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Does success come with practice?
An overview of Entrepreneurs' background and New Venture Performance

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Abstract

Title: Does success come with practice? An overview of Entrepreneurs' background and New Venture Performance

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Although it is considered a controversial topic, the role of startup founders' collective experience in the new venture performance has been largely explored in past research. Prior studies have produced mixed results, some found their experiences to be crucial to success, while others argue that other dimensions need to be taken into consideration. Using a sample of 45 Portuguese tech startups, this study shows that experience in similar industries and self-employment work experience positively influence startup performance. Furthermore, the technical experience of founders and business development know-how affect their performance in early stages, while marketing and sales expertise impact in a latter phase. The education level does not exert a key influence on growth, but the existence of a mentor does have a positive impact. Having individuals with prior management and leadership experience within the founding team also results in an increase in performance, which is consistent with previous theories. Lastly, in contrast with the prevailing view in the literature, the results show that performance is not influenced by prior entrepreneurial experience. Both theoretical and practical implications arise from this study – success is greatly determined by the human capital of founders of new technology-based firms, however, multiple variables need to be analyzed in context to demonstrate a significant influence.

Resumo

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Embora seja considerado um tema controverso, tem sido exaustivamente explorado nas últimas décadas qual o papel da experiência dos fundadores no desempenho da startup. Estudos anteriores têm revelado resultados diferenciados, alguns argumentam que as experiências são fundamentais para o sucesso, enquanto outros concluem que existem outras dimensões a ser tomadas em consideração. Com uma amostra de 45 startups de tecnologia em Portugal, este estudo demonstra que experiência na mesma indústria e como trabalhador por conta própria influenciam positivamente o desempenho da empresa. Adicionalmente, a experiência técnica dos fundadores e o conhecimento do desenvolvimento de negócios afetam o desempenho na fase inicial, sendo que experiência em marketing e vendas tem impacto numa fase posterior. O nível de escolaridade não exerce uma influência fundamental sobre o crescimento do negócio, no entanto, a existência de um mentor demonstra um impacto positivo. A existência de membros da equipa de fundadores com conhecimentos de gestão e experiência de liderança também resulta num aumento do desempenho, o que é consistente com teorias anteriores. Por último, em oposição à maioria dos estudos, os resultados mostram que o desempenho da startup não é influenciado por experiências em empreendedorismo dos fundadores. Surgem tanto implicações teóricas como práticas deste estudo - o sucesso é consideravelmente determinado pelo capital humano dos fundadores de startups tecnológicas, no entanto, algumas das variáveis necessitam de ser colocadas num contexto para manifestar uma influência significativa.

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After 22 years of existence and almost 17 years of studies, this thesis represents the end of my academic life. I had the pleasure to have had great professors and mentors, to be part of four of the best universities in the world, to travel around three continents and to make great friends around the globe. I believe I grew and developed the necessary skills and knowledge to start building an international career as a successful business woman. During this path many people helped me overcome many challenges and celebrated the small victories I conquered. This is the time to acknowledge everyone that has been a part of this process.

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Chapter 1 | Introduction

Nowadays, the concept of entrepreneurship has been receiving more attention in Portugal, and its importance has been praised in the formation of startups and their success. Startups such as Uber (valued at $51.0 billion by venture-capital firms), Airbnb ($25.5 billion), Snapchat ($16.0 billion) and Spotify ($8.5 billion) have changed the way of doing business, according to Wall Street Journal and Dow Jones VentureSource (2015). However, these values do not simply represent a trend in recent years, but enclose a growing trend of entrepreneurship that has been occurring throughout the decades, mostly due to rapid growth of technology and innovation dynamics in Silicon Valley. Schoonhoven and Eisenhardt (1989) claimed that Silicon Valley is an incubator region where numerous players come together to support the establishment and growth of startups aiming to exploit a market opportunity.

According to OECD (2015), following a crisis period there is an upward trend in the creation of new businesses. After Australia, United Kingdom and Sweden, Portugal is the country demonstrating higher changes regarding the number of new enterprises created. These expectations only hold if the new businesses perform well. However, it is empirically demonstrated that a large percentage of new ventures fail within a short period of time (Brüderl et al. 1992) - it is generally estimated that between 80% and 90% of startups do not succeed.

Many researchers have tried to identify what are the key factors that determine the success of the new ventures. Some have demonstrated that a positive impact in the new venture activity is achieved through the improvement of their entrepreneurial judgment (Corbett 2005), as well as their human capital. This is evidence that formal education and prior professional experience of the founders can be the source of their greater performance.

In literature, human capital is divided in two components, generic and specific (Becker 1975, cited in Colombo and Grilli 2010). On the one hand, generic human capital encompasses knowledge acquired through formal education qualifications and professional experience before establishing a startup. Specific human capital, on the other hand, is related with capabilities that can be applied to the entrepreneurial job, since they came from business experience in the same industry or from managerial practice. Later on, we will revisit this concept to determine its importance in the success of startups.

Academic Relevance

Previous researchers have studied the entrepreneur's experience on new firm performance (Toft-Kehler 2013, Cassar 2012, Bosma et al. 2004, Jo and Lee 1996, Brüderl et al. 1992).

As a complement of the produced literature, I consider it is interesting to study the Portuguese startup founders' background influence on the new venture performance taking into account the following variables: existence of a mentor, marketing and sales know-how, management experience in the context of the stage of the startup, and leadership experience contextualized in the age of the startup. In the present research, these variables intend to provide a more comprehensive understanding of the founders' background which might partially explain the performance of the startups.

Managerial Relevance

In the eyes of the European entrepreneurship community and Beta-i, Portugal is one of the biggest promoters of startup and entrepreneurship in Europe, particularly considering it was invited to launch the Portuguese Startup Manifesto. I have been collaborating in this process with the main goal of producing a document aiming to drive the agenda for the promotion of both entrepreneurship and innovation, so as to accelerate the growth of the Portuguese entrepreneurship ecosystem. While collecting data, some of the main questions from participants, particularly corporate representatives and investors, encompassed the influence of having managerial or industry experience and its impact when founding a new venture.

In addition, taking into account the high dissolution rates – a big issue that concerns new businesses -, banks, investors, among others, considered this research to be relevant, especially given that it contributes to better understanding if the background of the founding teams does minimize the number of business failures.

Problem Statement and Research Questions

This study will empirically assess the relationship between the background of startup founders and the performance of new ventures. In order to address this issue, four research questions need to be answered.

Research Question 1 | What is a startup and how is it different from other small businesses?

It is widely accepted that startups have unique characteristics that differ from other small businesses which lead players to have different beliefs and behaviors towards them. Therefore, it is important to study how both differ from each other.

Research Question 2 | What are the factors worth considering when studying the background of startup founders?

If one wants to understand how a startup founder's background influences their new venture performance, one has to properly identify the relevant factors to be considered upon defining the background variables.

Research Question 3 | What are the main indicators of performance of new ventures?

In defining levels of success or failure of new ventures, it is important to understand which indicators are relevant and appropriate to evaluate startups.

Research Question 4 | What are the relationships between the background factors and the performance of new ventures?

A startup's performance may be widely influenced by the founder's background, or it may not. This question aspires to determine which are the background factors that mainly influence the new venture performance and how they affect it.

Thesis organization

This study starts by briefly introducing the relevance of the research topic, which encloses supportive arguments for the defined problem statement and research questions. Subsequently, Chapter 2 | Literature Review addresses the most relevant academic material to contextualize this analysis, mainly focusing on background variables, new ventures performance measures and the relationship between the latter factors. All techniques and tools used to analyze the collected primary data are explained in Chapter 3 | Methodology, followed by Chapter 4 | Results and Discussion, a section that encompasses the presentation and extensive analysis of this study's results. Finally, Chapter 5 | Conclusion focuses on discussing the results obtained and their contribution to the entrepreneurship literature.

Chapter 2 | Literature Review

2.1 Startup Construct

The Entrepreneurial Venture

The term Startup is commonly used. Nevertheless, its definition has been a subject of discussion for a long time among the global entrepreneurship ecosystem. There have been several studies on the matter, however none have reached a plausible widely accepted conclusion.

Schumpeter (1934) was one of the first researchers to contribute to the formalization of concepts such as innovation and entrepreneurship. He conceptualized *the entrepreneur* as a single entity, whose function is to revolutionize the mean of production by exploiting innovative methods, thus reinforcing the importance of his existence in the economic activity. Five categories were enumerated to characterize the entrepreneurial venture (Schumpeter 1934, cited in Carland et al. 1984). The first category was the introduction of new goods; the second, was the introduction of new methods of production; the third, was the opening of new markets; the fourth was the opening of new sources of supply; and finally, the industrial reorganization. Additionally, the risk taking propensity is pointed out in literature as a differentiating characteristic of entrepreneurship. Nonetheless, Schumpeter (1934) considers it to be a factor intrinsic to business ownership rather than exclusively to new venture businesses. All in all, the decisive factor relies on the innovative criterion, which is related to a unique entry into a market.

Startup vs Small Business: similar, but not the same

Not all new ventures are of an entrepreneurial nature, Schumpeter (1934) argues that an entrepreneurial firm implies innovation and growth, hence surpassing the concept of a traditional small business which will most likely remain of a reduced size during its lifetime (Carland et al. 1984). Most of the empirical research considers the self-employment rate, the number of startups, and the small business activity as a plausible measure for the rate of entrepreneurship (Henrekson and Sanandaji 2013). However, the same study proved that the rate of billionaire entrepreneurs, which is considered a valid cross-country measure of Schumpeterian entrepreneurship, is negatively correlated with the previous three measures. It goes further in describing that “countries with higher income, higher trust, lower taxes, more venture capital investment, and lower regulatory burdens have higher billionaire entrepreneurship rates but less self-employment”. This explanation holds with the fact that it is in those countries where most innovative high-growth firms emerge. One should emphasize

that the majority of self-employed individuals are not included in the Schumpeterian entrepreneurial definition. This is so because they do not bring innovation to the market and do not plan to grow their business. Hurst and Pugsley (2011) reinforced this argument in their study with empirical evidence, showing that only 10% to 20% of small businesses report some innovative activity, and when young startups were questioned about growth ambitions, 75% of participants stated that "I want a size I can manage myself or with a few key employees".

The following definitions aim to clarify the concepts of small business and entrepreneurial venture discussed in this dissertation. Firstly, Carland et al. (1984) identified the concept of small business as independently owned and operated, highlighting both the non-innovative activity and the non-dominance, neither local nor national. Friar and Meyer (2003) added that a small business has the central purpose of generating income for the owner. Henrekson and Sanandaji (2013) mentioned that small business activity is related to flexible employment forms and it represented a fundamental activity of the economic systems. In what concerns the entrepreneurial venture concept, Carland et al. (1984) take Schumpeter's (1934) definition and explain that an entrepreneurial venture needs to engage in one of the five characteristics aforementioned. Friar and Meyer (2003) argue that the focus of these ventures is both profitability and growth, and together they create value through innovative strategic practices, a description also supported by Henrekson and Sanandaji (2013).

Startup Definition

Startup is conceptualized in a consistent way. However, no formal definition has been structured yet. Thus, in this study, I consider that an entrepreneurial venture is born from an identified necessity in the market, which comprises an innovative product, service, strategy or concept. It is designed to grow rapidly, envisioning a large market (scalability). Hence, the startup is aimed to compete worldwide. Finally, the growth and profitability of the business cannot be proportional to the number of people that compose the company.

Startup Lifecycle and Financing Phases

The entrepreneurial venture lifecycle is commonly agreed between authors. Leach and Melicher (2012) describe the five growth phases as the following: (1) Development stage is characterized as the process from an idea to a potential business opportunity, where founders need to test it and evaluate if it is worth pursuing or not. (2) The Startup stage happens when the business gains formal shape and the revenue model is put in place. (3) The Survival stage is regarded as the phase where new ventures begin to have concerns regarding their financial condition.

Especially considering that, in general, revenues do not cover all the expenses, thus requiring the introduction of third-party owners to bridge this financial gap. (4) The Rapid-growth stage is when the startup experiences a boom, cash flows grow very quickly and the value of the business increases radically. Finally, the (5) Early-maturity stage is where the product development becomes robust and predictable with proven processes for product inventions, hence the founders and investors may face decisions such as exiting the venture through a sale or a merger.

The financing phases are related with the startup lifecycle (see Appendix 1). At the Development stage the startups are bound to be funded either by the entrepreneurs own resources or by their family. In contrast, in the next two phases new funding opportunities arise in the form of crowdfunding and Business Angels. However, it is at this stage of the lifecycle curve, also known as the Valley of Death, where entrepreneurs encounter most problems. Their goal at this stage is to get to the break-even point and achieve a scalable model for sustainable growth. From this point on the Rapid-growth stage starts. Once the startup creates a scalable model, the Venture Capital (VC) will support the company in its expansion, which it is generally divided in Series A and B, considering that funding rounds depend on the maturity level of the businesses, the type of investors involved and the purpose for raising capital. Eventually, when the curve encounters its maturity level, the rounds are divided in Series C and Mezzanine, where decisions as Mergers & Acquisitions and exits are taken. Lastly, depending on the markets the startup is operating, Initial Public Offerings might become a possibility.

2.2 Founding team background

Overview

It is commonly expressed by investors that they "bet on the jockey, not on the horse' when choosing which ventures to finance. In fact, the majority of new ventures are destined to fail (Kirchhoff 1994, cited in Oe and Mitsuhashi 2013). Therefore, entrepreneurs, mentors, investors, and other players of the entrepreneurship ecosystem need to have a better understanding of the factors relating to both its survival and growth, and potentially create strategies to overcome the challenges startups face.

"Initial resources may act as a buffer against the liabilities of newness and smallness" (Cooper et al. 1994). These resources are categorized as financial capital and human capital, representing the knowledge bases that likely influence the founders' ability to undertake actions (Cooper et al. 1994). New ventures dynamics involve an experimentation process, trial and error (Oe and

Mitsuhashi 2013) considering there are no methodologies, procedures, institutional identity, a well-established market momentum, nor credibility among customers or suppliers (Stinchcombe 1965, cited in Cooper et al. 1994). Thus, the greater the human capital of founders, the stronger the synonym of experience, preparation and formal education is (Colombo and Grilli 2010). As a consequence, they are better at making decisive actions in their ventures (Cooper et al. 1994), as well as both evaluating and selecting opportunities to explore and thriving in an uncertain context (Minniti and Bygrave 2001, cited in Cassar 2012).

To summarize the effects that the founding team's experience has in the performance of new ventures, Campbell (1992) suggests that it (1) provides information that helps to structure processes and identify necessary skills; (2) facilitates the organization and cohesion of the team; and (3) brings a network of potential employees, suppliers, investors and customers.

Education Level

Past findings have produced mixed results. Dyke et al. (1992) cited education as a non-influential factor of performance in the majority of the industries studied. However, authors argue that this finding may be due to the nature of the selected industries, thus the importance of education depends on the industry analyzed. In an attempt to synthetize the influence of this variable, Jo and Lee (1996) argued that education is positively correlated with profitability, but not with growth. The result that the years of education does not have an impact on new venture's growth was later sustained by Gimeno et al. (1997), Haynes (2003) and Colombo and Grilli (2010). Jo and Lee (1996), while investigating the impact between the major of an entrepreneur- in a context of university education- and the type of business area of their new venture, demonstrated that the degree of relatedness between an entrepreneurs' major and the product does not affect profitability. Going further on the research, they determined that social sciences majors positively affect growth, and later, Colombo and Grilli (2010) added that technical and scientific fields produce the same results.

On the other hand, education demonstrated a highly influential power in reducing the mortality of newly founded businesses when Brüderl et al. (1992) investigated business founders in Germany. A higher level of education most likely leads to a better development of the problem-solving skills of entrepreneurs, as well as higher commitment, motivation and discipline (Cooper et al. 1994). Founders of innovative entrepreneurial firms have an excellent educational and professional background, mainly in Information Technology and other engineering areas which provided them with the necessary bases to understand the risks of opening a new business

(Licht and Nerlinger 1997). Almus and Nerlinger (1999) went further in measuring the impact of business education, which displayed a significant impact solely in low technology startups.

Hypothesis 1: On average, the performance of the new venture is higher if at least one of the founders has a Masters' degree.

Managerial Experience

"Knowledge of how to manage a business is mostly tacit and is commonly acquired by substantial investment of time in observing, studying, and making business decisions" (Cooper et al. 1994). Rationally, managerial experience provides the opportunity to leverage skills related to monitoring diverse functions, and allows the establishment of a network between customers and suppliers, among other players, that might be useful to the new business. Similarly to education, management know-how may also act as a proxy for having greater motivation and aptitude for solving problems (Cooper et al. 1994). Thus, it becomes expectable that the managerial knowledge would increase the chances of making successful business specific decisions in new firms.

Dyke et al. (1992) and Gimeno et al. (1997) empirically confirmed the positive impact of management know-how in the performance of the new venture. Nevertheless, Cooper et al. (1994), using a sample of 2,994 entrepreneurs whose businesses they tracked during three years across several regions in the United States, found that the performance of a new venture was weakly affected by management know-how *per se*. In order to provide a possible explanation to sustain this finding, they elaborated two arguments: (1) the management know-how only affects companies when raising initial financial capital for the business; (2) this type of know-how, when acquired in an industry, may not be transferable to others. Jo and Lee's (1996) analysis of startups in Korea showed significant negative values for return on assets and return on employees when correlating with the managerial experience variable. Upon subdividing this variable, they demonstrated that unsuccessful managerial experiences affected performance negatively, and non-experience affected positively. In an attempt to justify their findings they presented two reasons. One is related to the tendency of losing management qualifications overtime, meaning that entrepreneurs with higher managerial experience tend to be less scrupulous in operating funds than the inexperienced entrepreneurs. The other reason is the bureaucratic conduct that the entrepreneur needs to adjust to, highlighting the necessity to adopt a more flexible and dynamic management pattern to ensure the success of the small business. The previous results are also supported by Colombo and Grilli (2010) upon their investigation

of 506 Italian New Technological-Based Firms (NTBFs), demonstrating that previous managerial experience of founders does not affect new venture's growth. Nevertheless, they stress that this type of know-how is potentially linked to the acquisition of external private equity, indirectly influencing the growth of the startup.

Hypothesis 2: On average, the founding team with managerial experienced members increases the performance of the new venture.

Hypothesis 3: On average, the founding team with at least one of the members with leadership experience increases the performance of the new venture.

Industry Experience

Findings regarding the founding team industry-specific experience are more robust. It is defined as the type of know-how nascent from similar businesses, extending from "products, processes, and technology to specific human capital investment in relationships and goodwill with specific customers, suppliers, or stakeholders" (Cooper et al. 1994). Delmar and Shane (2006) added that it also provides information about specific regulations, networks in the value chain and employment practices.

It is consensually argued in empirical literature that this type of experience is highly valuable for startup founders (Oe and Mitsuhashi 2013, Cassar 2012, Delmar and Shane 2006, Haynes 2003, Gimeno et al. 1997, Cooper et al. 1994, Brüderl et al. 1992). The arguments that sustain this conclusion are the following. (1) Entrepreneurs with industry know-how are more aware of new business opportunities and processes, factors that tend to reduce uncertainty upon the development of the venture (Dimov 2010). (2) Industry experience generally provides more information about the new business, such as pricing strategies, cost structure, value chain and market segments (Brüderl et al. 1992). (3) Not only industry trends awareness are created through the previous industry experience, but also knowledge of production processes or service delivery. If entrepreneurs have previously worked with customers, they will be able to understand the complexity of the service offering, as well as the necessary actions to satisfy customer needs. Consequently, this becomes an advantage by allowing them to rapidly identify and adjust their market strategy. In addition, networks that are created over time can potentially be transferred to the new venture, resulting in a higher support from suppliers, distributors and customers, and ultimately facilitate the process of obtaining both status and legitimacy (Delmar and Shane 2006). (4) It brings an advantage by reducing the "unpleasant surprise" when starting a business (Cassar 2012). The author concludes that through obtaining relevant information

about operations, costs, markets and technology, it is possible to analyze how to improve the forecasting of new venture performance. (5) Toft-Kehler (2013) proved that it minimizes the negative effect of reduced levels of experience, at the same time strengthening the direct relationship when the entrepreneur shows high levels of experience.

Hypothesis 4: On average, the performance of the new venture is higher if at least one of the founders has had a self-employment experience.

Hypothesis 5: On average, the performance of the new venture is higher if at least one of the founders has had experience in a similar industry.

Hypothesis 6: On average, the performance of the new venture is higher if at least one of the founders has had experience in the IT functional area.

Hypothesis 7: On average, the performance of the new venture is higher if at least one of the founders has had experience in Business Development functional area.

Entrepreneurial Experience

Two different concepts can be established: (1) entrepreneurial experience is considered when "an entrepreneur founded a firm as a key person and took an important role in the operation of the new firm and the startup stage and after" and (2) startup experience is considered when an "entrepreneur started a firm as a manager" (Jo and Lee 1996).

It should be predictable that entrepreneurial experience has a positive impact on the management of startup, since it is clear that entrepreneurs acquire knowledge about firm organization, resources needs, identification and analysis of opportunities (Delmar and Shane 2006). Nevertheless, in some studies, this variable has shown a negative impact in the performance of the new ventures (Oe and Mitsuhashi 2013, Cassar 2012, Jo and Lee 1996). Upon subdividing entrepreneurial experience into successful and unsuccessful experience in their studies, they concluded that successful experience affects profitability most favorably. Additionally, they found that the non-experienced entrepreneurs demonstrate better results in the new firm, when evaluating return on assets and return on employees.

On the other hand, Gimeno et al. (1997) demonstrated that entrepreneurial experience has a positive influence on the economic performance of the new venture. They argue that the reason relies on the fact that entrepreneurs developed routines and know-how about processes on how to start a business, which facilitates next ventures. In the same reasoning, Haynes (2003) was able to prove that sales revenues of the new venture would increase when the entrepreneurs

were not novice. Delmar and Shane (2006) distinguished four points that sustain the argument that previous founders' entrepreneurial experiences impact positively the new venture's performance, contrary to the former authors. Firstly, entrepreneurs have already dealt with problems related to hiring employees, capital investment, business development and finding the right clients, which implies that they are more aware of what it takes to be successful. Secondly, talent-position fit in a small organization is vital and often determines the future of the business, and experienced founders are more conscious about this challenge. Furthermore, social ties are also determinant to assure new venture success, hence, previous experiences can fill in the gap of the initial lack of ties to stakeholders. Finally, startup experience enables tacit knowledge about how to run a new firm, since founders have learned from past mistakes.

Hypothesis 8: On average, the performance of the new venture is higher if at least one of the founders has had an entrepreneurship experience, excluding experience as a founding member.

Hypothesis 9: On average, the performance of the new venture is higher if at least one of the founders has had an entrepreneurship experience as founder of a previous startup.

New Venture Failure

New venture failure has been considered both a positive and negative occurrence. While the positive impacts are more related with acquired experience, learning from mistakes, and other less visible benefits, Kim et al. (2009) described the negative effects of failure as monetary and emotional costs. In the US, most of the entrepreneurial ecosystem players consider previous failure as a virtue, however the same vision is not shared in Portugal where, for instance, failure is not praised and often haunts founders for a long time, shaping their reputation. Kim et al. (2009) used a sample of US commercial banks to demonstrate that startup failure experience has a certain positive role in the creation of startup expertise. However, they found a range in the growth of experience where the impact of this variable is negative. Additionally, with the prosperous development of the new venture, failure has a smaller impact, meaning that it is at lower stages where learning from failure can actually facilitate future success.

2.3 New Venture Performance Measures

New venture performance is challenging to measure due to the inherent changes of business activities in early stages (Jo and Lee 1996), but also due to the diversity of entrepreneurial ventures characterized by different scale and potential. Little attention has been given to the performance metrics that can appropriately evaluate a startup.

Murphy et al. (1996) research focused on analyzing the actual use frequency of different performance measures of entrepreneurial ventures and small businesses, and on fully examining the use of those measures in entrepreneurship research.

Performance measurement studies are born from organization theory and strategic management conceptualizations. Regarding the organization theory models, (1) the goal-based approach is based on an evaluation of the goals that organizations set for themselves, increasing the difficulty of cross-firm comparisons. (2) The systems approach includes the simultaneous achievement of multiple performance aspects, and (3) the multiple constituency approach studies the extent to which the stakeholder groups are satisfied. Strategic research, taking into account the previous approaches, developed three constructs. The first construct is related with the financial performance measures, being at the core domain of organizational effectiveness. Operational performance measures, such as market share, are the second construct. Considering the financial measures are not sufficient to define the global effectiveness, these help to define a broader conceptualization of performance. Lastly, another approach considers performance measurement through multiple constituencies.

Murphy et al. (1996) examined a sample of 51 published entrepreneurship studies, from 1987 to 1993, using performance as the dependent variable. Combining the analysis of all researches, seven dimensions of performance measures were defined: (1) Efficiency, for instance Return On Assets (ROA) and Return On Equity (ROE), (2) Growth, such as Market Share growth and Change in employees, (3) Profit, such as Return on Sales and Gross Profit Margin, (4) Size liquidity, as Sales level and Cash flow level, (5) Failure, (6) Market share, (7) Leverage, such as Debt-to-Equity, and others. The following conclusions were drawn: (1) organization performance has been estimated through multiple disparate measures and (2) these measures cover multiple dimensions of firm performance. However, (3) not many of the studies included measures of more than one or two dimensions. In fact, from the frequency analysis, they concluded that the majority of studies solely considered financial measures as performance metrics for entrepreneurial ventures and small businesses. In order to reach a further level of detail, Murphy et al. (1996) were able to validate that cross-sectional studies established ROA as a more conservative performance measure relatively to ROE, meaning that positive effects on ROA can be transposed to ROE, but the reverse is not possible. In longitudinal studies, neither of these measures may safely be generalized to the other, considering it is likely that the capital structure of a firm changes over time.

Clearly, the studies evaluating relationships between an independent variable and organization performance depend on the measures chosen. It is largely supported the fact that using only one dimension, or even one metric, it is not enough to reach accurate results about performance outcomes and their sources. Thus, it is better to recognize multiple dimensions of performance. Jo and Lee (1996) used variables to measure profitability and growth, Return on Assets, on Sales and on Employees, Growth Rate of Assets and Growth Rate of Employees. Bosma et al. (2004), while investigating a set of Dutch founders, defined three measures of entrepreneurial performance: (1) Profit, individual level measure; (2) Cumulative Employment created in a defined period, to capture the effect in a society level; and (3) Survival Mode, considering the months a firm was active. Besides the survival variable that was already pointed out by other authors, Delmar and Shane (2004) used sales to demonstrate the effects of the founding team experience. There is also an argument defending that, since startups usually initiate their business without any profit, using the break-even point is the correct measure because it demonstrates the evolution of the business at an early stage (Oe and Mitsuhashi 2013).

Chapter 3 | Methodology

3.1 Research Method

In this study I will empirically assess how the background of startup founders influences the performance of new ventures in Portugal.

Considering the aforementioned research purpose, the most suited research method consists of collecting primary data, which was gathered through an online questionnaire. This questionnaire consisted of 35 questions, in English, targeted to Portuguese startup founders, and was supported by the Qualtrics platform. This technique of gathering primary data is among the most widely used, and it was the most appropriate for this study because it allowed me to have control over the targeted segment, the response time of the entrepreneurs and send the necessary reminders to complete the survey to the startup co-founders. Additionally, the collected data was automatically uploaded into the data analysis software – SPSS -, which allowed the drawing of accurate conclusions.

Concerning the data collection process, first I gathered the email contacts from Portuguese investment and incubation entities' websites. I took into consideration three criteria in selecting the startups: (1) they had to be founded by Portuguese entrepreneurs, (2) the startups needed to act in the technology industry and (3) the sample had to be composed of entrepreneurial ventures which had to already have raised funding at least one time. Secondly, the survey was emailed to one of the co-founders of each startup, explaining the purpose of the study and other details required to fully complete the survey. In total 250 emails were sent, which represented approximately half of the accounted Information and Communication Technology startups in Portugal (Startup Europe Partnership Monitor 2015). After a nine-wave emailing (i.e., eight reminders and three additional phone-based reminders), 45 completed questionnaires were turned in, which converts into an effective response rate of 18%.

This research aims to make several contributions to the already growing studies on the predictors of new venture performance. I believe that the ability to evaluate the prospects of a new venture from an early stage presents a number of advantages to both entrepreneurs and their supporters. In this sense, and in order to verify that the power of the study is strong and statistically significant to justify the consequent results and conclusions (Lachin 1981), a sample size calculation was needed. Suresh and Chandrashekara (2012) presented a formula to calculate the sample size that is able to be statistically and scientifically representative of the

population, also widely employed in research papers. The sample size can be estimated using the following formula[1]:

$$N = \frac{Z^2_{\alpha/2} * P * (1-p) * D}{E^2}$$

Zα/2	For 5% level of significance, Zα/2 = 1.96
D	Considering a simple random sampling, D=1
E	Generally used E=5%
P	Given no previous study reported this element, I tried 3 values: (1) P=50% (2) P=20% (3) P=10%

$$N = \frac{1.96^2 * 0.5 * (1-0.5) * 1}{0.05^2} = 385$$

$$N = \frac{1.96^2 * 0.2 * (1-0.2) * 1}{0.05^2} = 246$$

$$N = \frac{1.96^2 * 0.1 * (1-0.1) * 1}{0.05^2} = 139$$

Figure 1: Calculation of the sample size, adapted from Suresh and Chandrashekara (2012)

In order to assure a conservative scenario (P=50%), it would be required a sample of 385 respondents. However, this value is higher than the population of Portuguese tech startups, which becomes an *a priori* limitation to this study. The Portuguese startup scene is rapidly emerging on the European startup map. However, given the newness of the ecosystem, the numbers of startups and scale-ups in Portugal are still significantly lower than the ones from the US, UK, Germany, Italy, among others. Hence, I decided to shift my analysis method to perform T-tests to variables that were either selected in accordance to previous studies, or that provided a statistically significant result. This test compares the means of two independent groups in order to evaluate whether there is statistical evidence to conclude that the associated population means are significantly different (bilateral or unilateral). For testing purposes, each independent variable was indicated by a yes or no response. Dummy variables were used to represent these responses with yes coded as one and no coded as zero.

[1]

- *Zα/2* is normally deviated for two-tailed alternative hypothesis at a level of significance;
- *P* is the prevalence or proportion of event of interest for the study. This element can be estimated at 50%, meaning that the impact is expected to be in 50% of the population. A P of 50% is a conservative estimate;
- *E* is the Precision, or margin of error, with which a researcher want to measure something. Generally, E will be 10% of P;
- *D* is the design effect which reflects the sampling design used in the survey. For simple random sampling, D=1, for other designs, such as stratified, systematic, cluster random sampling, D can have higher values, until 2.

3.2 Questionnaire composition

The questionnaire is composed of seven different parts. Some questions could be answered by one of the founders, however the majority required information pertaining to all members of the founding team. The questionnaire's full content is presented in Appendix 2.

The first part of the questionnaire was used to collect general information about the founding team and the startup. The second part consisted on assessing the education level of each founder including not only questions regarding their educational background, but also questions concerning the mentorship of the startup. The third part included a single question essential to determine the continuation of the survey: "How many founders have worked in other organization(s) before founding the current startup?". In case none of the founders had had previous working experience, the questionnaire would end. In the fourth part, the managerial experience of the founders was the variable to be explored, meaning that questions were displayed to assess quantitatively and qualitatively their previous working experience from a managerial perspective. The fifth part continued to explore the founders' previous work experience, but now targeted to assess their industry experience, i.e. areas of expertise, type of previous organization and similarity with current startup business. The sixth part considered their entrepreneurial experience, exploring in more detail the former entrepreneurial ventures characteristics. Lastly, the seventh part was dedicated to measure the performance of the startup along the first development phases, based on certain criteria: EBITDA, Revenues and Profit. Considering that the startup business constantly suffers alterations regarding its type of business, target segments, among others, I finished the questionnaire with an open question for the founders to provide any further information they considered relevant for the study.

Research variables

The definition of the variables obtained from the questionnaire and used in the results' analysis is present in Figure 2 below. Throughout the survey, there were five main constructs to be evaluated. Each one was assessed by asking participants to answer multiple-choice questions, some of them adapted from previous studies.

Classification	Name of the variable	Definition
Dependent variables	AbsGrowthExploy	Absolute growth in employment from t0 (funding moment) until t1 (nowadays)
	TimeVC	The time that took to raise Venture Capital
	InvestRaised	The amount of money that the startup raised until today
	Masters_Edu_Level	At least one of the founders has a Masters' Degree

Independent variables	Edu_Mentor_1year	The team has had a mentor for at least one year
	ManagerExp_FS1	At least one of the founders has managerial experience, and the startup is at pre-seed stage
	LeaderExp_AT1 LeaderExp_AT2 LeaderExp_AT3	At least one of the founders has leadership experience, and the startup is active for (1) less than 1 year (2) less than 2 years or (3) more than 2 years
	SelfEmployExp	At least one of the founders has had a self-employment experience
	SimilarIndustry	At least one of the founders has had experience in a similar industry
	IT_AT2	At least one of the founders has had experience in IT, and the startup is active for less than 2 years
	BusinessDev_AT2	At least one of the founders has had Business Development experience, and the startup is active for less than 2 years
	MarketingSales_AT3	At least one of the founders has had Marketing and Sales experience and the startup is active for more than 2 years
	StartupTeam	At least one of the founders has had an entrepreneurship experience in a startup team
	FounderStartups	At least one of the founders founded a startup before

Figure 2: Definition of the study variables
Source: Questionnaire

3.3 Population and Sample

The statistical population of interest for this study was defined as Portuguese startup founders of technological startups.

I received 79 responses to the questionnaire, but 34 of those were eliminated due to the incomplete submission of the survey. In order to address the aforementioned research questions, a usable sample of 45 Portuguese startups was used.

Initial data analysis focused on characterizing the sample under study. To this end, frequency and distribution tests were run (see Appendix 3). The majority of the respondent startups have two founders (44.4%) and approximately 76% of them have no women in the founding team. From these new ventures, 60% operate in the technology industry, 13% do business in the Life Science and Med Tech sector, 7% is from the Travel and Leisure Tech sector, being the last 20% from diversified industries (such as Marketing, Consulting, Education Tech, Gaming, Sports and Fashion Tech). Regarding the monetization model of the business they operate in, 67% are in Business-to-Business (B2B), and the second highest percentage (31%) work in

Business-to-Consumer (B2C). Considering this panel of startups, more than half of them (62%) have been active for 2 years or less. This is consistent with the lifecycle stage that they integrate, which is mostly seed (53%) and pre-seed (27%). Only two startups in this sample are in late stage, meaning C Round or Mezzanine level. 25 of the total of startups have 50% or more of their business in Portugal. From the 14 new ventures based abroad, 8 are based in Europe, 4 in the United States of America. When considering the 31 startups based in Portugal, the majority of them are registered in the Lisbon and Oporto districts.

Chapter 4 | Results and Discussion

4.1 Results of preliminary data analysis

Initial data analysis of the variables focused on running frequency and distribution tests. From the 105 founders, more than half (52%) indicated having a Masters' degree regarding their formal education background. Nearly 70% of them studied applied sciences, such as computer science. Just over 44% of these founders reported having prior managerial experience. Only 19% revealed having a self-employment experience, and 50% have worked in a similar industry of their current startup. 36 founders revealed that were part of a startup team before, and from these, 78% only had that experience one time. Lastly, 42 entrepreneurs revealed having founded a new venture, with an average of 1.5 previous launches.

4.2 Empirical Results and Analysis of the Hypotheses

The purpose of this empirical investigation is twofold. First, it provides evidence to evaluate the validity of the questionnaire-based forecast outcomes used in this study. Second, it allows the observation of potential differences, and even new findings, regarding the impact of the independent variables on new venture performance. The descriptive statistics for the variables used in the analyses, as well as the Pearson correlation coefficients are shown in Appendix 4. Additionally, more detailed tables regarding the results of the independent t-tests are in Appendix 5.

Relationship between Education variables and Performance of the New Venture

In order to validate Hypothesis 1, an independent t-test was performed. The p-values of unilateral testing, from the three tests, were above 0.05. Thus, on average, there is no difference in the performance of the startups where at least one of the founders has a Masters' Degree or not. Results are summarized in Figure 3

	AbsGrowthEmploy	TimeVC	InvestRaised
Masters_Edu_Level	p-value = 0.258/2 = 0.13	p-value = 0.775/2 = 0.39	p-value = 0.103/2 = 0.052

Figure 3: Independent t-test for Masters_Edu_Level
Source: Survey data

This result is consistent with previous studies, where the education level did not demonstrate a significant relationship with performance measures, neither economic nor non-economic (Colombo and Grilli 2010; Haynes 2003; Gimeno et al. 1997; Jo and Lee 1996; Dyke et al. 1992). However, this result should not lead to the automatic conclusion that education is

irrelevant for the success of the startup. Education is one of the factors that shape the individual perspectives of entrepreneurs, next to individual abilities and traits. Nevertheless, as the startup becomes more developed, this variable may explain less of a venture's performance. Education is seen as the basis, while other experiences are complementary and essential for a successful entrepreneurial outcome (Chandler et al. 1992; Chandler et al. 1994, cited in Haynes 2003).

In an attempt to perform further research on this topic, I questioned the startup team regarding the existence of a mentor and the length of the mentorship. Cooper et al. (1994) mentioned benefits associated with the presence of these, such as a broader range of management expertise, psychological support and an external judgment which may be helpful for the success of the new venture. I investigated whether, on average, the performance of the new venture was higher if the team had a mentor for at least one year. First, I coded one if the startup team had a mentor for at least one year, and zero otherwise, to create a dummy variable. Secondly, I used an independent t-test and the results are displayed in Figure 4. The p-values obtained demonstrate that this hypothesis is statistically supported when testing for the time that the startup took to raise Venture Capital (p-value=0.045 < 0.05). Thus a new relationship was discovered.

	AbsGrowthEmploy	TimeVC	InvestRaised
Edu_Mentor1year	p-value = 0.154/2 = 0.08	p-value = 0.089/2 = 0.045	p-value = 0.217/2 = 0.11

Figure 4: Independent t-test for Edu_Mentor1year
Source: Survey data

Relationship between Working Experience and Performance of the New Venture

In what concerns Hypothesis 2, according to the majority of studies, management know-how *per se* weakly affects the performance of a new venture. However, it was also hypothesized that the exception was when the firm raised the initial capital (Cooper et al. 1994). In this sense, a new variable was created where I coded as one the startups where at least one of the founding members had management experience and the new venture was at the pre-seed stage, and zero otherwise. An independent t-test was conducted and the results are presented in Figure 5. I am able to conclude that the null hypothesis is rejected when testing with two of the dependent variables. This means that Hypothesis 2 is statistically supported.

	AbsGrowthEmploy	TimeVC	InvestRaised
ManagerExp_FS1	p-value = 0.081/2 = 0.04	p-value = 0.510/2 = 0.26	p-value = 0.044/2 = 0.022

Figure 5: Independent t-test for ManagerExp_FS1
Source: Survey data

In preliminary tests of the Hypothesis 3, the independent variable (leadership experience) failed to exhibit any significant relationship with either one of the outcome measures. However, in order to examine possible differences of the impact of leadership experience associated with the active period of the startup, further tests were conducted. The reasoning behind was the following: considering that the startup will be in the market for a long period, the team will have more employees to manage, therefore, the leadership abilities of each founder will be more relevant to organize, motivate and lead the company towards a successful performance. In order to empirically prove this rational, I formulated three new dummy variables: At least one of the founders has had leadership experience and the startup was active for equal or less than 1 year (LeaderExp_AT1); At least one of the founders has had leadership experience and the startup was active for equal or less than 2 years (LeaderExp_AT2); At least one of the founders has had leadership experience and the startup was active for equal or more than 2 years (LeaderExp_AT3). The results of the independent t-tests performed are presented in Figure 6. It can be concluded that the following two results are statistically significant: (1) when the startups are active for a longer period, the impact of the leadership experience of the founders in the performance measures of the startups is positive and (2) in startups that were founded less than 1 year ago, the leadership experience of the founders can have a positive impact as well. Hence, the Hypothesis 3 was proved, especially when the startup is at the beginning of its life, or if it already has more than 2 years.

	AbsGrowthEmploy	TimeVC	InvestRaised
LeaderExp_AT1	p-value = 0.089/2 = 0.045	p-value = 0.011/2 = 0.006	p-value = 0.006/2 = 0.003
LeaderExp_AT2	p-value = 0.238/2 = 0.12	p-value = 0.598/2 = 0.299	p-value = 0.857/2 = 0.43
LeaderExp_AT3	p-value = 0.002 = 0.001	p-value = 0.001/2 = 0.0005	p-value = 0.003/2 = 0.002

Figure 6: Independent t-test for LeaderExp_AT
Source: Survey data

Relationship between Industry Experience and Performance of the New Venture

When running independent t-tests for Hypothesis 4, the results demonstrated that the null hypothesis is rejected when testing with Absolute Growth in Employment. So, on average, the

performance of the new venture is higher if at least one of the founders has had a self-employment experience. The results are displayed in Figure 7. This finding confirms what has been argued in the literature, Colombo and Grilli (2010) and Brüderl et al. (1992) demonstrated that founders with self-employment experience were significantly less likely to fail.

	AbsGrowthEmploy	TimeVC	InvestRaised
SelfEmployExp	p-value = 0.034/2 = 0.017	p-value = 0.484/2 = 0.242	p-value = 0.721/2 = 0.36

Figure 7: Independent t-test for SelfEmployExp
Source: Survey data

Following the empirical literature, it is consensually argued that experience in a similar industry of the current new venture is highly valuable for the new venture performance (Hypothesis 5). An independent t-test was performed, and the results are displayed in Figure 8. It is proved that, in accordance with Dimov (2010), Haynes (2003) and Brüderl et al. (1992), on average, the performance of the new venture is higher if at least one of the founders has had experience in a similar industry. Thus, the Hypothesis 5 is statistically supported.

	AbsGrowthEmploy	TimeVC	InvestRaised
SimilarIndustry	p-value = 0.603/2 = 0.30	p-value = 0.029/2 = 0.015	p-value = 0.560/2 = 0.28

Figure 8: Independent t-test for SimilarIndustry
Source: Survey data

Hypothesis 6 and 7 follow the same reasoning, and in a first approach, neither the independent variable "At least one of the founders has IT experience", nor "At least one of the founders has Business Development experience" exhibit a significant relationship with either of the three outcome measures. However, this sample was composed by a group of technology startups, and looking at the functional positions experience, the majority of them identified Information Technology and Business Development. Hence, I decided to test possible differences of the impact of experience in IT and Business Development functional areas, associated with the active period of the startup. I formulated new dummy variables: At least one of the founders has IT experience and the startup is active for less than 2 years; and At least one of the founders has Business Development experience and the startup is active for less than 2 years. The independent t-tests were conducted and the results are presented in Figure 9. Both tests are statistically significant for the performance measures "Absolute Growth in Employment" and "Amount of Investment Raised", meaning that, on average, the performance of the new venture

is higher if at least one of the founders has had experience in the IT and Business Development functional areas and if the startup has been active for less than 2 years.

	AbsGrowthEmploy	TimeVC	InvestRaised
IT_AT2	p-value = 0.002/2 = 0.001	p-value = 0.454/2 = 0.227	p-value = 0.002/2 = 0.001
BusinessDev_AT2	p-value = 0.016/2 = 0.008	p-value = 0.490/2 = 0.245	p-value = 0.038/2 = 0.019

Figure 9: Independent t-test for IT and BusinessDev
Source: Survey data

Following the previous hypothesis' reasoning, and in an attempt to perform further research on this topic, I decided to investigate whether, on average, the performance of the new venture was higher if at least one of the founders had Marketing and Sales experience and the startup was active for more than 2 years. I believe this is a relevant subdivision since depending on the stage of the startup lifecycle, founders have to apply certain capabilities and demonstrate some areas of expertise. After the period of developing the product or service, they need to capture clients and engage investors in the business, thus, Marketing and Sales know-how is highly valuable in this phase. The results of the conducted independent t-test are displayed in Figure 10. The p-values obtained demonstrate that this hypothesis is statistically supported when testing for two of the outcome measures. Thus a new relationship was discovered.

	AbsGrowthEmploy	TimeVC	InvestRaised
MarketingSales_AT3	p-value = 0.056/2 = 0.028	p-value = 0.740/2 = 0.37	p-value = 0.001/2 = 0.0005

Figure 10: Independent t-test for Marketing and Sales
Source: Survey data

Relationship between Entrepreneurial Experience and Performance of the New Venture

Since prior entrepreneurial experience may be associated with the performance of the new ventures, an independent t-test was used to test the Hypothesis 8. The results are presented in Figure 11. This hypothesis was not supported, since the p-value in either one the three outcome measures is higher than 0.05.

	AbsGrowthEmploy	TimeVC	InvestRaised
StartupTeam	p-value = 0.857/2 = 0.43	p-value = 0.986/2 = 0.49	p-value 0.424/2 = 0.212

Figure 11: Independent t-test for StartupTeam
Source: Survey data

The literature is divided regarding the impact of the independent variable of Hypothesis 9. I employed an independent t-test to verify if the established hypothesis was statistically supported. However, it did not show any significant p-values. The results are displayed in Figure 12. In this sample of startup founders, previous experiences in founding new ventures did not influence the performance of the startup. Thus, Hypothesis 9 is not supported. Additionally, further unreported tests were conducted, and this conclusion extends to several startups founded and several active startups.

	AbsGrowthEmploy	TimeVC	InvestRaised
FounderStartup	p-value = 0.262/2 = 0.131	p-value = 0.778/2 = 0.39	p-value = 0.867/2 = 0.43

Figure 12: Independent t-test for Founderstartup
Source: Survey data

Some authors demonstrated the positive impact of these variables in the management know-how, and consequently on the performance of new ventures, arguing that entrepreneurs acquire knowledge about firm organization in general, which potentially leads to a higher performance (Delmar and Shane 2006, Gimeno et al. 1997). On the contrary, Cassar (2012) found no support for startup experience to improve the founding team performance forecast, and it was also empirically confirmed that prior entrepreneurial experience does not influence the quickness to reach the break-even of the firm. I believe more detailed data is required in order to establish an accurate conclusion regarding this variable.

Chapter 5 | Conclusion

5.1 Main insights

In a world with such dynamic growth as the entrepreneurship one, it is critical for investors and entrepreneurs, among other players, to understand what are the variables pertaining to the background of startup founders that have a higher impact on the performance of the new ventures. In order to answer to the main research question, this study must overcome some methodological limitations of prior research, as well as explore potential new effects that add value to the researches on this topic. I do not mean to suggest that the variables considered here are the only ones with a significant impact on the performance of the new ventures, since I focused this study on the human capital of entrepreneurs. Nevertheless, the variables selected are easy to access, with barely any constraints regarding confidentiality, and some of them had been proved to be a relevant contribution for the startup progress. I demonstrated that the bigger the human capital of entrepreneurs, the higher their chances to succeed. In this study several results are worth highlighting.

Firstly, the independent variables which provide a considerable understanding about the performance of the startup are the existence of a mentor, management experience, leadership experience, IT and Business Development functional area know-how, Marketing and Sales expertise, self-employment experience, and lastly, experience in a similar industry. It is possible to assemble the variables into two groups, management related (the first six variables, since they are correlated with each other) and work experience related (last two variables). The independent variables which did not demonstrate a significant effect on the performance of the startup are the education level, experience in a startup team, and experience in founding new ventures. The results regarding the entrepreneurial experience need to be interpreted cautiously for two reasons. One is that it does not mean that entrepreneurial skills, obtained whether as a founder of previous startups or as a team member, are useless. It should be considered (1) the circumstances surrounding the new business, for instance the level of similarity with the previous ventures might not represent a valuable and significant know-how to be applied to the new business, (2) that the amount of entrepreneurial experience might offer just the conditions necessary to survive and not to succeed (Delmar and Shane 2006), and (3) that the selected measures do not capture successful founding experiences and failures, which potentially add more information and lead to a more accurate result. The other reason is that these analyses were performed on the basis of short-term observation. The fact is that, as time passes, the

aspects of the background of entrepreneurs may work differently, which results in other levels of performance (Jo and Lee 1996).

Secondly, this research focuses on the analysis of startups relatively young, considering multiple measures of performance, both economic (absolute growth in employment) and non-economic (time to raise venture capital and amount of investment raised). This approach enabled me to test and identify the best predictors of the new venture's growth and to explore the differences between the three outcome measures.

Thirdly, given that I only selected startups of technological nature, the results obtained ensure a high degree of representativeness. Thus, they can be generalized for a larger population with similar characteristics.

5.2 Academic Implications

Rather than a single outline for success of technological entrepreneurs, I introduce a scheme about how some of the human capital factors drive new venture performance according to the context of financial stage or active time of the startup.

The primary theoretical implication is the creation of arguments for the role of different experiences on entrepreneurial performance prediction. Previous researches did not provide a universal conclusion regarding the education level variable. Despite the fact that the results obtained reveal a non-significant impact, which is in accordance to the studies, the lack of context might lead to a wrong interpretation. Ignoring this variable is wrong, since its effect might not be directly on the economic performance of the new venture, but rather on the type of decisions and motivation of the entrepreneur and organization of the company. In addition, one of the contributions of this study concerns the complementary variable that might overcome the gap of the education level in the initial years. Having a team mentor has proved a valuable factor to increase the performance of the business. Additionally, concerning the industry experience, this variable is consistently supported by researchers stating that is has a positive influence on the performance, particularly in one of the outcome measures related with venture capitalists. I confirmed that Information Technology expertise increases the performance of the new ventures in the initial years (Colombo and Grilli 2010), but I also contributed to the literature since I found evidence that (1) Business Development experience is important in the first years and (2) Marketing and Sales know-how leads to a higher performance in a later stage of development. In this study I concluded that entrepreneurial experience is not related to a higher performance of the new venture.

Lastly, prior research shows that entrepreneurs with greater experience start more successful ventures. The performance measures, venture capital-related and employment-based, from this study confirm this relation. This research is among the first to use venture capital-related measures. The reasoning behind is that VC is the primary source of funding which leads to a bigger potential growth of the firm. Therefore, all the background of entrepreneurs will influence the first contact with investors and the further development of that relationship. The better they deal with VCs, most likely, the higher the success. Hence, future research should examine in more detail the relationships obtained.

5.3 Practical Implications

As a general practical implication of this research, the founders' experience should be interpreted in the current context in which the new ventures are embedded, either the industry, the active time of the startup, among others. This study has additional implications for investors, educators, researchers, incubation and acceleration' entities and entrepreneurs. Firstly, when analyzing founders' curriculums, investors should consider as relevant, when evaluating a business opportunity, previous management, industry, self-employment experience, as well as certain functional areas know-how. Secondly, educators need to bear in mind that programs which provide knowledge about specific industries and startup work are of great value. Thirdly, incubation and acceleration' entities need to become aware of developing more management-related skills, as well as marketing and sales expertise, in order to provide a better support for firm growth. Lastly, entrepreneurs can become more aware of the potential advantages of certain know-how, therefore, they can direct their efforts into developing certain skills and knowledge, depending also on the stage and the needs of the startup.

5.4 Limitations and Future Research

There are some empirical limitations to this research. In the first place, the sample is restricted to a low number of startups, uniquely from the technology industry, which may condition the universalization of the conclusions. Thus, future research should take into consideration a cross-industry comparison, which would be valuable to understand some of the differences that these background variables have over different contexts.

Another limitation is related with the data availability, particularly regarding financial performance measures. There were some restrictions when gathering data to analyze this dimension. Additionally, given the time constraints, it was only possible to collect data from two points in time. Hence, it would be enlightening to replicate this study using at least one

financial dependent variable, and have observations over some periods of time. Also, a longer time period encompasses the effect of different growth speed of diverse industries.

Although the independent variables considered are similar to those utilized in much of the research to date, this study lacks the measurement of specific skills, behaviors, talents, networking, family influences, among other factors that directly influence performance. Though the selected variables are visible, accountable and easy to access, future research can move beyond to examine other specific influences and cognitive processes that may be related to entrepreneurial performance.

Lastly, given that hypothesis testing was used to analyze the collected data, it was not possible to include control variables that are relevant to obtain accurate conclusions, particularly when using regression models. Therefore, further research work is needed to analyze the information with a different methodology that includes control variables such as number of founders, monetization model, location, seasonality of business, and others.

In summary, despite the limitations and necessary steps in future research, the primary contribution of this thesis was to develop an empirical study based on Portuguese startups that allowed the identification of the entrepreneurs' background factors that have a higher impact on the performance of the new ventures. Consequently, this enables several players of the entrepreneurial ecosystem to better understand which skills, knowledge and experience most likely lead to a higher performance of the startup.

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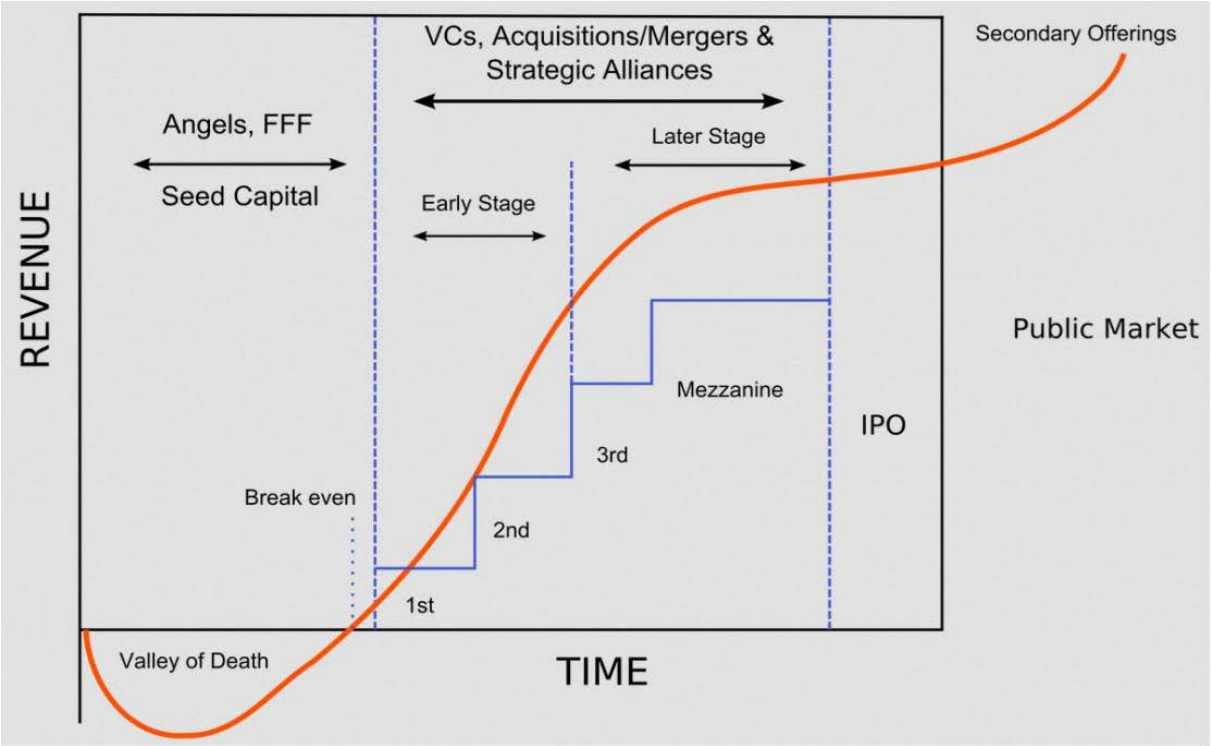
Appendices

Appendix 1: The startup lifecycle



Source: NetValley

Appendix 2: Online Questionnaire

*English

Dear Participant,

On behalf of my Masters Dissertation at Católica-Lisbon School of Business and Economics, this questionnaire aims to assess the relationship between the background of startup founders and the performance of new ventures, in Portugal. The collected information will remain anonymous and it will be treated strictly confidentially, used only for study purposes. I kindly ask you to answer as honestly and accurately as possible. The questionnaire will take no longer than 6 minutes.

Thank you in advance for your time and availability to collaborate.

*Portuguese

Caro Participante,

No seguimento da minha Tese de Mestrado na Católica-Lisbon School of Business and Economics, este questionário tem como objectivo compreender a relação entre o background dos fundadores de startups e a performance das mesmas, em Portugal. Toda a informação recolhida será anónima e confidencial, utilizada apenas em contexto académico. Peço-lhe para responder honestamente a todas as questões. O questionário terá a duração máxima de 6 minutos.

Agradeço, desde já, a sua participação.

PART I. GENERAL INFORMATION OF THE FOUNDERS AND STARTUP

1.1 How many (co-)founders has the startup?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ More than 3 (4)

1.2 Gender of (co-)founders

_____ Male (1)
_____ Female (2)

1.3 What is the stage of your startup?

- ❍ Pre-seed (1)
- ❍ Seed (2)
- ❍ A-B round / Early Stage (3)
- ❍ C round or Mezzanine / Late stage (4)

1.4 At founding, what was the number of unique functional positions (marketing and sales, business development, product, operations, among others)?

1.5 For how long is the startup active (moment that founding team gather together and started working on the business)?

- ❍ Less than 6 months (1)
- ❍ Between 6 months and 1 year (2)
- ❍ Between 1 year and 2 years (3)
- ❍ Between 2 years and 3 years (4)
- ❍ More than 3 years (5)

1.6 Nowadays, what was the total number of employees?

1.7 The startup is:

- ❍ B2B (1)
- ❍ B2C (2)
- ❍ B2G (3)

1.8 What is the type/industry of the startup?

- ❍ Technology (1)
- ❍ Life Sciences & Med Tech (2)
- ❍ Travel and Leisure Tech (3)
- ❍ Other (4) _____

1.9 What is the business percentage done in:

_____ Portugal (1)
_____ Abroad (2)

1.10 Does the startup has a base abroad?

- ❍ Yes (1)
- ❍ No (2)

1.11 Where is the startup based abroad?

- ❑ Europe (1)
- ❑ USA (2)
- ❑ Canada (3)
- ❑ Central or South America (4)
- ❑ Asia (5)
- ❑ Africa (6)

1.12 What is the district where the startup is legally based in Portugal?

- ❑ Aveiro (1)
- ❑ Beja (2)
- ❑ Braga (3)
- ❑ Bragança (4)
- ❑ Castelo Branco (5)
- ❑ Coimbra (6)
- ❑ Évora (7)
- ❑ Faro (8)
- ❑ Guarda (9)
- ❑ Leiria (10)
- ❑ Lisboa (11)
- ❑ Portalegre (12)
- ❑ Porto (13)
- ❑ Santarém (14)
- ❑ Setúbal (15)
- ❑ Viana do Castelo (16)
- ❑ Vila Real (17)
- ❑ Viseu (18)
- ❑ Açores (19)
- ❑ Madeira (20)

PART II. GENERAL ASSESSMENT

2.1 Please tell us about your experience by indicating how important that attribute is to you.

	Founder 1					Founder 2					Founder 3				
	Completely Disagree	Somehow Disagree	Neither Agree nor Disagree	Somehow Agree	Completely Agree	Completely Disagree	Somehow Disagree	Neither Agree nor Disagree	Somehow Agree	Completely Agree	Completely Disagree	Somehow Disagree	Neither Agree nor Disagree	Somehow Agree	Completely Agree
If I work hard, I can successfully start a business.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Starting a business is much more desirable than other career opportunities.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Starting a business helps me achieve other important goals in my life.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Overall, my skills and abilities helped me starting a business.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
My past experience is highly valuable in starting a business.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am confident I can put in the effort needed to start a business.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

PART III. EDUCATION LEVEL

3.1 What is your Education Level?

	Founder	Founder	Founder
	Founder 1	Founder 2	Founder 3
Elementary school or Middle school (1)	❑	❑	❑
High school (2)	❑	❑	❑
Professional school (3)	❑	❑	❑
Bachelor (4)	❑	❑	❑
Masters (5)	❑	❑	❑
PhD (6)	❑	❑	❑

3.1.1 If you selected an Education Level HIGHER than High School, please continue to the next set of questions. If you selected an Education Level EQUAL OR BELOW High School, please skip only the next question.

3.2 What is the branch of science of your education?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Humanities (history, literature, philosophy, etc) (1)	❑	❑	❑
Social Sciences (business administration, economics, psychology, etc) (2)	❑	❑	❑
Natural Sciences (biology, physics, chemistry, etc) (3)	❑	❑	❑
Formal Sciences (math, statistics, logic, etc) (4)	❑	❑	❑
Applied Sciences (medicine, computer science, etc) (5)	❑	❑	❑

3.3 Have you taken any classes or workshops on to start a business?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Yes (1)	❑	❑	❑
No (2)	❑	❑	❑

3.4 The team has a mentor for this startup?

- ❍ Yes (1)
- ❍ No (2)

3.4.1 For how long does the team has a mentor?

- ❍ Less than 6 months (1)
- ❍ Between 6 months and 1 year (2)
- ❍ Between 1 year and 2 years (3)
- ❍ More than 2 years (4)

KEY How many founders:

_____ Have worked in other organization(s) before founding the current startup? (1)
_____ Have no previous working experience (2)

PART IV. MANAGERIAL EXPERIENCE

4.2 For how long have you worked in other organization(s)?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Less than 1 year (1)	❑	❑	❑
From 1 to 2 years (2)	❑	❑	❑
From 2 to 5 years (3)	❑	❑	❑
More than 5 years (4)	❑	❑	❑

4.3 Classify your experience(s):

_____ Founder 1 (1)
_____ Founder 2 (2)
_____ Founder 3 (3)

4.4 Which position did you hold?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Founder of a startup (1)	❑	❑	❑
Less than Manager Position (2)	❑	❑	❑
Manager Position (3)	❑	❑	❑
More than Manager Position (4)	❑	❑	❑

4.5 Do you have any leadership experience?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Yes (1)	❑	❑	❑
No (2)	❑	❑	❑

PART V. INDUSTRY EXPERIENCE

5.1 Have you had any high growth experience (number of employees or sales increases over 25%)?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Yes (1)	❑	❑	❑
No (2)	❑	❑	❑

5.2 How was your work experience prior this new venture?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Self-Employed (1)	❑	❑	❑
Employment size of previous establishment was a small firm ((2)	❑	❑	❑
Employment size of previous establishment was a medium firm (50-249 employees) (3)	❑	❑	❑
Employment size of prior establishment was a large firm (>250 employees) (4)	❑	❑	❑

5.3 How similar is the industry of this business compared with the industry of your last employer, in terms of service/product, clients and suppliers?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Completely Different (1)	❑	❑	❑
Somehow Different (2)	❑	❑	❑
Somehow Similar (3)	❑	❑	❑
Very Similar (4)	❑	❑	❑

5.4 In which functional areas do you have experience?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
Sales and Marketing (1)	❑	❑	❑
General Administration (2)	❑	❑	❑
Human Resources (3)	❑	❑	❑
R&D/ Technology Development (4)	❑	❑	❑
Business Development (5)	❑	❑	❑
Finance and Accounting (6)	❑	❑	❑
Operations and Logistics (7)	❑	❑	❑
Other (8)	❑	❑	❑

PART VI. ENTREPRENEURIAL EXPERIENCE

6.1 How many times have you been part of a startup team (excluding as a founding member)?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
None (1)	❑	❑	❑
1 (2)	❑	❑	❑
2 (3)	❑	❑	❑
3 (4)	❑	❑	❑
More than 3 (5)	❑	❑	❑

6.2 How many startups have you (co-)founded, except the present one?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
None (1)	❑	❑	❑
1 (2)	❑	❑	❑
2 (3)	❑	❑	❑
3 (4)	❑	❑	❑
More than 3 (5)	❑	❑	❑

6.3 If you answered more than NONE in the previous question: How many are still active?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
None (1)	❑	❑	❑
1 (2)	❑	❑	❑
2 (3)	❑	❑	❑
3 (4)	❑	❑	❑
More than 3 (5)	❑	❑	❑

6.4 If you answered that you have founded other startups (excluding the present one),How many have positive cash-flows?

	Founder	Founder	Founder
	Founder 1 (1)	Founder 2 (1)	Founder 3 (1)
None (1)	❑	❑	❑
1 (2)	❑	❑	❑
2 (3)	❑	❑	❑
3 (4)	❑	❑	❑
More than 3 (5)	❑	❑	❑

PART VII. PERFORMANCE MEASURES

7.1 What is the amount of money that you have raised so far?

- ❍ Less than 50K € (1)
- ❍ More than 50K € (Reference values Pre-Seed stage) (2)
- ❍ Less than 200K € or 250K € (Reference values Seed stage) (3)
- ❍ Less than 750K € or 1Million € (Reference values Series A) (4)
- ❍ More than 1Million € (5)

7.2 How long did it take to receive Venture Capital?

- ❍ Less than 6 months (1)
- ❍ Between 6 months and 1 year (2)
- ❍ Between 1 year and 2 years (3)
- ❍ More than 2 years (4)

7.3 Please complete the following table (only use number, do not use money symbols):

	First 6 months of activity (from start selling) (1)	First year of activity (from start selling) (2)	Last Financial Year (3)
EBITDA (1) Revenues (2) Sales (3) Profit (4)			

7.4 Please complete the following table (only use number, do not use money symbols):

	Pre-seed Stage (1)	Seed Stage (2)	Early Stage (Series A and B) (3)	Later Stage (Series C and Mezzanine) (4)
EBITDA (1) Revenues (2) Sales (3) Profit (4)				

7.5 If you want to add any information, please write in the box below.

*English

Thank you for taking the time to fill this questionnaire. Your answers have been saved.

*Portuguese

Agradecemos o tempo dispensado no preenchimento deste questionário. A sua resposta foi registada.

Appendix 3: Descriptive statistics of the sample

How many (co-)founders has the startup?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	1	7	15,6	15,6	15,6
	2	20	44,4	44,4	60,0
	3	14	31,1	31,1	91,1
	More than 3	4	8,9	8,9	100,0
	Total	45	100,0	100,0	

Gender of (co-)founders-Male

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	0	2	4,4	4,4	4,4
	1	9	20,0	20,0	24,4
	2	22	48,9	48,9	73,3
	3	10	22,2	22,2	95,6
	4	2	4,4	4,4	100,0
	Total	45	100,0	100,0	

Gender of (co-)founders-Female

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	0	34	75,6	75,6	75,6
	1	9	20,0	20,0	95,6
	2	1	2,2	2,2	97,8
	3	1	2,2	2,2	100,0
	Total	45	100,0	100,0	

What is the stage of your startup?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	Pre-seed	12	26,7	26,7	26,7
	Seed	24	53,3	53,3	80,0
	A-B round / Early Stage	7	15,6	15,6	95,6
	C round or Mezzanine / Late stage	2	4,4	4,4	100,0
	Total	45	100,0	100,0	

For how long is the startup active

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	Less than 6 months	2	4,4	4,4	4,4
	Between 6 months and 1 year	7	15,6	15,6	20,0
	Between 1 year and 2 years	19	42,2	42,2	62,2
	Between 2 years and 3 years	6	13,3	13,3	75,6
	More than 3 years	11	24,4	24,4	100,0
	Total	45	100,0	100,0	

The startup is:

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	B2B	30	66,7	66,7	66,7
	B2C	14	31,1	31,1	97,8
	B2G	1	2,2	2,2	100,0
	Total	45	100,0	100,0	

What is the type/industry of the startup?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	Technology	27	60,0	60,0	60,0
	Life Sciences & Med Tech	6	13,3	13,3	73,3
	Travel and Leisure Tech	3	6,7	6,7	80,0
	Other	9	20,0	20,0	100,0
	Total	45	100,0	100,0	

What is the business percentage done in:-Portugal

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	,00	1	2,2	2,2	2,2
	,01	2	4,4	4,4	6,7
	,05	1	2,2	2,2	8,9
	,10	5	11,1	11,1	20,0
	,13	1	2,2	2,2	22,2
	,15	1	2,2	2,2	24,4
	,20	3	6,7	6,7	31,1
	,30	4	8,9	8,9	40,0
	,40	2	4,4	4,4	44,4
	,50	6	13,3	13,3	57,8
	,60	2	4,4	4,4	62,2
	,67	1	2,2	2,2	64,4
	,70	2	4,4	4,4	68,9
	,85	1	2,2	2,2	71,1
	,90	1	2,2	2,2	73,3
	,99	1	2,2	2,2	75,6
	1,00	11	24,4	24,4	100,0
	Total	45	100,0	100,0	

What is the business percentage done in:-Abroad

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	,00	11	24,4	24,4	24,4
	,10	1	2,2	2,2	26,7
	,15	1	2,2	2,2	28,9
	,30	2	4,4	4,4	33,3
	,33	1	2,2	2,2	35,6
	,40	2	4,4	4,4	40,0
	,50	6	13,3	13,3	53,3
	,60	2	4,4	4,4	57,8
	,70	4	8,9	8,9	66,7
	,80	3	6,7	6,7	73,3
	,85	1	2,2	2,2	75,6
	,87	1	2,2	2,2	77,8
	,90	5	11,1	11,1	88,9
	,95	1	2,2	2,2	91,1
	,99	2	4,4	4,4	95,6
	1,00	2	4,4	4,4	100,0
	Total	45	100,0	100,0	

Does the startup has a base abroad?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	No	31	68,9	68,9	68,9
	Yes	14	31,1	31,1	100,0
	Total	45	100,0	100,0	

Where is the startup based abroad?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	Europe	8	17,8	57,1	57,1
	USA	4	8,9	28,6	85,7
	Central or South America	1	2,2	7,1	92,9
	Asia	1	2,2	7,1	100,0
	Total	14	31,1	100,0	
Omisso	Sistema	31	68,9		
Total		45	100,0		

Where is the startup based in Portugal?

		Frequência	Porcentagem	Porcentagem válida	Porcentagem cumulativa
Válido	Aveiro	2	4,4	6,5	6,5
	Beja	1	2,2	3,2	9,7
	Braga	1	2,2	3,2	12,9
	Castelo Branco	1	2,2	3,2	16,1
	Coimbra	2	4,4	6,5	22,6
	Évora	1	2,2	3,2	25,8
	Leiria	2	4,4	6,5	32,3
	Lisboa	11	24,4	35,5	67,7
	Porto	8	17,8	25,8	93,5
	Viseu	1	2,2	3,2	96,8
	Açores	1	2,2	3,2	100,0
	Total	31	68,9	100,0	
Omisso	Sistema	14	31,1		
Total		45	100,0		

Appendix 4: Descriptive statistics of independent variables and Pearson correlation coefficients

	Mean	St.Dev	AbsGrowthEmploy	InvestRaised	TimeVC	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Masters_Edu_Level	0,800	0,405	0,172	0,246	0,044	1												
2 Edu_Mentor_1year	0,244	0,435	0,060	0,138	0,242	0,0259	1											
3 ManagerExp_FS1	0,178	0,387	-0,263	-,298*	0,101	-0,0581	0,006	1										
4 LeaderExp_AT1	0,178	0,387	-0,257	-,409**	-0,179	-0,2034	-0,264	,392**	1									
5 LeaderExp_AT2	0,533	0,505	-,407**	-,460**	-0,081	-0,1336	-0,090	0,202	,435**	1								
6 LeaderExp_AT3	0,333	0,477	,554**	,437**	-0,028	0,1179	0,146	-0,205	-,329*	-,756**	1							
7 SelfEmployExp	0,378	0,490	,316*	0,055	-0,097	-0,0688	0,197	-0,003	-0,123	0,086	0,032	1						
8 SimilarIndustry	0,600	0,495	0,080	-0,086	-,326*	0,2722	-0,063	0,024	0,024	0,145	0,000	0,168	1					
9 IT_AT2	0,467	0,505	-,443**	-,441**	-0,115	0,1336	-0,117	0,264	0,264	,607**	-,661**	0,006	0,127	1				
10 BusinessDev_AT2	0,422	0,499	-,322*	-,310*	-0,106	-0,1350	-0,067	,426**	,309*	,618**	-,604**	0,262	0,055	,643**	1			
11 MarketingSales_AT3	0,311	0,468	0,267	,472**	0,051	0,0960	0,176	-0,187	-,312*	-,718**	,849**	-0,128	-0,137	-,629**	-,574**	1		
12 StartupTeam	0,533	0,505	0,028	-0,122	-0,003	-0,0223	0,117	-0,031	-0,148	,375*	-0,283	,361*	-0,127	,429**	,439**	-,430**	1	
13 FounderStartup	0,622	0,490	0,171	-0,026	-0,043	-0,1604	0,123	-0,117	0,123	0,282	-0,032	0,229	0,112	-0,006	0,202	-0,169	,374*	1

**. A correlação é significativa no nível 0,01 (bilateral).

*. A correlação é significativa no nível 0,05 (bilateral).

Appendix 5: Independent t-test results

Hypothesis 1

Group Statistics

	At least one of the founders has a Masters Degree	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	9	3,67	4,031	1,344
	Yes	36	7,64	10,120	1,687
How long did it take to receive Venture Capital?	No	9	,6389	,53196	,17732
	Yes	36	,7014	,59408	,09901
What is the amount of money that you have raised so far?	No	9	2,11	1,537	,512
	Yes	36	3,08	1,574	,262

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	2,435	,126	-1,147	43	,258	-3,972	3,464	-10,957	3,013
	Equal variances not assumed			-1,842	33,857	,074	-3,972	2,156	-8,355	,411
How long did it take to receive Venture Capital?	Equal variances assumed	,021	,887	-,288	43	,775	-,06250	,21728	-,50069	,37569
	Equal variances not assumed			-,308	13,467	,763	-,06250	,20309	-,49971	,37471
What is the amount of money that you have raised so far?	Equal variances assumed	,972	,330	-1,664	43	,103	-,972	,584	-2,150	,206
	Equal variances not assumed			-1,689	12,552	,116	-,972	,575	-2,220	,276

Existence of a mentor

Group Statistics

	The team has a mentor for this startup?	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	24	8,71	11,727	2,394
	Yes	21	4,71	4,931	1,076
How long did it take to receive Venture Capital?	No	24	,5521	,54163	,11056
	Yes	21	,8452	,58883	,12849
What is the amount of money that you have raised so far?	No	24	3,17	1,633	,333
	Yes	21	2,57	1,535	,335

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	3,500	,068	1,451	43	,154	3,994	2,753	-1,557	9,545
	Equal variances not assumed			1,522	31,744	,138	3,994	2,624	-1,354	9,342
How long did it take to receive Venture Capital?	Equal variances assumed	,414	,523	-1,739	43	,089	-,29315	,16855	-,63307	,04676
	Equal variances not assumed			-1,729	41,023	,091	-,29315	,16951	-,63549	,04918
What is the amount of money that you have raised so far?	Equal variances assumed	,382	,540	1,254	43	,217	,595	,475	-,362	1,552
	Equal variances not assumed			1,259	42,759	,215	,595	,473	-,358	1,548

Hypothesis 2

Group Statistics

	At least one of the founders has management experience and the startup is at pre-seed stage	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	37	7,97	9,901	1,628
	Yes	8	1,63	2,200	,778
How long did it take to receive Venture Capital?	No	37	,6622	,53754	,08837
	Yes	8	,8125	,76474	,27038
What is the amount of money that you have raised so far?	No	37	3,11	1,577	,259
	Yes	8	1,88	1,356	,479

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	2,866	,098	1,789	43	,081	6,348	3,549	-,810	13,506
	Equal variances not assumed			3,519	42,832	,001	6,348	1,804	2,710	9,986
How long did it take to receive Venture Capital?	Equal variances assumed	1,629	,209	-,664	43	,510	-,15034	,22638	-,60689	,30621
	Equal variances not assumed			-,529	8,556	,611	-,15034	,28445	-,79893	,49825
What is the amount of money that you have raised so far?	Equal variances assumed	5,081	,029	2,049	43	,047	1,233	,602	,019	2,447
	Equal variances not assumed			2,262	11,502	,044	1,233	,545	,040	2,427

Hypothesis 3

Group Statistics

	At least one of the founders has leadership experience and the startup is active for equal or less than 1 year	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	37	7,95	9,927	1,632
	Yes	8	1,75	1,982	,701
How long did it take to receive Venture Capital?	No	37	,7365	,56503	,09289
	Yes	8	,4688	,61872	,21875
What is the amount of money that you have raised so far?	No	37	3,19	1,543	,254
	Yes	8	1,50	1,069	,378

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	3,285	,077	1,743	43	,089	6,196	3,555	-,974	13,366
	Equal variances not assumed			3,488	42,984	,001	6,196	1,776	2,614	9,778
How long did it take to receive Venture Capital?	Equal variances assumed	,063	,803	1,196	43	,238	,26774	,22385	-,18370	,71917
	Equal variances not assumed			1,127	9,691	,287	,26774	,23766	-,26409	,79956
What is the amount of money that you have raised so far?	Equal variances assumed	8,462	,006	2,935	43	,005	1,689	,575	,529	2,850
	Equal variances not assumed			3,711	14,164	,002	1,689	,455	,714	2,664

Group Statistics

	At least one of the founders has leadership experience and the startup is active for equal or less than 2 year	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	21	10,86	12,109	2,642
	Yes	24	3,33	3,371	,688
How long did it take to receive Venture Capital?	No	21	,7381	,60455	,13192
	Yes	24	,6458	,56104	,11452
What is the amount of money that you have raised so far?	No	21	3,67	1,426	,311
	Yes	24	2,21	1,444	,295

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	9,404	,004	2,922	43	,006	7,524	2,575	2,330	12,717
	Equal variances not assumed			2,755	22,713	,011	7,524	2,731	1,871	13,176
How long did it take to receive Venture Capital?	Equal variances assumed	,112	,740	,531	43	,598	,09226	,17381	-,25826	,44278
	Equal variances not assumed			,528	41,171	,600	,09226	,17470	-,26050	,44502
What is the amount of money that you have raised so far?	Equal variances assumed	,001	,980	3,400	43	,001	1,458	,429	,593	2,323
	Equal variances not assumed			3,402	42,347	,001	1,458	,429	,594	2,323

Group Statistics

	At least one of the founders has leadership experience and the startup is active for equal or more than 2 year	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	30	3,23	3,329	,608
	Yes	15	14,07	12,909	3,333
How long did it take to receive Venture Capital?	No	30	,7000	,58869	,10748
	Yes	15	,6667	,57217	,14773
What is the amount of money that you have raised so far?	No	30	2,40	1,453	,265
	Yes	15	3,87	1,457	,376

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	11,440	,002	-4,360	43	,000	-10,833	2,485	-15,844	-5,823
	Equal variances not assumed			-3,198	14,939	,006	-10,833	3,388	-18,057	-3,609
How long did it take to receive Venture Capital?	Equal variances assumed	,002	,961	,181	43	,857	,03333	,18447	-,33870	,40536
	Equal variances not assumed			,182	28,841	,857	,03333	,18269	-,34041	,40707
What is the amount of money that you have raised so far?	Equal variances assumed	,345	,560	-3,189	43	,003	-1,467	,460	-2,394	-,539
	Equal variances not assumed			-3,186	28,027	,004	-1,467	,460	-2,410	-,524

Hypothesis 4

Group Statistics

	At least one of the founders has self-employment experience	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	28	4,57	4,606	,870
	Yes	17	10,59	13,398	3,250
How long did it take to receive Venture Capital?	No	28	,7321	,65238	,12329
	Yes	17	,6176	,43407	,10528
What is the amount of money that you have raised so far?	No	28	2,82	1,634	,309
	Yes	17	3,00	1,581	,383

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	8,934	,005	-2,186	43	,034	-6,017	2,752	-11,567	-,467
	Equal variances not assumed			-1,789	18,323	,090	-6,017	3,364	-13,076	1,042
How long did it take to receive Venture Capital?	Equal variances assumed	6,305	,016	,641	43	,525	,11450	,17858	-,24565	,47464
	Equal variances not assumed			,706	42,552	,484	,11450	,16212	-,21255	,44154
What is the amount of money that you have raised so far?	Equal variances assumed	,423	,519	-,360	43	,721	-,179	,496	-1,180	,823
	Equal variances not assumed			-,363	34,808	,719	-,179	,492	-1,178	,821

Hypothesis 5

Group Statistics

	At least one of the founders has similar industry experience	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	18	5,94	6,014	1,418
	Yes	27	7,44	11,074	2,131
How long did it take to receive Venture Capital?	No	18	,9167	,60025	,14148
	Yes	27	,5370	,51750	,09959
What is the amount of money that you have raised so far?	No	18	3,06	1,434	,338
	Yes	27	2,78	1,717	,330

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	1,384	,246	-,524	43	,603	-1,500	2,862	-7,272	4,272
	Equal variances not assumed			-,586	41,632	,561	-1,500	2,560	-6,667	3,667
How long did it take to receive Venture Capital?	Equal variances assumed	1,379	,247	2,261	43	,029	,37963	,16788	,04107	,71818
	Equal variances not assumed			2,194	32,762	,035	,37963	,17302	,02753	,73173
What is the amount of money that you have raised so far?	Equal variances assumed	3,922	,054	,567	43	,574	,278	,490	-,711	1,266
	Equal variances not assumed			,588	40,716	,560	,278	,473	-,677	1,233

Hypothesis 6

Group Statistics

	At least one of the founders has IT Experience and the startup is active for less than 2 years	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	24	10,67	11,231	2,293
	Yes	21	2,48	2,960	,646
How long did it take to receive Venture Capital?	No	24	,7500	,59436	,12132
	Yes	21	,6190	,56247	,12274
What is the amount of money that you have raised so far?	No	24	3,54	1,587	,324
	Yes	21	2,14	1,276	,278

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	7,896	,007	3,241	43	,002	8,190	2,527	3,093	13,288
	Equal variances not assumed			3,439	26,604	,002	8,190	2,382	3,300	13,081
How long did it take to receive Venture Capital?	Equal variances assumed	,113	,738	,756	43	,454	,13095	,17323	-,21840	,48031
	Equal variances not assumed			,759	42,716	,452	,13095	,17258	-,21716	,47906
What is the amount of money that you have raised so far?	Equal variances assumed	2,705	,107	3,226	43	,002	1,399	,434	,524	2,273
	Equal variances not assumed			3,274	42,721	,002	1,399	,427	,537	2,261

Hypothesis 7

Group Statistics

	At least one of the founders has Business Development Experience and the startup is active for less than 2 years	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	26	9,38	11,261	2,208
	Yes	19	3,37	3,804	,873
How long did it take to receive Venture Capital?	No	26	,7404	,60614	,11887
	Yes	19	,6184	,54243	,12444
What is the amount of money that you have raised so far?	No	26	3,31	1,644	,322
	Yes	19	2,32	1,376	,316

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	5,341	,026	2,232	43	,031	6,016	2,696	,580	11,453
	Equal variances not assumed			2,534	32,322	,016	6,016	2,375	1,181	10,851
How long did it take to receive Venture Capital?	Equal variances assumed	,925	,342	,696	43	,490	,12196	,17515	-,23126	,47519
	Equal variances not assumed			,709	41,161	,483	,12196	,17209	-,22555	,46947
What is the amount of money that you have raised so far?	Equal variances assumed	2,741	,105	2,138	43	,038	,992	,464	,056	1,928
	Equal variances not assumed			2,198	42,124	,033	,992	,451	,081	1,902

Marketing and Sales

Group Statistics

	At least one of the founders has Marketing and Sales Experience and the startup is active for more than 2 years	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	31	5,06	9,729	1,747
	Yes	14	10,79	7,192	1,922
How long did it take to receive Venture Capital?	No	31	,6694	,58945	,10587
	Yes	14	,7321	,56725	,15160
What is the amount of money that you have raised so far?	No	31	2,39	1,498	,269
	Yes	14	4,00	1,240	,331

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	,301	,586	-1,966	43	,056	-5,721	2,910	-11,590	,148
	Equal variances not assumed			-2,202	33,465	,035	-5,721	2,598	-11,003	-,439
How long did it take to receive Venture Capital?	Equal variances assumed	,160	,691	-,335	43	,740	-,06279	,18767	-,44126	,31569
	Equal variances not assumed			-,340	26,083	,737	-,06279	,18491	-,44282	,31724
What is the amount of money that you have raised so far?	Equal variances assumed	3,261	,078	-3,514	43	,001	-1,613	,459	-2,538	-,687
	Equal variances not assumed			-3,777	30,114	,001	-1,613	,427	-2,485	-,741

Hypothesis 8

Group Statistics

	At least one of the founders had an entrepreneurship experience in a startup team	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	21	6,57	7,025	1,533
	Yes	24	7,08	11,108	2,267
How long did it take to receive Venture Capital?	No	21	,6905	,62202	,13574
	Yes	24	,6875	,54797	,11185
What is the amount of money that you have raised so far?	No	21	3,10	1,758	,384
	Yes	24	2,71	1,459	,298

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	,296	,589	-,182	43	,857	-,512	2,818	-6,195	5,172
	Equal variances not assumed			-,187	39,373	,853	-,512	2,737	-6,046	5,023
How long did it take to receive Venture Capital?	Equal variances assumed	,924	,342	,017	43	,986	,00298	,17438	-,34869	,35464
	Equal variances not assumed			,017	40,247	,987	,00298	,17588	-,35243	,35838
What is the amount of money that you have raised so far?	Equal variances assumed	2,896	,096	,807	43	,424	,387	,480	-,580	1,354
	Equal variances not assumed			,797	39,041	,430	,387	,486	-,595	1,369

Hypothesis 9

Group Statistics

	At least one of the founders has founded a startup before	N	Mean	Std. Deviation	Std. Error Mean
Absolute Growth in Employment	No	17	4,82	6,217	1,508
	Yes	28	8,07	10,711	2,024
How long did it take to receive Venture Capital?	No	17	,7206	,57202	,13874
	Yes	28	,6696	,58947	,11140
What is the amount of money that you have raised so far?	No	17	2,94	1,600	,388
	Yes	28	2,86	1,627	,307

Independent Samples Tests

		Levene's Test for Equality of Variances		t-test for Equality of means						
									95% Confidence Level of the Dif.	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Absolute Growth in Employment	Equal variances assumed	1,131	,293	-1,136	43	,262	-3,248	2,858	-9,012	2,517
	Equal variances not assumed			-1,287	42,957	,205	-3,248	2,524	-8,339	1,843
How long did it take to receive Venture Capital?	Equal variances assumed	,004	,952	,284	43	,778	,05095	,17927	-,31058	,41247
	Equal variances not assumed			,286	34,728	,776	,05095	,17792	-,31036	,41225
What is the amount of money that you have raised so far?	Equal variances assumed	,038	,845	,169	43	,867	,084	,497	-,918	1,086
	Equal variances not assumed			,170	34,367	,866	,084	,495	-,921	1,090