEDICINA E CHIRURGIA
TECNICHE AUDIOMETRICHE (ABILITANTE ALLA PROFESSIONE SANITARIA DI AUDIOMETRISTA)	MEDICINA E CHIRURGIA
TECNICHE DI LABORATORIO BIOMEDICO (ABILITANTE ALLA PROFESSIONE SANITARIA DI TECNICO DI LABORATORIO BIOMEDICO)	MEDICINA E CHIRURGIA
TECNICHE DI RADIOLOGIA MEDICA, PER IMMAGINI E RADIOTERAPIA (ABILITANTE ALLA PROFESSIONE SANITARIA DI TECNICO DI RADIOLOGIA MEDICA)	MEDICINA E CHIRURGIA
TECNICO SANITARIO DI LABORATORIO BIOMEDICO	MEDICINA E CHIRURGIA
TERAPIA DELLA NEURO E PSICOMOTRICITA' DELL'ETA' EVOLUTIVA (ABILITANTE ALLA PROFESSIONE SANITARIA DI TERAPISTA DELLA NEURO E PSICOMOTRICITA' DELL'ETA' EVOLUTIVA)	MEDICINA E CHIRURGIA
IGIENE DENTALE (ABILITANTE ALLA PROFESSIONE SANITARIA DI IGIENISTA DENTALE)	MEDICINA E CHIRURGIA
LOGOPEDIA (ABILITANTE ALLA PROFESSIONE SANITARIA DI LOGOPEDISTA)	MEDICINA E CHIRURGIA
ORTOTTICA ED ASSISTENZA OFTALMOLOGICA (ABILITANTE ALLA PROFESSIONE SANITARIA DI ORTOTTISTA ED ASSISTENTE DI OFTALMOLOGIA)	MEDICINA E CHIRURGIA
SCIENZE DELLE PROFESSIONI SANITARIE TECNICHE DIAGNOSTICHE	MEDICINA E CHIRURGIA
SCIENZE INFERMIERISTICHE ED OSTETRICHE	MEDICINA E CHIRURGIA
TECNICHE AUDIOPROTESICHE (ABILITANTE ALLA PROFESSIONE SANITARIA DI AUDIOPROTESISTA)	MEDICINA E CHIRURGIA
TECNICHE DELLA PREVENZIONE NELL'AMBIENTE E NEI LUOGHI DI LAVORO (ABILITANTE ALLA PROFESSIONE SANITARIA DI TECNICO DELLA PREVENZIONE NELL'AMBIENTE E NEI LUOGHI DI LAVORO)	MEDICINA E CHIRURGIA
TECNICO AUDIOPROTESISTA	MEDICINA E CHIRURGIA
TERAPIA OCCUPAZIONALE (ABILITANTE ALLA PROFESSIONE SANITARIA IN TERAPISTA OCCUPAZIONALE)	MEDICINA E CHIRURGIA
MEDICINA VETERINARIA	MEDICINA VETERINARIA
SICUREZZA IGIENICO-SANITARIA DEGLI ALIMENTI	MEDICINA VETERINARIA
PSICOLOGIA	PSICOLOGIA
PSICOLOGIA CLINICA	PSICOLOGIA
PSICOLOGIA CLINICO-DINAMICA	PSICOLOGIA
PSICOLOGIA DELLO SVILUPPO E DELL'INTERVENTO NELLA SCUOLA	PSICOLOGIA
SCIENZE PSICOLOGICHE COGNITIVE E PSICOBIOLOGICHE	PSICOLOGIA
SCIENZE PSICOLOGICHE DELLA PERSONALITA' E DELLE RELAZIONI INTERPERSONALI	PSICOLOGIA
SCIENZE PSICOLOGICHE SOCIALI E DEL LAVORO	PSICOLOGIA
DISCIPLINE DELLA RICERCA PSICOLOGICO - SOCIALE	PSICOLOGIA

PSICOLOGIA SOCIALE, DEL LAVORO E DELLA COMUNICAZIONE	PSICOLOGIA
PSICOLOGIA SPERIMENTALE E NEUROSCIENZE COGNITIVO-COMPORTAMENTALI	PSICOLOGIA
SCIENZE PSICOLOGICHE DELLO SVILUPPO E DELL'EDUCAZIONE	PSICOLOGIA
ASTRONOMIA	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOLOGIA	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOLOGIA EVOLUZIONISTICA	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOLOGIA MOLECOLARE	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOTECNOLOGIE	SCIENZE MATEMATICHE FISICHE E NATURALI
BIOTECNOLOGIE AGRO-INDUSTRIALI	SCIENZE MATEMATICHE FISICHE E NATURALI
CHIMICA	SCIENZE MATEMATICHE FISICHE E NATURALI
CHIMICA INDUSTRIALE	SCIENZE MATEMATICHE FISICHE E NATURALI
INFORMATICA	SCIENZE MATEMATICHE FISICHE E NATURALI
MATEMATICA	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZA DEI MATERIALI	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZE BIOLOGICHE	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZE E TECNOLOGIE PER I BENI CULTURALI	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZE E TECNOLOGIE PER LA NATURA	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZE GEOLOGICHE	SCIENZE MATEMATICHE FISICHE E NATURALI
SCIENZE NATURALI	SCIENZE MATEMATICHE FISICHE E NATURALI
FISICA	SCIENZE MATEMATICHE FISICHE E NATURALI
GEOLOGIA E GEOLOGIA TECNICA	SCIENZE MATEMATICHE FISICHE E NATURALI
OTTICA E OPTOMETRIA	SCIENZE MATEMATICHE FISICHE E NATURALI
EDUCATORE SOCIALE, CULTURALE E TERRITORIALE	SCIENZE DELLA FORMAZIONE
FORMATORE NELLE ORGANIZZAZIONI	SCIENZE DELLA FORMAZIONE
FORMATORE NELLE ORGANIZZAZIONI SOCIALI COMPLESSE	SCIENZE DELLA FORMAZIONE
MATERIE LETTERARIE	SCIENZE DELLA FORMAZIONE
PEDAGOGIA	SCIENZE DELLA FORMAZIONE
SCIENZE DELLA FORMAZIONE PRIMARIA	SCIENZE DELLA FORMAZIONE
SCIENZE DELL'EDUCAZIONE	SCIENZE DELLA FORMAZIONE
SCIENZE PER LA FORMAZIONE DELL'INFANZIA E DELLA PREADOLESCENZA	SCIENZE DELLA FORMAZIONE
SERVIZIO SOCIALE	SCIENZE DELLA FORMAZIONE
EDUCATORE PROFESSIONALE NELLE STRUTTURE SOCIALI, SANITARIE, CULTURALI E AMBIENTALI	SCIENZE DELLA FORMAZIONE
SCIENZE DELL'EDUCAZIONE E DELLA FORMAZIONE	SCIENZE DELLA FORMAZIONE
DIRITTO DELL'ECONOMIA	SCIENZE POLITICHE
ECONOMIA INTERNAZIONALE	SCIENZE POLITICHE
ECONOMIA TERRITORIALE E RETI D'IMPRESE	SCIENZE POLITICHE
GOVERNO DELLE AMMINISTRAZIONI	SCIENZE POLITICHE
ISTITUZIONI E POLITICHE DEI DIRITTI UMANI E DELLA PACE	SCIENZE POLITICHE
OPERATORE DELLA PUBBLICA AMMINISTRAZIONE	SCIENZE POLITICHE
POLITICA INTERNAZIONALE E DIPLOMAZIA	SCIENZE POLITICHE
SCIENZE POLITICHE	SCIENZE POLITICHE

SCIENZE POLITICHE E RELAZIONI INTERNAZIONALI	SCIENZE POLITICHE
SCIENZE SOCIOLOGICHE	SCIENZE POLITICHE
DIRITTO, ISTITUZIONI E POLITICHE DELL'INTEGRAZIONE EUROPEA	SCIENZE POLITICHE
POLITICA E INTEGRAZIONE EUROPEA	SCIENZE POLITICHE
POLITICHE DELL'UNIONE EUROPEA	SCIENZE POLITICHE
SCIENZE STATISTICHE E DEMOGRAFICHE	SCIENZE STATISTICHE
SCIENZE STATISTICHE, DEMOGRAFICHE E SOCIALI	SCIENZE STATISTICHE
STATISTICA (CORSO BIENNALE)	SCIENZE STATISTICHE
STATISTICA E GESTIONE DELLE IMPRESE	SCIENZE STATISTICHE
STATISTICA E INFORMATICA	SCIENZE STATISTICHE
STATISTICA E INFORMATICA PER LA GESTIONE DELLE IMPRESE	SCIENZE STATISTICHE
STATISTICA, ECONOMIA E FINANZA	SCIENZE STATISTICHE
STATISTICA, POPOLAZIONE E SOCIETA'	SCIENZE STATISTICHE
SCIENZE STATISTICHE ED ECONOMICHE	SCIENZE STATISTICHE
STATISTICA E INFORMATICA PER LE AMMINISTRAZIONI PUBBLICHE	SCIENZE STATISTICHE
STATISTICA E TECNOLOGIE INFORMATICHE	SCIENZE STATISTICHE

APPENDIX B: Questions of the survey

Salve,

sono Salvatore Montana e sono uno studente della magistrale in Economics and Finance dell'Università di Padova. La contatto perchè sto portando avanti un progetto di tesi in cui cercherò di spiegare il motivo per cui in Veneto, più che nelle altre regioni d'Italia, si creano imprese. Nella fattispecie, andrò ad analizzare la porzione di laureati del nostro ateneo che hanno creato delle aziende. Cercherò di comprendere e spiegare se ci sono dei fattori ambientali, e/o delle influenze della nostra università, che inducono gli studenti ad avviare un'attività imprenditoriale.

Ci vorranno solo pochissimi minuti ed il suo contributo è veramente prezioso. Per onor di cronaca: non è stato scelto in maniera casuale tra millemila persone, ma selezionato appositamente perchè rientra alla perfezione (e siete in pochi) nei criteri della mia ricerca.

Grazie in anticipo per la sua disponibilità, non le rubo altro tempo!

* 1. Nome

* 2. Cognome

3. Codice fiscale

4. Qual è il nome dell'azienda?

* 5. Fa parte del team che ha fondato la società?

- ◯ Si
- ◯ No

* 6. Può brevemente descrivere qual è l'attività prevalente dell'azienda che ha fondato?

* 7. Ha accumulato delle esperienze professionali prima della creazione dell'impresa?

- ◯ Si
- ◯ No

8. Che tipo di esperienza professionale ha accumulato? Sono possibili più risposte.

- ☐ Lavoro nell'impresa di famiglia operante nello stesso settore della sua azienda
- ☐ Lavoro nell'impresa di famiglia operante in un settore diverso rispetto alla sua azienda
- ☐ Lavoro in un'altra impresa operante nello stesso settore della sua azienda
- ☐ Lavoro in un'altra impresa operante in un settore diverso rispetto alla sua azienda
- ☐ Attività di consulenza svolta in proprio
- ☐ Attività di consulenza svolta per un'altra società
- ☐ Fondazione di un'altra società operante nello stesso settore della sua azienda
- ☐ Fondazione di un'altra società operante in un settore diverso rispetto alla sua azienda

9. Indichi quanto sono stati importanti i seguenti elementi maturati nel corso delle pregresse esperienze

	Per nulla importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante	Non applicabile
Conoscenza del mercato di riferimento (players, dimensione, barriere...)	○	○	○	○	○	○
Acquisizione di competenze tecniche	○	○	○	○	○	○
Relazioni personali con i colleghi	○	○	○	○	○	○
Relazioni con clienti e fornitori	○	○	○	○	○	○
Altro (specificare sotto e riportare la sua importanza)	○	○	○	○	○	○

.

* 10. La sua azienda, al momento della costituzione, è stata:

- ○ Il risultato di una operazione straordinaria (scissione, LBO, conferimento) di una impresa già esistente, DE ALIO
- ○ Creata ex-novo, DE NOVO (start-up, spin-off)
- ○ Il risultato di un investimento di un'impresa e di una persona fisica che svolge un ruolo gestionale nell'azienda (franchising)

11. Alla fondazione, la sua impresa: (può indicare più di una risposta)

- ☐ Si è inserita in un mercato già esistente producendo beni/servizi leggermente migliorati
- ☐ Si è inserita in un mercato già esistente producendo beni/servizi radicalmente modificati
- ☐ Si è inserita in un mercato già esistente producendo beni/servizi con costi inferiori
- ☐ Ha lanciato uno o più nuovi beni/servizi che creano un nuovo mercato
- ☐ Ha lanciato uno o più nuovi beni/servizi in un mercato emergente, ma non ancora consolidato
- ☐ Altro (specificare)

12. Quante persone lavoravano (soci + dipendenti) nella sua impresa

Alla fine del primo anno di attività	
Alla fine del secondo anno	
Alla fine del terzo anno	
Al 2015	

13. Indichi approssimativamente il valore dei ricavi della sua impresa

Alla fine del primo anno di attività	
Alla fine del secondo anno	
Ala fine del terzo anno	
Al 2015	

14. Indichi la percentuale del fatturato derivante da prodotti/servizi nuovi sul mercato

Alla fine del primo anno di attività	
Alla fine del secondo anno	
Alla fine del terzo anno	
Al 2015	

15. La sua impresa è localizzata in Veneto?

- ◯ Si
- ◯ No

16.
Esprima il grado di importanza della presenza dei seguenti fattori nella decisione di creare la sua impresa in Veneto e non in altre regioni

	Per nulla importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante
Infrastrutture economiche (Reti stradali, Aeroporti, Strutture per il trasferimento delle merci..)	◯	◯	◯	◯	◯
Manodopera specializzata	◯	◯	◯	◯	◯
Presenza di distretti industriali (fiducia tra operatori, riduzione costi di transazione)	◯	◯	◯	◯	◯
Presenza di fornitori specializzati (di beni e/o servizi)	◯	◯	◯	◯	◯
Presenza di un potenziale mercato per i propri beni/servizi	◯	◯	◯	◯	◯
Facilità di accesso al credito	◯	◯	◯	◯	◯
Agevolazioni fiscali	◯	◯	◯	◯	◯
Vantaggi di immagine/reputazione legata al territorio (es. certificazioni IGP, DOCG...)	◯	◯	◯	◯	◯
Presenza di società/consulenti che offrono servizi alle imprese in tema di qualità/formazione/accesso al credito/bandi regionali e/o comunitari (KIBS)	◯	◯	◯	◯	◯
Presenza di incubatori di impresa/parchi scientifici tecnologici	◯	◯	◯	◯	◯
Presenza dell'università dove ti sei laureato (l'università ha influito sulla scelta di creare impresa in Veneto?)	◯	◯	◯	◯	◯
Motivi personali (vicinanza casa/famiglia/amici)	◯	◯	◯	◯	◯
Vi erano localizzate le imprese dove ha lavorato in precedenza o i loro clienti/fornitori	◯	◯	◯	◯	◯
Altro (specificare sotto e riportare la sua importanza)	◯	◯	◯	◯	◯

.

17. SPECIFICARE CHE LA DOMANDA E' INDIPENDENTE DAL VENETO

Indichi il grado di importanza dei seguenti attori chiave nella sua decisione di creare impresa.
Indichi "Non ne ho usufruito" se non si è servito di quella realtà

	Per niente importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante	Non ne ho usufruito
Incubatori di impresa	○	○	○	○	○	○
Camera di Commercio ed enti pubblici/privati a supporto dell'imprenditorialità	○	○	○	○	○	○
Associazioni di categoria (Confindustria, Associazioni Artigiani, ecc.)	○	○	○	○	○	○
Parchi scientifici tecnologici	○	○	○	○	○	○
Network relazionale personale	○	○	○	○	○	○
Altro (specificare sotto e riportare la sua importanza)	○	○	○	○	○	○

.

* 18. Ha costituito la sua impresa da solo o con dei soci?

- ○ Solo
- ○ Con dei soci

UNIVERSITÀ DEGLI STUDI DI PADOVA

19. Con quanti soci?

0 10

20. A parte lei, quanti componenti del team che hanno fondato l'impresa hanno avuto esperienze pregresse di **CREAZIONE** di imprese?

0 10

21. Che relazione esiste tra i fondatori? (Può fornire più di una risposta)

- [ ] Parentela
- [ ] Amicizia
- [ ] Precedenti esperienze lavorative
- [ ] Si sono conosciuti ad eventi per stimolare/promuovere l'imprenditorialità organizzati dall'Università di Padova
- [ ] Hanno condiviso lo stesso percorso di studio
- [ ] **SE HANNO CONDIVISO LO STESSO PERCORSO DI STUDIO RISPONDERE ALLE DUE SUCCESSIVE ALTERNATIVE**
- [ ] Si sono conosciuti tra i banchi (coevi. Compagni di corso)
- [ ] Hanno frequentato lo stesso corso di studio (anni diversi ma stesso percorso)
- [ ] Altro (specificare)

22. Esprima una valutazione dell'importanza dei seguenti fattori nella scelta di coinvolgere dei soci

	Per niente rilevante	Poco rilevante	Abbastanza rilevante	Molto rilevante	Estremamente rilevante	Non applicabile
Colmare la mancanza di specifiche conoscenze tecniche	○	○	○	○	○	○
Colmare la mancanza di conoscenze economico gestionali	○	○	○	○	○	○
Per avere il capitale minimo per l'avvio	○	○	○	○	○	○
Per il network del/i socio/i	○	○	○	○	○	○
(DA CHIEDERE SOLO SE NELLA PRECEDENTE DICE "PARENTELA") Sono miei familiari e la mia è una azienda di famiglia	○	○	○	○	○	○
Altro (specificare sotto e riportare la sua importanza)	○	○	○	○	○	○

.

* 23. L'esperienza come studente universitario ha avuto un ruolo nella formazione del team (per trovare soci, dipendenti, stagisti, collaboratori etc.)?

- ◯ Si
- ◯ No

SE NO ALLA PRECEDENTE RISPONDERE ALLE DUE SUCCESSIVE

24. Che ruolo ha avuto l'esperienza universitaria nella sua impresa?

Per niente rilevante	Poco rilevante	Abbastanza rilevante	Molto rilevante	Estremamente rilevante
◯	◯	◯	◯	◯

25. In che termini?

26. Qual è stato l'impatto delle seguenti situazioni nella formazione del team?

	Per niente	Poco	Abbastanza	Molto	Estremamente
Partecipazione a lavori di gruppo in aula	◯	◯	◯	◯	◯
Partecipazione alle stesse lezioni	◯	◯	◯	◯	◯
Partecipazione ad incontri/aperitivi informali (Academy night, ecc.) promossi dall'Università	◯	◯	◯	◯	◯
Partecipazione a visite aziendali	◯	◯	◯	◯	◯
Partecipazione a seminari o eventisull'imprenditorialità di orientamento al mondo del lavoro	◯	◯	◯	◯	◯
Frequentazione delle stesse aule studio universitarie	◯	◯	◯	◯	◯
Altro (specificare sotto e riportare la sua importanza)	◯	◯	◯	◯	◯

.

27. Quanti dei suoi soci sono laureati?

0 — 10

DA CHIEDERE SE LA PRECEDENTE E' DIVERSA DA 0

28. Quanti di questi sono laureati a Padova?

0 10

29. Cosa hanno studiato i soci? (Facoltà)

30. Le conoscenze apprese durante l'università quanto sono state importanti per la sua impresa?

Per niente rilevante	Poco rilevante	Abbastanza rilevante	Molto rilevante	Estremamente rilevante
○	○	○	○	○

31. Che tipo di finanziamenti ha utilizzato per avviare l'azienda? Può indicare più di una risposta

- [ ] Prestito bancario
- [ ] Venture/ seed capital/ business angels privati
- [ ] Venture/seed capital/ prestiti partecipativi o altri fondi pubblici
- [ ] Capitali propri, familiari o di amici
- [ ] Altre imprese
- [ ] Altro (specificare)

32. Esprima una valutazione dell'importanza delle seguenti motivazioni per la fondazione della tua impresa:

	Per niente importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante
Volevo sfruttare opportunità di business intraviste nelle esperienze lavorative passate	○	○	○	○	○
Volevo sfruttare opportunità nate durante l'Università	○	○	○	○	○
Per sfruttare opportunità che prescindono da esperienze passate	○	○	○	○	○
Per sfruttare opportunità scaturite da bisogni personali non soddisfatti dalle soluzioni presenti sul mercato	○	○	○	○	○
Altro (specificare)	○	○	○	○	○

.

33. Esprima un parere sul grado di importanza dei seguenti elementi legati all'università, che possono avere influenzato la scelta di avviare la sua impresa

	Per niente importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante	Non applicabile
Professori stimolanti	○	○	○	○	○	○
Materie del suo percorso di studio	○	○	○	○	○	○
Incontri con manager in aula	○	○	○	○	○	○
Case studies di aziende, simulation games	○	○	○	○	○	○
Visite aziendali	○	○	○	○	○	○
Seminari/cicli di incontri sull'imprenditorialità	○	○	○	○	○	○
Associazioni studentesche	○	○	○	○	○	○
Eventi organizzati dall'università (Galileo festival, aperitivi con managers/imprese...)	○	○	○	○	○	○
Altro (specificare sotto e riportare la sua importanza)	○	○	○	○	○	○

.

34. Indichi quanto sono stati importanti per il buon funzionamento dell'impresa le sue relazioni interpersonali indicate di seguito:

	Per nulla importante	Poco importante	Abbastanza importante	Molto importante	Estremamente importante	Non applicabile
Maturate durante l'università	○	○	○	○	○	○
Maturate in esperienze professionali precedenti alla creazione dell'impresa	○	○	○	○	○	○
Maturate in esperienze professionali durante l'attività nell'impresa che ha fondato	○	○	○	○	○	○
Maturate durante la partecipazione ad un programma di incubazione	○	○	○	○	○	○
Maturate sul web	○	○	○	○	○	○
Family and friends	○	○	○	○	○	○

35. Guardando al periodo dopo la laurea, esprima una valutazione sulla rilevanza delle relazioni con l'Università di Padova

	Per niente imporante	Poco imporante	Abbastanza imporante	Molto imporante	Estremamente imporante
Relazioni con professori	○	○	○	○	○
Rapporti con i relatori di tesi	○	○	○	○	○
Ricerca di stagisti	○	○	○	○	○
Progetto di ricerca	○	○	○	○	○
Partecipazione a convegni/seminari in aula	○	○	○	○	○
Altro (specificare sotto e riportare la sua importanza)	○	○	○	○	○

.

Il questionario è finito!

36. Se vuole ricevere i risultati della nostra ricerca lasci una sua mail!

APPENDIX C: Course-Sector association

Sectors	
A	Agricoltura, silvicoltura pesca
B	Estrazione di minerali da cave e miniere
C	Attività manifatturiere
D	Fornitura di energia elettrica, gas e vapore
E	Fornitura di acqua e reti fognarie
F	Costruzioni
G	Commercio all'ingrosso e al dettaglio
H	Trasporto e magazzinaggio
I	Attività dei servizi alloggio e ristorazione
J	Servizi di informazione e comunicazione
K	Attività finanziarie e assicurative
L	Attivita immobiliari
M	Attività professionali, scientifiche e tecniche
N	Noleggio e agenzie di viaggio
P	Istruzione
Q	Sanita e assistenza sociale
R	Attività artistiche, sportive, di intrattenimento
S	Altre attività di servizi
X	Imprese non classificate

APPENDIX D: Credits in economics exams composition

Economics courses available	
NCrEcmetrx	Econometria
NCrAdvEcon	Economia applicata
NCrAccount	Economia aziendale
NCrIntermed	Economia degli intermediari finanziari
NCrManag	Economia e gestione delle imprese
NCrBusinFin	Finanza aziendale
NCrIngEco	Ingegneria economico
NCrCompMan	Organizzazione aziendale
NCrPolEcon	Politica economica
NCrFinScien	Scienza delle finanze
NcrProdScien	Scienze merceologiche
NCrHistor	Storia del pensiero economico
NCrHistEcon	Storia economica

APPENDIX E: matrix correlation of first regression's variables

	ln_rev2	gradmark	totcre~n	ex1	ex2	ex3	ex4
ln_rev2	1.0000						
gradmark	0.0425 0.5857	1.0000					
totcredecon	-0.0830 0.2861	0.0058 0.9327	1.0000				
ex1	-0.1072 0.1681	0.0199 0.7710	-0.0406 0.5530	1.0000			
ex2	0.1128 0.1466	0.0323 0.6373	0.0206 0.7630	-0.1949 0.0040	1.0000		
ex3	0.2997 0.0001	0.0095 0.8899	-0.0066 0.9231	-0.0827 0.2261	0.1157 0.0899	1.0000	
ex4	-0.0106 0.8915	-0.1445 0.0338	-0.0594 0.3848	0.1083 0.1125	-0.1216 0.0746	0.0490 0.4733	1.0000
importance~1	-0.0704 0.3872	-0.0868 0.2227	0.0028 0.9684	0.1009 0.1562	0.0079 0.9115	0.0271 0.7040	0.0520 0.4654
importance~2	0.0533 0.5130	-0.0599 0.4004	-0.0125 0.8605	-0.0132 0.8536	0.0399 0.5762	0.1354 0.0565	0.0229 0.7486
importance~3	0.0372 0.6479	0.0478 0.5023	0.0226 0.7513	-0.0196 0.7837	0.0125 0.8608	0.1544 0.0294	-0.0604 0.3966
importance~4	0.0271 0.7398	0.0557 0.4343	0.0112 0.8754	-0.0293 0.6814	0.0466 0.5136	0.0197 0.7822	-0.1231 0.0833
motivation1	0.1018 0.1906	-0.0508 0.4577	-0.0527 0.4413	-0.0770 0.2601	-0.1017 0.1364	0.1451 0.0331	0.0940 0.1688
motivation2	-0.0417 0.5925	-0.0197 0.7736	0.0695 0.3090	-0.0825 0.2271	0.0349 0.6102	-0.1037 0.1285	-0.0473 0.4890
motivation3	0.0707 0.3642	0.0488 0.4751	0.1145 0.0933	0.0300 0.6613	0.0173 0.8008	0.0310 0.6501	-0.1138 0.0951
motivation4	0.0210 0.7874	-0.0061 0.9295	0.1193 0.0801	0.0087 0.8987	0.0310 0.6509	-0.0136 0.8424	-0.0533 0.4356
employee4	0.2686 0.0005	0.0487 0.4799	-0.0366 0.5954	0.1495 0.0292	-0.1220 0.0757	0.0494 0.4734	0.0356 0.6052
loc_no	0.1552 0.0451	-0.0270 0.6927	-0.0062 0.9278	0.0458 0.5027	0.0253 0.7118	-0.0466 0.4954	-0.0908 0.1838
loc_ne	-0.0560 0.4722	0.0533 0.4362	0.0345 0.6141	0.0040 0.9529	-0.0206 0.7632	0.0203 0.7672	0.0352 0.6068
loc_c	-0.0545 0.4845	-0.0265 0.6988	-0.0310 0.6510	-0.0276 0.6862	-0.0448 0.5129	-0.0551 0.4202	0.0436 0.5239
loc_si	-0.0435 0.5763	-0.0364 0.5946	-0.0274 0.6889	-0.0479 0.4834	0.0418 0.5407	0.0776 0.2562	0.0251 0.7138
imp_ind_du~y	0.0037 0.9624	-0.0275 0.6874	0.0668 0.3283	-0.0168 0.8066	-0.0779 0.2545	-0.0381 0.5781	0.0818 0.2315
foundatio~io	-0.1380 0.0753	0.0356 0.6033	0.0004 0.9955	0.1774 0.0090	-0.1637 0.0160	-0.1422 0.0367	-0.0251 0.7138
foundatio~vo	0.1483 0.0557	-0.0351 0.6082	-0.0635 0.3533	-0.1602 0.0185	0.1474 0.0304	0.1545 0.0231	0.0319 0.6409
foundation~g	-0.0562 0.4703	0.0015 0.9828	0.2399 0.0004	-0.0489 0.4747	0.0468 0.4939	-0.0600 0.3806	-0.0283 0.6796
ycompbirth	0.0101 0.8969	-0.0990 0.1471	0.1308 0.0550	-0.0584 0.3927	-0.0458 0.5035	-0.0576 0.3999	0.0603 0.3782
ateco_agri	0.2030 0.0085	-0.0823 0.2284	0.1924 0.0045	-0.1373 0.0438	0.0905 0.1849	0.0540 0.4299	0.0106 0.8771
ateco_manu	-0.0538 0.4901	0.0597 0.3830	-0.0727 0.2876	0.0864 0.2058	-0.0581 0.3957	-0.1196 0.0794	0.1520 0.0255
ateco_serv	-0.1216 0.1186	0.0238 0.7289	-0.0973 0.1550	0.0411 0.5493	-0.0245 0.7205	0.0450 0.5115	-0.1165 0.0884

	import~1	import~2	import~3	import~4	motiva~1	motiva~2	motiva~3
importance~1	1.0000						
importance~2	0.4869 0.0000	1.0000					
importance~3	0.3208 0.0000	0.4060 0.0000	1.0000				
importance~4	0.3466 0.0000	0.4200 0.0000	0.6053 0.0000	1.0000			
motivation1	0.0620 0.3844	0.0545 0.4447	0.0709 0.3196	0.0692 0.3313	1.0000		
motivation2	-0.0128 0.8575	-0.0080 0.9111	-0.0117 0.8693	0.0041 0.9537	0.1425 0.0364	1.0000	
motivation3	0.0168 0.8143	-0.0961 0.1770	0.0389 0.5852	0.0140 0.8447	-0.0468 0.4935	0.0046 0.9463	1.0000
motivation4	0.1376 0.0526	0.0582 0.4138	0.1222 0.0855	0.0648 0.3631	0.1144 0.0934	0.0536 0.4331	0.4043 0.0000
employee4	-0.0394 0.5835	-0.0392 0.5853	-0.0260 0.7175	-0.0777 0.2791	-0.0224 0.7450	0.0572 0.4063	0.0326 0.6358
loc_no	-0.0199 0.7800	-0.0685 0.3367	0.0342 0.6320	0.0992 0.1634	-0.0656 0.3373	-0.0119 0.8621	0.0730 0.2856
loc_ne	0.0833 0.2419	0.0713 0.3172	0.0372 0.6018	-0.0342 0.6311	0.1001 0.1426	0.0679 0.3209	-0.0515 0.4515
loc_c	-0.0109 0.8783	-0.0335 0.6387	-0.0807 0.2573	0.0157 0.8257	-0.0227 0.7404	-0.0994 0.1452	-0.0502 0.4628
loc_si	-0.1138 0.1096	-0.0049 0.9453	-0.0430 0.5462	-0.0888 0.2123	-0.0715 0.2956	-0.0202 0.7683	0.0360 0.5987
imp_ind_du~y	-0.0272 0.7025	0.0499 0.4842	-0.1457 0.0400	-0.0539 0.4499	0.0642 0.3478	0.0151 0.8248	-0.0116 0.8651
foundatio~io	0.0483 0.4984	-0.0315 0.6591	-0.0256 0.7194	0.0373 0.6011	0.0389 0.5697	-0.0272 0.6914	-0.0195 0.7760
foundatio~vo	-0.0498 0.4844	0.0164 0.8181	0.0086 0.9040	-0.0675 0.3433	-0.0190 0.7816	-0.0223 0.7442	0.0329 0.6308
foundation~g	0.0105 0.8833	0.0517 0.4688	0.0594 0.4049	0.1136 0.1102	-0.0721 0.2913	0.1857 0.0062	-0.0528 0.4400
ycompbirth	-0.0479 0.5019	0.1466 0.0389	0.0317 0.6569	0.0950 0.1819	-0.1775 0.0090	-0.0203 0.7663	0.0542 0.4278
ateco_agri	-0.1303 0.0665	-0.0602 0.3980	-0.0293 0.6813	-0.1446 0.0416	-0.0505 0.4599	-0.0591 0.3874	-0.1372 0.0441
ateco_manu	0.0196 0.7835	-0.0071 0.9208	-0.0348 0.6258	-0.0432 0.5444	0.0412 0.5470	0.0623 0.3621	0.0979 0.1517
ateco_serv	0.0856 0.2303	0.0539 0.4510	0.0464 0.5162	0.1425 0.0453	0.0133 0.8457	0.0033 0.9614	0.0339 0.6209

	motiva~4	employ~4	loc_no	loc_ne	loc_c	loc_si	imp_in~y
motivation4	1.0000						
employee4	-0.0335 0.6269	1.0000					
loc_no	0.0214 0.7550	-0.0135 0.8442	1.0000				
loc_ne	0.0006 0.9927	-0.0569 0.4087	-0.7062 0.0000	1.0000			
loc_c	-0.0754 0.2702	0.1395 0.0419	-0.0568 0.4059	-0.4162 0.0000	1.0000		
loc_si	0.0354 0.6054	0.0003 0.9960	-0.0648 0.3435	-0.4742 0.0000	-0.0382 0.5770	1.0000	
imp_ind_du~y	0.0444 0.5166	0.1433 0.0366	0.0351 0.6079	-0.0251 0.7143	-0.1303 0.0558	0.1119 0.1008	1.0000
foundatio~io	0.0582 0.3945	0.2481 0.0003	0.0085 0.9009	-0.0642 0.3478	0.0709 0.2998	0.0435 0.5250	0.1040 0.1278
foundatio~vo	-0.0398 0.5606	-0.2334 0.0006	-0.0004 0.9952	0.0514 0.4521	-0.0645 0.3456	-0.0371 0.5875	-0.0946 0.1661
foundation~g	-0.0646 0.3448	-0.0314 0.6488	-0.0300 0.6608	0.0425 0.5343	-0.0177 0.7960	-0.0202 0.7683	-0.0260 0.7045
ycompbirth	0.0271 0.6920	-0.0984 0.1526	-0.0325 0.6343	0.0455 0.5058	-0.0544 0.4262	0.0104 0.8789	0.0608 0.3738
ateco_agri	0.0657 0.3365	0.1244 0.0699	-0.0542 0.4279	-0.0111 0.8709	0.1063 0.1192	0.0031 0.9635	0.0472 0.4902
ateco_manu	0.0096 0.8882	0.0236 0.7324	-0.0387 0.5712	-0.0409 0.5503	0.0355 0.6042	0.0988 0.1477	0.0351 0.6079
ateco_serv	-0.0591 0.3887	-0.1133 0.1000	0.0642 0.3487	0.0437 0.5242	-0.1079 0.1146	-0.0727 0.2883	-0.0592 0.3878

	found~io	found~vo	founda~g	ycompb~h	ateco_~i	ateco_~u	ateco_~v
foundatio~io	1.0000						
foundatio~vo	-0.9649 0.0000	1.0000					
foundation~g	-0.0403 0.5556	-0.2237 0.0009	1.0000				
ycompbirth	-0.0288 0.6735	0.0105 0.8779	0.0669 0.3275	1.0000			
ateco_agri	0.0673 0.3250	-0.0569 0.4057	-0.0334 0.6257	-0.0184 0.7876	1.0000		

APPENDIX F: matrix correlation of second regression's variables

	ln_rev2	breadt~k	veneto~1	venet~1a	veneto~2	venet~2a	veneto~3
ln_rev2	1.0000						
breadth_ne~k	-0.1480	1.0000					
	0.0562						
veneto_inf~1	0.0458	0.3273	1.0000				
	0.5566	0.0000					
veneto_in~1a	0.0494	0.4046	0.8907	1.0000			
	0.5264	0.0000	0.0000				
veneto_inf~2	-0.1679	0.5308	0.2001	0.2054	1.0000		
	0.0301	0.0000	0.0031	0.0024			
veneto_in~2a	-0.1294	0.8068	0.1140	0.1280	0.5675	1.0000	
	0.0955	0.0000	0.0946	0.0603	0.0000		
veneto_inf~3	-0.2197	0.4494	0.1376	0.1422	0.5536	0.4035	1.0000
	0.0043	0.0000	0.0434	0.0367	0.0000	0.0000	
veneto_in~3a	-0.2199	0.7730	0.0409	0.0815	0.4717	0.8212	0.5336
	0.0043	0.0000	0.5503	0.2331	0.0000	0.0000	0.0000
veneto_in~e4	-0.1416	0.5234	0.3074	0.3100	0.2937	0.1475	0.2589
	0.0680	0.0000	0.0000	0.0000	0.0000	0.0302	0.0001
veneto_in~4a	-0.1282	0.6692	0.1430	0.2197	0.2606	0.2457	0.2143
	0.0987	0.0000	0.0357	0.0012	0.0001	0.0003	0.0015
veneto_inf~5	-0.0306	0.3178	-0.0470	-0.0830	0.1750	0.2155	0.1374
	0.6945	0.0000	0.4923	0.2247	0.0100	0.0014	0.0436
veneto_in~5a	0.0411	0.5451	0.0112	0.0165	0.1955	0.4408	0.1308
	0.5980	0.0000	0.8698	0.8098	0.0039	0.0000	0.0549
employee4	0.2686	-0.0897	0.0228	-0.0146	-0.0663	-0.0560	-0.0699
	0.0005	0.1924	0.7405	0.8327	0.3357	0.4158	0.3103
loc_no	0.1552	-0.0643	-0.0276	-0.0345	0.0264	-0.0498	-0.0089
	0.0451	0.3466	0.6864	0.6141	0.7001	0.4661	0.8967
loc_ne	-0.0560	0.0743	-0.0105	-0.0492	0.0027	0.1276	0.0836
	0.4722	0.2769	0.8778	0.4715	0.9684	0.0613	0.2213
loc_c	-0.0545	-0.0126	-0.0194	0.0394	-0.0742	-0.0676	-0.0876
	0.4845	0.8538	0.7767	0.5645	0.2778	0.3226	0.1995
loc_si	-0.0435	-0.0347	0.0758	0.1048	0.0234	-0.1046	-0.0638
	0.5763	0.6124	0.2676	0.1247	0.7327	0.1252	0.3506
imp_ind_du~y	0.0037	-0.0395	0.0315	0.0578	-0.0641	-0.0859	-0.0204
	0.9624	0.5638	0.6452	0.3979	0.3481	0.2088	0.7652
foundatio~io	-0.1380	-0.0287	0.0214	0.0157	0.0980	-0.0040	0.0942
	0.0753	0.6744	0.7544	0.8183	0.1512	0.9531	0.1676
foundatio~vo	0.1483	0.0409	-0.0141	-0.0077	-0.0734	0.0285	-0.1094
	0.0557	0.5497	0.8372	0.9108	0.2826	0.6774	0.1089
foundation~g	-0.0562	-0.0490	-0.0260	-0.0291	-0.0842	-0.0933	0.0665
	0.4703	0.4738	0.7044	0.6701	0.2178	0.1719	0.3308
ycompbirth	0.0101	0.0386	-0.0257	-0.0089	0.0149	-0.0290	-0.0175
	0.8969	0.5724	0.7077	0.8961	0.8281	0.6715	0.7981
ateco_agri	0.2030	0.0419	0.0097	0.0045	0.0138	0.0632	0.0331
	0.0085	0.5400	0.8870	0.9473	0.8397	0.3556	0.6283
ateco_manu	-0.0538	-0.0643	-0.0276	0.0246	0.0111	-0.0498	-0.0216
	0.4901	0.3466	0.6864	0.7188	0.8708	0.4661	0.7523
ateco_serv	-0.1216	0.0177	0.0128	-0.0205	-0.0158	-0.0083	-0.0075
	0.1186	0.7966	0.8518	0.7652	0.8180	0.9039	0.9127

	venet~3a	venet~e4	venet~4a	veneto~5	venet~5a	employ~4	loc_no
veneto_in~3a	1.0000						
veneto_in~e4	0.1475 0.0302	1.0000					
veneto_in~4a	0.2457 0.0003	0.7841 0.0000	1.0000				
veneto_inf~5	0.1333 0.0504	0.1321 0.0526	0.2240 0.0009	1.0000			
veneto_in~5a	0.3396 0.0000	0.1071 0.1167	0.1718 0.0114	0.5989 0.0000	1.0000		
employee4	-0.1274 0.0634	-0.0429 0.5335	-0.0826 0.2300	0.0403 0.5586	0.0303 0.6596	1.0000	
loc_no	-0.0498 0.4661	-0.0327 0.6331	-0.1028 0.1321	0.0190 0.7812	0.0848 0.2143	-0.0135 0.8442	1.0000
loc_ne	0.1276 0.0613	-0.0383 0.5759	0.0251 0.7143	-0.0235 0.7310	-0.0213 0.7558	-0.0569 0.4087	-0.7062 0.0000
loc_c	-0.0676 0.3226	0.0269 0.6944	0.0221 0.7472	0.1334 0.0502	0.0500 0.4648	0.1395 0.0419	-0.0568 0.4059
loc_si	-0.1046 0.1252	0.0930 0.1731	0.0800 0.2419	-0.1018 0.1359	-0.1253 0.0660	0.0003 0.9960	-0.0648 0.3435
imp_ind_du~y	-0.0592 0.3865	0.0595 0.3841	0.0324 0.6363	-0.1198 0.0789	-0.0964 0.1581	0.1433 0.0366	0.0351 0.6079
foundatio~io	-0.0040 0.9531	0.0905 0.1851	0.0040 0.9534	-0.0981 0.1508	-0.1424 0.0365	0.2481 0.0003	0.0085 0.9009
foundatio~vo	-0.0069 0.9200	-0.0730 0.2855	0.0156 0.8197	0.0783 0.2518	0.1320 0.0528	-0.2334 0.0006	-0.0004 0.9952
foundation~g	0.0411 0.5484	-0.0581 0.3952	-0.0741 0.2780	0.0661 0.3338	0.0264 0.6995	-0.0314 0.6488	-0.0300 0.6608
ycompbirth	0.0103 0.8800	0.1175 0.0850	0.1536 0.0240	0.0069 0.9200	-0.0821 0.2294	-0.0984 0.1526	-0.0325 0.6343
ateco_agri	0.0214 0.7541	0.0440 0.5204	0.0460 0.5008	-0.1238 0.0695	-0.0238 0.7282	0.1244 0.0699	-0.0542 0.4279
ateco_manu	-0.0498 0.4661	-0.0155 0.8204	-0.0351 0.6079	-0.0541 0.4288	-0.1081 0.1133	0.0236 0.7324	-0.0387 0.5712
ateco_serv	0.0247 0.7190	-0.0218 0.7506	-0.0090 0.8953	0.1345 0.0489	0.0953 0.1637	-0.1133 0.1000	0.0642 0.3487

	loc_ne	loc_c	loc_si	imp_in~y	found~io	found~vo	founda~g
loc_ne	1.0000						
loc_c	-0.4162 0.0000	1.0000					
loc_si	-0.4742 0.0000	-0.0382 0.5770	1.0000				
imp_ind_du~y	-0.0251 0.7143	-0.1303 0.0558	0.1119 0.1008	1.0000			
foundatio~io	-0.0642 0.3478	0.0709 0.2998	0.0435 0.5250	0.1040 0.1278	1.0000		
foundatio~vo	0.0514 0.4521	-0.0645 0.3456	-0.0371 0.5875	-0.0946 0.1661	-0.9649 0.0000	1.0000	
foundation~g	0.0425 0.5343	-0.0177 0.7960	-0.0202 0.7683	-0.0260 0.7045	-0.0403 0.5556	-0.2237 0.0009	1.0000
ycompbirth	0.0455 0.5058	-0.0544 0.4262	0.0104 0.8789	0.0608 0.3738	-0.0288 0.6735	0.0105 0.8779	0.0669 0.3275
ateco_agri	-0.0111 0.8709	0.1063 0.1192	0.0031 0.9635	0.0472 0.4902	0.0673 0.3250	-0.0569 0.4057	-0.0334 0.6257
ateco_manu	-0.0409 0.5503	0.0355 0.6042	0.0988 0.1477	0.0351 0.6079	0.0545 0.4252	-0.0453 0.5078	-0.0300 0.6608
ateco_serv	0.0437 0.5242	-0.1079 0.1146	-0.0727 0.2883	-0.0592 0.3878	-0.0906 0.1857	0.0758 0.2684	0.0477 0.4862

	ycompb~h	ateco_~i	ateco_~u	ateco_~v
ycompbirth	1.0000			
ateco_agri	-0.0184 0.7876	1.0000		
ateco_manu	-0.0388 0.5707	-0.1072 0.1162	1.0000	
ateco_serv	0.0486 0.4783	-0.7024 0.0000	-0.6319 0.0000	1.0000

APPENDIX G: matrix correlation of third regression's variables

	ln_rev2	knowle~e	f1	f2	f3	post_l~1	post_l~2
ln_rev2	1.0000						
knowledge	-0.1286 0.0986	1.0000					
f1	-0.0522 0.5031	-0.0360 0.6006	1.0000				
f2	-0.0680 0.3826	0.5283 0.0000	0.1455 0.0325	1.0000			
f3	-0.0670 0.3898	0.0206 0.7647	0.2841 0.0000	0.0062 0.9274	1.0000		
post_laure~1	-0.0265 0.7335	0.1817 0.0077	0.1020 0.1352	0.3463 0.0000	0.0668 0.3288	1.0000	
post_laure~2	-0.1690 0.0291	0.2093 0.0021	0.0739 0.2796	0.3512 0.0000	0.0929 0.1736	0.7763 0.0000	1.0000
post_laure~3	0.0141 0.8570	0.1467 0.0320	0.1623 0.0170	0.1889 0.0054	0.1804 0.0079	0.3802 0.0000	0.3641 0.0000
post_laure~4	-0.1269 0.1021	0.1109 0.1058	0.2137 0.0016	0.2579 0.0001	0.2503 0.0002	0.4110 0.0000	0.3729 0.0000
post_laure~5	-0.2140 0.0055	0.2623 0.0001	0.2630 0.0001	0.2702 0.0001	0.1803 0.0079	0.4465 0.0000	0.4234 0.0000
employee4	0.2686 0.0005	0.0061 0.9299	-0.0652 0.3435	0.0942 0.1707	-0.0340 0.6221	0.1046 0.1280	0.0721 0.2950
loc_no	0.1552 0.0451	-0.0076 0.9115	-0.0436 0.5243	0.0344 0.6148	0.0106 0.8770	-0.0471 0.4908	-0.0879 0.1983
loc_ne	-0.0560 0.4722	0.1314 0.0550	0.0103 0.8806	0.1115 0.1023	-0.0747 0.2746	0.0872 0.2018	0.0783 0.2516
loc_c	-0.0545 0.4845	-0.0733 0.2857	0.0147 0.8295	-0.1339 0.0493	0.0589 0.3892	-0.0669 0.3279	-0.0033 0.9616
loc_si	-0.0435 0.5763	-0.1663 0.0149	0.0297 0.6640	-0.1357 0.0464	0.0705 0.3025	-0.0347 0.6120	-0.0170 0.8037
imp_ind_du~y	0.0037 0.9624	-0.0479 0.4862	0.0291 0.6711	0.0731 0.2848	0.0069 0.9203	-0.0460 0.5012	-0.0509 0.4568
foundatio~io	-0.1380 0.0753	0.0601 0.3817	-0.0378 0.5806	0.1153 0.0910	-0.1284 0.0595	0.1340 0.0493	0.1550 0.0227
foundatio~vo	0.1483 0.0557	-0.0483 0.4826	0.0498 0.4664	-0.1213 0.0753	0.1386 0.0419	-0.1548 0.0229	-0.1740 0.0104
foundation~g	-0.0562 0.4703	-0.0387 0.5732	-0.0492 0.4719	0.0335 0.6239	-0.0506 0.4590	0.0917 0.1795	0.0867 0.2042
ycompbirth	0.0101 0.8969	-0.0354 0.6062	-0.0302 0.6589	0.0344 0.6156	0.0752 0.2710	-0.0335 0.6243	-0.0271 0.6925
ateco_agri	0.2030 0.0085	-0.0177 0.7972	-0.0557 0.4157	0.0108 0.8741	-0.0951 0.1639	-0.0616 0.3674	-0.0148 0.8288
ateco_manu	-0.0538 0.4901	-0.0310 0.6516	0.0369 0.5898	-0.0245 0.7208	-0.0474 0.4882	0.0758 0.2671	0.0692 0.3114
ateco_serv	-0.1216 0.1186	0.0413 0.5493	0.0175 0.7988	0.0123 0.8571	0.1071 0.1173	-0.0046 0.9465	-0.0364 0.5951

	post_l~3	post_l~4	post_l~5	employ~4	loc_no	loc_ne	loc_c
post_laure~3	1.0000						
post_laure~4	0.4479 0.0000	1.0000					
post_laure~5	0.4075 0.0000	0.5455 0.0000	1.0000				
employee4	0.0528 0.4432	-0.0936 0.1734	-0.0355 0.6060	1.0000			
loc_no	-0.0140 0.8379	-0.0607 0.3747	0.0269 0.6944	-0.0135 0.8442	1.0000		
loc_ne	-0.0021 0.9757	0.0623 0.3621	0.0148 0.8292	-0.0569 0.4087	-0.7062 0.0000	1.0000	
loc_c	0.0538 0.4314	-0.0039 0.9540	-0.0307 0.6535	0.1395 0.0419	-0.0568 0.4059	-0.4162 0.0000	1.0000
loc_si	-0.0240 0.7259	-0.0254 0.7108	-0.0381 0.5775	0.0003 0.9960	-0.0648 0.3435	-0.4742 0.0000	-0.0382 0.5770
imp_ind_du~y	-0.0049 0.9429	-0.1620 0.0172	-0.0360 0.5983	0.1433 0.0366	0.0351 0.6079	-0.0251 0.7143	-0.1303 0.0558
foundatio~io	-0.0333 0.6263	-0.0599 0.3812	0.0122 0.8579	0.2481 0.0003	0.0085 0.9009	-0.0642 0.3478	0.0709 0.2998
foundatio~vo	0.0250 0.7146	0.0704 0.3030	-0.0299 0.6624	-0.2334 0.0006	-0.0004 0.9952	0.0514 0.4521	-0.0645 0.3456
foundation~g	0.0284 0.6778	-0.0456 0.5046	0.0681 0.3188	-0.0314 0.6488	-0.0300 0.6608	0.0425 0.5343	-0.0177 0.7960
ycompbirth	-0.1944 0.0041	-0.0496 0.4681	-0.0583 0.3937	-0.0984 0.1526	-0.0325 0.6343	0.0455 0.5058	-0.0544 0.4262
ateco_agri	-0.0228 0.7386	-0.0052 0.9396	-0.0035 0.9589	0.1244 0.0699	-0.0542 0.4279	-0.0111 0.8709	0.1063 0.1192
ateco_manu	0.1966 0.0037	0.1111 0.1033	0.1037 0.1287	0.0236 0.7324	-0.0387 0.5712	-0.0409 0.5503	0.0355 0.6042
ateco_serv	-0.1217 0.0750	-0.0745 0.2768	-0.0700 0.3071	-0.1133 0.1000	0.0642 0.3487	0.0437 0.5242	-0.1079 0.1146

	loc_si	imp_in~y	found~io	found~vo	founda~g	ycompb~h	ateco_~i
loc_si	1.0000						
imp_ind_du~y	0.1119 0.1008	1.0000					
foundatio~io	0.0435 0.5250	0.1040 0.1278	1.0000				
foundatio~vo	-0.0371 0.5875	-0.0946 0.1661	-0.9649 0.0000	1.0000			
foundation~g	-0.0202 0.7683	-0.0260 0.7045	-0.0403 0.5556	-0.2237 0.0009	1.0000		
ycompbirth	0.0104 0.8789	0.0608 0.3738	-0.0288 0.6735	0.0105 0.8779	0.0669 0.3275	1.0000	

ateco_agri	0.0031	0.0472	0.0673	-0.0569	-0.0334	-0.0184	1.0000
	0.9635	0.4902	0.3250	0.4057	0.6257	0.7876	
ateco_manu	0.0988	0.0351	0.0545	-0.0453	-0.0300	-0.0388	-0.1072
	0.1477	0.6079	0.4252	0.5078	0.6608	0.5707	0.1162
ateco_serv	-0.0727	-0.0592	-0.0906	0.0758	0.0477	0.0486	-0.7024
	0.2883	0.3878	0.1857	0.2684	0.4862	0.4783	0.0000

	ateco_~u	ateco_~v
ateco_manu	1.0000	
ateco_serv	-0.6319	1.0000
	0.0000	

RINGRAZIAMENTI

Voglio ringraziare la mia relatrice, la Professoressa Sedita, per il tempo che mi ha dedicato, per i sapienti consigli, per la possibilità di avermi fatto studiare ed analizzare un tema a me molto caro come la student entrepreneurship. Lavorare con lei è stato un piacere oltre che un periodo di continua formazione.

Allo stesso modo voglio ringraziare la Dottoressa Roberta Apa, sempre presente e disponibile. I suoi suggerimenti, così come le sue indicazioni, sono stati provvidenziali per la buona riuscita del mio lavoro di tesi. Grazie Roberta.

Il mio ringraziamento speciale va alla mia Famiglia: ad Antonino, mio Padre; a Melina, mia Madre ed alle tre mie sorelle, Elisa, Lorena e Sara. Il loro costante supporto è stato tanto necessario quanto proficuo. Questo traguardo lo devo principalmente a loro, per aver creduto in me, per aver investito in me al fine di garantirmi un futuro dignitoso. Grazie Famiglia.

Un ringraziamento altrettanto sentito va alla mia ragazza, Gloria. La sua presenza ed il suo amorevole modo di stare accanto a me lungo tutto il percorso accademico, mi hanno donato serenità, fiducia e determinazione per affrontare ogni prova. Se oggi festeggio questo importante traguardo è anche grazie a lei. Grazie Amore ❤

L'esperienza come studente a Padova mi ha fatto conoscere delle persone meravigliose e mi ha permesso di vivere delle situazioni che difficilmente avrei potuto vivere altrove: dagli sport che ho praticato (sciabola e dragonboat), al volo in aliante sulla città, alla forma mentis imprenditoriale che mi maggiormente inculcato ed incitato a sviluppare. Grazie Padova.

Per concludere voglio ringraziare Alex, Bigi ed Enrico. Insieme abbiamo creato dal nulla un prodotto fantasmagorico come YouGuide che ci ha permesso di crescere in conoscenze ed esperienze. Ci ha inoltre consentito di capire che fare l'imprenditore è qualcosa che si deve avere nel sangue e che questo è un processo di continuo learning by doing. Se non si prova e non si sbaglia non si va da nessuna parte. Grazie ragazzi!