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Start-ups' Challenges and Success Factors

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Abstract

Start-ups in Greece are key factors for the development of growth and competitiveness. Greece over the last eight years, following the European Union debt crisis, has an unsustainable growth model. This dissertation aims to explore the challenges and key determinants affecting the growth of start-ups, with a particular focus on funding. Start-ups play a pivotal role in innovation and economic development, but their success is often hindered by various challenges. This study investigates the relationship between funding and start-up growth, identifying the factors that may influence the financing of businesses at different growth stages.

This dissertation provides an overview of key characteristics of Greek start-ups and presents the main sources of funding as well as actors and determinants in the innovation ecosystem supporting their growth. An online questionnaire addressed to Greek start-ups is part of the survey, with the primary aim of exploring the characteristics and challenges of start- ups especially as to the funding sources and determinants of their growth.

The analysis of results demonstrate that the most important determinant of growth is access to funding followed by access to talent, collaboration and networking with the start-up ecosystem and training of founders and employees. The analysis shows that start-ups with co-founders with prior experience tend to have a higher total amount of funding raised. Furthermore, the analysis confirms the correlation between challenges, determinants of funding and start-up growth and provides feedback as to the funding sources used at different growth stages, confirming entrepreneurial finance literature. The results highlight that the main barrier is associated with the government policy support for grants and credit and government regulations as to taxation and bureaucracy.

Training and mentoring are the most important strategies of support for start-ups. Governments could organize pitching and information sessions for start-ups and investors in order to facilitate their collaboration and further financial development and supporting their sustainability and growth. European Digital Innovation Hubs and European Networks support start-ups in their early steps through mentoring and counselling. Further research may also provide insights as to the policy measures required to support start-up growth and the innovation ecosystem as a whole.

Keywords: Start-ups; challenges; funding; determinants; success; growth.

Περίληψη

Η ανάπτυξη των νεοφυών επιχειρήσεων (startups) αποτελεί έναν από τους βασικούς κινητήρες οικονομικής ανάπτυξης και καινοτομίας σε παγκόσμιο επίπεδο. Στην Ελλάδα, το οικοσύστημα των startups έχει σημειώσει σημαντική πρόοδο τα τελευταία χρόνια, παρά τις διάφορες οικονομικές προκλήσεις. Η παρούσα εργασία αποσκοπεί στην ανάλυση των μηχανισμών χρηματοδότησης των νεοφυών επιχειρήσεων στη χώρα μας στα διαφορετικά στάδια ανάπτυξης τους, στην καταγραφή των δυσκολιών που αντιμετωπίζουν και των παραγόντων που υποστηρίζουν την ανάπτυξη και βιωσιμότητά τους.

Στο πλαίσιο της εργασίας γίνεται βιβλιογραφική ανασκόπηση των κύριων χαρακτηριστικών των νεοφυών επιχειρήσεων και των μηχανισμών χρηματοδότησης στα διαφορετικά στάδια ανάπτυξης τους. Το διαδικτυακό ερωτηματολόγιο που απευθύνεται στις ελληνικές νεοφυείς επιχειρήσεις αποτελεί μέρος της έρευνας, με πρωταρχικό στόχο τη διερεύνηση των χαρακτηριστικών και των προκλήσεων των νεοφυών επιχειρήσεων, ιδίως ως προς τις πηγές χρηματοδότησης και τσους παράγοντες της ανάπτυξής τους.

Με την ανάλυση των αποτελεσμάτων του ερωτηματολογίου, παρουσιάζονται δημογραφικά στοιχεία των ιδρυτικών ομάδων, τα σημαντικότερα προβλήματα που αντιμετωπίζουν οι νεοφυείς επιχειρήσεις, όπως η έλλειψη χρηματοδότησης, η δυσκολία πρόσβασης στην αγορά και τα γραφειοκρατικά εμπόδια και τα σημαντικότερα στοιχεία που συμβάλλουν στην επιτυχία των startups, όπως η ποιότητα της ομάδας, η χρηματοδότηση και η δικτύωση. Η ανάλυση των αποτελεσμάτων δείχνει ότι ο πιο σημαντικός παράγοντας της ανάπτυξης είναι η πρόσβαση στη χρηματοδότηση ενώ ακολουθεί η πρόσβαση σε ταλέντα, η συνεργασία, η δικτύωση με το οικοσύστημα νεοφυών επιχειρήσεων και η εκπαίδευση ιδρυτών και εργαζομένων. Η ανάλυση δείχνει ότι οι νεοσύστατες επιχειρήσεις με ιδρυτές με προηγούμενη εμπειρία τείνουν να έχουν επιτυγχάνουν μεγαλύτερο ύψος χρηματοδότησης. Επιπλέον, η ανάλυση επιβεβαιώνει τη συσχέτιση μεταξύ των προκλήσεων, παραγόντων της χρηματοδότησης και της ανάπτυξης νέων επιχειρήσεων και παρέχει ανατροφοδότηση ως προς τις πηγές χρηματοδότησης που χρησιμοποιούνται σε διαφορετικά στάδια ανάπτυξης, επιβεβαιώνοντας τη βιβλιογραφία. Τα αποτελέσματα υπογραμμίζουν ότι το κύριο εμπόδιο συνδέεται με την κυβερνητική πολιτική για επιχορηγήσεις και τους κρατικούς κανονισμούς για τη φορολογία και τη γραφειοκρατία.

Με βάση τα συμπεράσματα της έρευνας, διατυπώνονται προτάσεις για την υποστήριξη της ανάπτυξης των νεοφυών επιχειρήσεων και του οικοσυστήματος καινοτομίας στην Ελλάδα. Η εκπαίδευση και η καθοδήγηση είναι οι πιο σημαντικές στρατηγικές υποστήριξης για νεοφυείς επιχειρήσεις. Οι κυβερνήσεις είναι ωφέλιμο να οργανώσουν συναντήσεις προώθησης και ενημέρωσης για νεοσύστατες επιχειρήσεις και επενδυτές προκειμένου να διευκολύνουν τη συνεργασία και να υποστηρίξουν τη βιωσιμότητα και την ανάπτυξή τους. Οι Ευρωπαϊκοί Κόμβοι Ψηφιακής Καινοτομίας και τα Ευρωπαϊκά Δίκτυα υποστηρίζουν τις νεοφυείς επιχειρήσεις στα πρώτα τους βήματα μέσω καθοδήγησης και παροχής συμβουλών. Η παρούσα εργασία φιλοδοξεί να συμβάλει στην κατανόηση του τοπίου των νεοφυών επιχειρήσεων στην Ελλάδα και να παράσχει χρήσιμες κατευθύνσεις για την υποστήριξη και ανάπτυξή τους. Περαιτέρω έρευνα προτείνεται σχετικά με τα μέτρα πολιτικής που απαιτούνται για τη στήριξη του οικοσυστήματος καινοτομίας.

Λέξεις κλειδιά: Start-ups; προκλήσεις; χρηματοδότηση; παράγοντες; επιτυχία; ανάπτυξη.

"I would like to thank my family (Nikos, Irene, Panagiotis - Irene and Vasilis) who supported me during my efforts to complete this postgraduate programme and my supervisors for their guidance during this postgraduate dissertation.

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1. Introduction

Long- term competitiveness at national and European level is nowadays a critical priority for socio-economic development. Entrepreneurship is critical to economic growth, as it contributes to job creation and innovation. Innovation is a prerequisite for achieving business competitive advantage and long- term success in the competitive and changing international market and the most important component of economic growth (European Commission, 2023).

Start-ups are key drivers in innovation and economic growth. Successful start-up entrepreneurship requires that stakeholders of the innovation ecosystem operate in an environment of mutual support and cooperation. Universities, technology transfer offices, science parks, incubators, and accelerators must support the development of start- ups from their early stage of development. Start-ups development, success, and sustainability depends on the interaction and exchange of knowledge between governmental organisations, educational institutions, businesses and civil society and environmental organisations, being the core pillars of the innovation ecosystem (Ziakis, C.; Vlachopoulou, M.; Petridis, 2022).

However, today's start-ups encounter numerous obstacles in the business environment, such as developing a viable business model, assembling a cohesive team, and achieving a product-market fit. On their path to becoming established businesses, start-ups face various challenges. The most critical one is securing adequate funding for their operations and growth. Many start-ups do not achieve revenue growth or a successful financial exit. This funding challenge stems from the fact that start-ups are characterized by high levels of uncertainty and instability. Securing appropriate funding is vital for entrepreneurs and essential for the survival of new ventures. Limited cash flow, high uncertainty, and difficulties in networking and negotiating with investors are significant challenges that affects start-up survival at different stages of growth.

In the early stage of the start- up life cycle, scouting and coaching is as important as autonomy and financing. Accelerators and incubators can fulfill start-ups' needs for scouting and coaching, but start-ups cannot rely on them for their financial survival and therefore need support from additional investors. Venture debt lenders cannot provide the scouting and coaching services required at the early stage (Nico Lehnertz, Carolin Plagmann, Eva Lutz, 2022) and can augment existing equity investment or support start-ups with experience and market visibility. Thus, venture capitalists and angel investors are appropriate partners for early-stage start-ups (Drover W., Busenitz L., Matusik S., Townsend D., Anglin A., Dushnitsky G., 2017).

During the mid and late stages, start- up founders have more experience and visibility and place greater value on autonomy and financing and less on scouting and coaching. As a startup's visibility and experience grows, there are more funding options available. While venture capitalists, angel investors, accelerators, and incubators remain valuable partners, bank loans and crowdfunding also become viable funding supplements and alternatives. Debt providers, such as banks, make their investment decisions based on past performance data (Berger, A. N., & Udell, G. F., 1998).

Moreover, the funding landscape for start-ups has changed over the last years. The global financial crisis, forced debt providers such as banks to adopt a more stingent lending policy. In parallel, venture capitalists and business angels reduced their investment activities across various stages of business life cycle, adjusted their risk preferences, and shifted their focus on prefered investment targets (Block JH, Sandner P, 2009). In parallel, stakeholders in the innovation-funding ecosystem such as incubators, and accelerators have started offering value- added services such as management and technological support, advice, and networking with the innovation ecosystem (Block JH, Colombo MG, Cumming DJ, Vismara S, 2018).

Greece ranks 21st among the 28 EU countries, remaining in the group of member states with a moderate performance in innovation, below the European average (European Commission, European Innovation Scoreboard, 2023). According to the National Entrepreneurship Context Index – NECI- the local entrepreneurship environment lacks behind in comparison to other countries, a fact that indicates the importance of policies for supporting entrepreneurs in Greece. According to the Global Entrepreneurship Monitor there is slow improvement in the local Greek entrepreneurship, mainly related to the availability of new financial support mechanisms as well as mechanisms facilitating the market entrance of new businesses. However, the major challenges for the Greek SMEs is the difficulty to secure finance, the complex legal framework, the high rate of taxation and the increased competition (Τσακανίκας, Α., Γιωτόπουλος, Γ., Βαλαβανιώτη, Ε. και Σταυράκη, Σ., 2023).

The key characteristics of the Greek startup ecosystem are the following:

- The Greek government initiatives and policies support the start-up ecosystem. Some of the initiatives include targeted tax incentives for Angel Investors (L. 4712/2020, gazette A' 146, art. 49), tax incentives for stock options (L. 4646/2019, gazette A' 201, Art. 4), calls for working capital cash injections up to 100.000 euros to mitigate the negative impact of COVID-19, tax incentives for Research and Development expenses, reduced bureaucracy in public services, an innovation loan backed by the Hellenic Development Bank, National Strategic Reference Framework calls for proposals to support start-ups funding and free consulting services, seminars and prizes.
- A growing number of new financial support mechanisms such as venture capital firms, angel investors, and crowdfunding platforms support start-ups at various stages of development. Incubators offer start-ups' guidance, funding resources, and networking opportunities.
- The Greek ecosystem extends well beyond the country's geographical boundaries, playing an active role in the Central and Eastern European ecosystem, thanks to the significant opportunities arising from the Greek diaspora. However, early-stage businesses generally receive funding from the entrepreneur's own equity or from their immediate circle, and seldom by venture capital firms (Komselis, 2016).

In recent years, the Greek start-up scene has experienced a phase of consolidation marked by successes, which increases prospects for further growth and a strong contribution to the economy as a whole. However, problems of liquidity and survival for start-ups, resulting from the global financial crisis and the impact of the Covid-19 pandemic remain. Despite the rise in average inflation above euro area levels, which negatively impacts in the competitiveness of the Greek economy, Greece is expected

to further advance in the start-ups business environment. As a result, start-ups need more extroversion on attracting international investments and access to funding.

Against this background, the objective of this dissertation is to explore the challenges faced by start-ups in the area of start-up financing, and identify the factors that empower founders to establish successful ventures.

This dissertation provides an overview of definitions and key characteristics of Greek start-ups and presents the main sources of funding as well as actors and determinants in the innovation ecosystem supporting their growth. An online questionnaire addressed to Greek start-ups is part of the survey, with the primary aim of exploring the characteristics and challenges of start- ups especially as to the funding sources and determinants of their growth.

More specifically, the dissertations includes three chapters. The first chapter begins with an analysis of the startup entrepreneurship and its characteristics. The second chapter provides an analysis of the funding sources during the different growth phases and determinants of start- up success, as well as an overview of the Greek context and the innovation ecosystem. The third section outlines the main objectives of the study and the research methodology. The fourth section presents an analysis of research findings. Finally, the dissertation concludes by discussing the primary findings and providing recommendations for future research.

2. Theoretical framework

2.1 Definitions and Characteristics

The start-up term emerged in the United States as Silicon Valley is the birthplace of modern start-ups**.** Different articles and papers on start-ups provide different definitions.

Blank & Dorf (2013) define start-ups as temporary organisations seeking a profitable, repeatable and scalable business model. A start-up is a human-designed institution that innovates under conditions of uncertainty and ambiguity (Eric Ries, 2011) and is designed to grow fast (Mackiewicz, M., 2022). Start-ups disrupt established ways of thinking and conducting business across entire industries. Ouimet and Zarutskie (2014) define start-ups as ventures that have a high likelihood of failing, but those that succeed have the potential to grow at a much faster pace than other companies operating in the market.

A typical start-up at its early stages is a new business venture in temporary premises, employing a small team and financed through personal funds and bank loans. There are differences between traditional companies and start-ups. Firstly, most start-ups begin their business activities on a small**-** scale, and have high initial costs with low or no revenue. They have negative financial results and need external capital. Additionally, they face high uncertainty due to a lack of evidence or data to formulate business scenarios**.** Start-up founders value autonomy and creativity, which are critical to quick growth. The founders of start-ups are entrepreneurs with different motivations for setting up the company such as passion, survival, aspiration and differentiation. They face challenges in securing funding due to lack of collateral security and experience. Start-ups operate in environments in which fast time-to-market and effective innovation processes are crucial for survival and success (Nigar Demircan Çakar, Alper Ertürk, 2010). Start-ups pursue a strategy of introducing incremental innovations and enhancing the value of current products or services in the market, or radical innovations aimed at disrupting the industry (Komselis, A., 2016).

The focus of start-ups is on the so-called "Minimum Viable Product". This approach prioritizes using few resources and testing the products directly in the market. The focus lies in effective ideation and continuous enhancement of the solution. This is possible by modifying the products according to customers' needs. The validated result is the so-called "product-market fit".

A very popular business model in start- ups is the "lean start- up" which is based on business model experimentation (Eric Ries, 2011). It includes shortening the cycles of planning and development, allowing founders to determine whether adjustments to the business model are necessary. In the case of "lean start-up", founders use a framework called a *business model canvas* instead of a business plan*.* Alexander Osterwalder, Yves Pigneur (2010) have identified nine building blocks, presented in the table below. Together, these building blocks form a business model canvas, illustrating the essential components needed to generate revenue and foster growth. Business development requires following explorative approach (Blank S, 2013). Therefore, choosing the appropriate growth strategy is crucial for the startup's survival and growth (Gurel, B., & Sari, I. U., 2015).

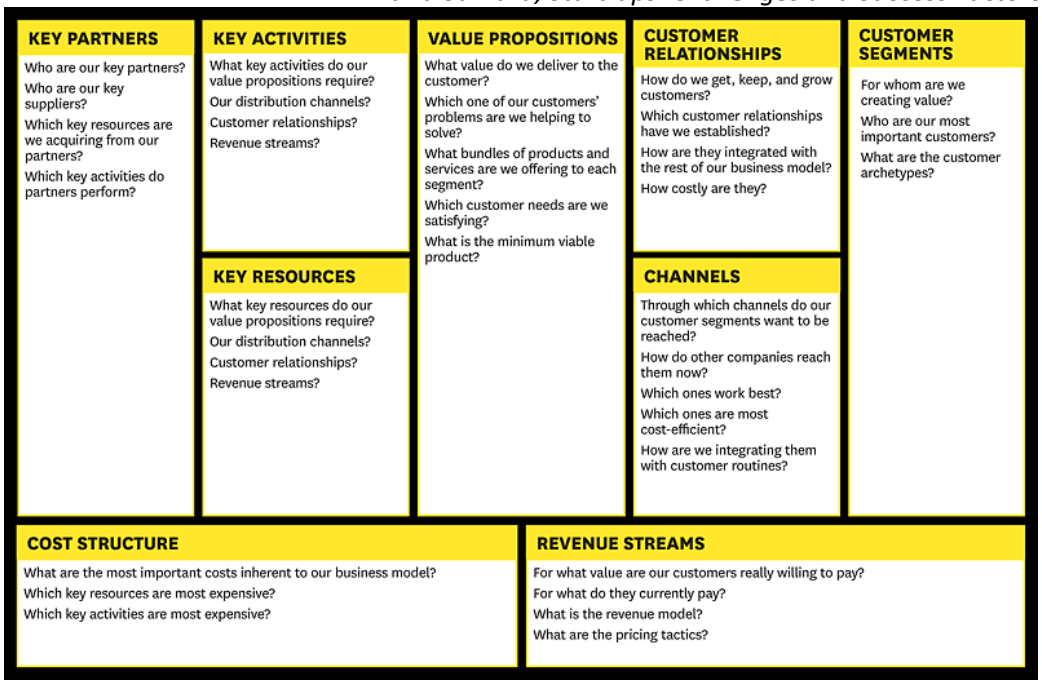

Figure 1. The 9 Building Blocks of a Business Model (adapted from Osterwalder & Pigneur 2010)

2.2 Stages of start-up growth and Sources of Funding

2.2.1 Stages of start-up growth

Growth is an challenge for start-ups. There are various theories as to the stages of the start-up growth (Petch, 2016). For the case of this dissertation, the stages of a startup are based on the funding raised, as follows:

1. Early stage (Bootstrap)
2. The pre-seed stage
3. The seed stage
4. Growth (early) stage/ Series A
5. Growth (late) stage/ Series B
6. Growth (expansion) stage/ Series C and
7. Exit stage.

The early stage begins with the innovative idea of a product. The founder checks if the product fits into the market. The entrepreneur validates the product and business concept. At this stage, funding comes from founder, friends and family, the so-called bootstrapping (Chua, Jess H. & Chrisman, James J. & Kellermanns, Franz & Wu, Zhenyu, 2011). However, entrepreneurs are hesitatnt to use bootstrapping because of the high emotional pressure associated with risking the money of family or friends when making business decisions and the fact that having no access to external support may be restrictive as to raising enough capital to achieve the desired level of development.

At the pre-seed stage, founders begin development of a prototype and try to find a product-market fit. At the stage, the startup has customers to test the product's viability and may achieve its first sales. The forms of financing used at these stages are angel investors, venture capitalists, accelerators and incubators. Securing funding in the pre-seed and seed stages can be particularly challenging for inexperienced founders, whereas those with prior experience are more likely to attract investors due to their track record of past successes and established relationships.

At the growth or scale- up stage, founders aim to expand the company's operations and achieve growth in revenues and workforce. Consistent profitability is necessary to generate returns for investors and fund the journey towards market leadership. This stage can be categorized into two phases: Early growth (Series A) and late growth (Series B). In Series A, there is product market fit and proof of business viability, which is necessary to secure venture capital funding.

During this phase, the emphasis shifts towards sales and marketing efforts aimed at increasing customer acquisition. As the pressure to grow increases, this is the stage to pitch investors. Early growth usually includes the first venture capital funding facilitating exits for angel investors. Late growth involves series of funding. Each round of financing (starting with Series A) lasts approximately 12 to 18 months. Start-ups in this phase progress to the Series B round of venture capital funding. Sources include venture capital firms, corporate investors, and private equity firms. Investors want detailed financial proof of company's current performance, projected success. The venture capitalists investing in series funding and growth equity are the main forms of funding. Venture debt is another potential source of funding for venture-backed companies. Venture debt is a type of loan offered by banks and non-bank lenders that can extend a start-up's cash runway after a venture capital equity round.

Only 40% of early stage start-ups manage to secure the necessary funding in the early growth stage (Spiegel et al., 2016). Early-stage start-ups encounter the "Valley of Death", which describes a gap between business angel investors and more institutional investors, such as Venture Capitalists (Figure 1). A start-up is successful if it has secured funding at the growth stage. Success for start-ups also refers to "cashing out" investments through acquisitions (Croce et al., 2016).

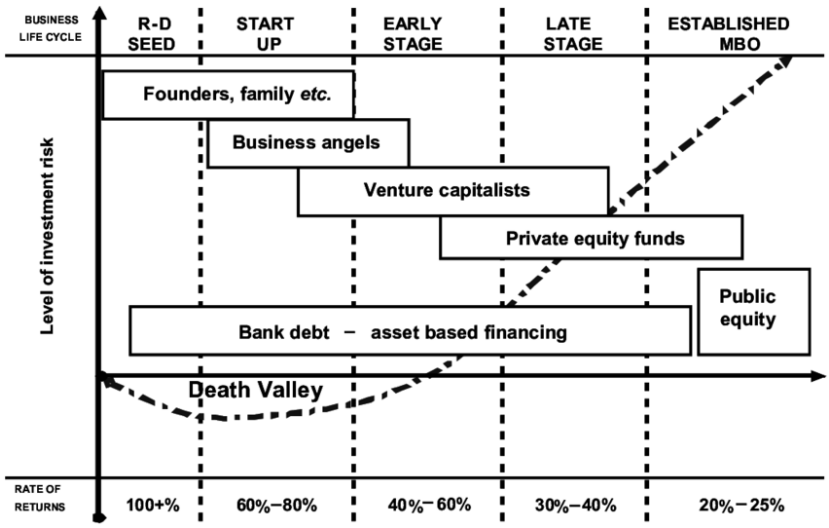

Figure 2: Valley of Death (Hermann, 2022)

The last stage of a startup is the exit stage, which typically includes a merger, acquisition or sale of the start-up. In most of the times, the exit strategy leads to the closure of the startup and the establishment of a new company that continues the business. In the exit stage, start-ups are well-established companies, having a stable position in the market with substantial growth and seeking opportunities for expansion. Investors often request for a clearly defined exit strategy before they provide funding. Realizing the accumulated value of the venture for the benefit of the entrepreneur and investor is a successful exit (Tariq, 2013).

Another theory mentions that a start-up has a life cycle through three stages emergence, survival, and growth. The emergence stage has operations without generating any revenue; the survival stage has revenue-generating but unprofitable operations; and the growth stage has a profitable revenue stream (Kalyanasundaram et al., 2021). According to the study by Leach and Melicher (2012), the funding phases are as follows:

- Seed capital
- Start-up financing
- Stage 1 Financing
- Stage 2 Financing
- Bridge (interim) financing.

Seed capital

During this stage, funding is derived from the entrepreneur's personal resources or from sources within their immediate network. The skills and abilities of the founding team are crucial factors for the future success and development of the start-up. The financing offered to the business is high-risk, as there is no security as to the future of the business.

Start-up financing

During this phase, the product is finalized and is now available for sale in the market and the company starts using marketing and advertising. The risk factor is lower since there is information about the company's activities in the market and can thus approach a wide range of investors, such as angel investors or private equity firms.

Stage 1 Financing

As the company grows in sales and profits and increases its market share, it moves at the end of the early stages of funding. At this stage, investors have sufficient information to evaluate the company's viability in the market. Metrics such as the sales growth and the company's profits are used.

Stage 2 Financing

Further development of operations and increasing growth are crucial to this phase. The need for further expansion and related funding exists but the risk is less and the interest of potential investors is higher. As a result, the prospects of further funding are higher.

Bridge (interim) financing

During this phase, there is need for further funding of the business surpassing the regular loan with the aim to increase its growth and future value to prospective investors who may be interested in purchasing a portion of the company in the form of shares. At a later phase, the company can pursue external funding from sources such as venture capital firms, among others, to support its growth and development. The founder(s) of the startup often have to rely on their personal resources to provide the initial funding, as potential investors are hesitant to invest. During the growth stage, there are numerous funding sources available, with the primary ones being: venture capital, banks and business angels. As the growth advances, the revenues are growing, the risk is reduced, and the financing sources are stabilized.

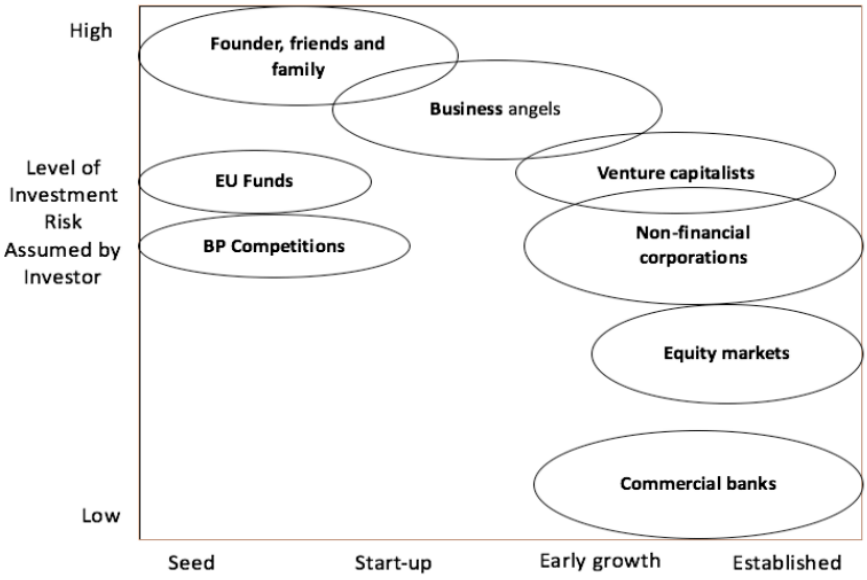

Figure 3: Funding Options Depending on the Stage of Development of Entrepreneurial Firm (Leach and Melicher, 2012)

At various stages of a startup's life cycle, its needs extend beyond mere funding. Baum and Silverman (2004) categorize the start-ups' needs into surviving, scouting, and coaching. Start-ups strive to remain operational and survive at different stages of their life cycle (Block et al. 2018). In their early stages, start-ups have limited partner networks and a high need for scouting (Amit et al. 1998). Furthermore, early-stage start-ups need extensive coaching for taking important business decisions (Fraser et al. 2015; Quas et al. 2021). During the early and mid-stages, most start-ups are willing to compromise their autonomy to secure the necessary funding (Vaznyte and Andries 2019). As start-ups progress into mid- and late-stage of development, they develop their own networks and capabilities and the need for guidance gradually diminishes, while the need for autonomy increases (Berger and Udell 1998).

2.2.2 Sources of funding

Astrid Romain (2003) classified the sources of finance into two categories: internal and external. Internal financing sources usually relate to the early stages of the business, the planning phase/seed phase. These sources include the entrepreneur's own funds or funds from close network, relatives and friends with little or no additional non- financial support such as business advice and business networking opportunities (Chua et al. 2011). External financing options become available to a company once it is established and actively operating in the market. For a start-up and beyond, there are various external sources of financing available including: Banking institutions, Venture capital, Factoring, Leasing, Business angels, Crowdfunding, Initial Public Offering.

Banking institutions

Bank loans are one of the most traditional financing methods for start-ups. However, it not the most desirable way for obtaining capital as the borrower has to return the initial capital along with an interest

rate. Additionally, banking institutions provide loans after evaluating the capacity (creditworthiness) of the borrower to repay the amount. Start-up businesses usually acquire short- term loans to finance their operations. Long-term loans are used to acquire capital assets as well as fundamental business needs. Long-term loans have a lower interest rate as the repayment period for such loans is longer. Start-ups may sometimes have the option of paying only the loan interest during the first years with the aim to support their business's growth. Furthermore, the repayment of the loan may be adapted to the needs of the entrepreneur. Banks view financing start-ups as high-risk investments because of conditions of uncertainty and asymmetric information, according to Puri, Rocholl, and Steffen (2011). Bank loans are suitable financing instruments for late-stage start-ups, as they can provide data for cash flow analyses and undergo reviews required for the examination of their past performance by banks. Furthermore, bank loans do not affect the start-up ownership structure and allow late-stage start-ups the necessary financing and autonomy to grow. Furthermore, banks do not provide scouting and coaching services, which is vital for the start-ups initial survival in the early and mid-stages of their life cycles (Baum and Silverman, 2004).

Venture capital

Venture capital is a form of private equity, which is given to start-ups in exchange of part of the ownership. During the capital investment, there is a shared ownership and the start-up founders and venture capitalists are partners, working towards the shared objective of generating profit. They take active role in the start-up's decision-making and management with the aim to improve the success and profitability in the future.

This financing method brings together executives of venture capital management firms, firms searching for funding, and potential investors. The investment fund manager is involved in management and the provision of supplementary services such as consulting to the firm that is receiving funding (Quas et al. 2021). Usually, investments have a duration of five to seven years. Upon the completion of the investment period, the investor expects to receive back the amount invested in the business along with a return on investment. The return on investment typically comes from either the company's listing on the stock exchange and the sale of shares or from the sale of the entire company (Savaneviciene, Venckuviene, & Girdauskiene, 2015). Venture capitalists are equity providers for start-ups at early, mid, and late-stage and tend to invest for longer periods than other capital providers, with the termination of their involvement typically occurring through an exit event (Miloud et al. 2012). Late-stage start-ups might refrain from using venture capital given the required return on investment and the major autonomy trade-offs demanded by venture capitalists, especially when cheaper debt funding alternatives are available (Berger and Udell 1998).

Venture capital firms such as Metavallon, Genesis Ventures, BigPi Ventures and Marathon Venture Capital play a crucial role in supporting the growth of Greece's startup ecosystem, offering capital, expertise, and support to emerging start-ups both within Greece and beyond.

Governmental venture capital

Governments promote start-up entrepreneurship by governmental venture capital funds (Colombo et al., 2018). While such funds offer equity and additional services, governmental venture capital funds are beneficial only during the late stage of a start-up's life cycle. Considering the potential political biases,

their reputation depends on the trade-offs regarding autonomy and financing costs (Bertoni et al. 2019). Colombo et al. (2019) find that regular venture capital funding results in higher exit performance than governmental venture capital funding.

Corporate venture capital

Established firms frequently invest in start-ups to increase their strategic portfolios and capabilities (Kang et al. 2021). Corporate venture capital refers to the practice of large companies making equity investments in start-ups to acquire external resources. Corporate venture capital activities are considered complementary to firm-level innovation (Dushnitsky and Lenox 2005). Established firms such as Google and Samsung still use corporate venture capital to improve their innovation (Drover et al. 2017). Corporate venture capitalists grant less autonomy to their investees than regular venture capitalists (Block et al. 2018). Corporate venture capital funds offer additional services similar to those of regular venture capitalists. Therefore, corporate venture capital funds seem beneficial only for the survival of late-stage start-ups.

Factoring

Factoring is a financing method for large businesses with limited liability. It allows businesses to convert their accounts receivable (invoices) into cash. Factoring finance is also known as invoice factoring or accounts receivable financing. Tariq (2013) observed that start-ups generally do not utilize this financing method for their needs.

Mini bonds

The post-financial crisis capital gap, when start-ups struggled to obtain traditional bank financing, resulted in the introduction of new debt sources such as mini bonds. Mini bonds allow start-ups to gain independence from traditional debt providers such as banks (Block et al. 2018). Similar to bank loans, raising debt through mini bonds does not include additional services such as coaching and scouting (Boccaletti et al. 2022). Thus, mini bonds are a late mid-stage and late-stage debt source that does not restrict a startup's autonomy.

Leasing

Leasing is a usual method for firms to acquire assets and capital equipment without investing its own equity. A business that chooses this funding option is essentially gaining or expanding its capital equipment without investing its own equity since the lease provider supplies the funds. Start-ups, access to new equipment, which improves their operations and lease expenses are regarded as the company's expenses and reduce its taxable income. When the lease expires, the lessee has the option to purchase the asset at a price lower than its actual value at the start of the lease. The leasing agreement's conditions are adjustable and may be customized to meet the needs of the lessee. The leasing approach is used mainly by start-ups, which aim at growing further, after establishing themselves in the market.

Business angels

Private investors known as angel investors are individuals with significant wealth, experience, and willingness to invest in start-up companies to assist young entrepreneurs while also earning profits (Ramadani, 2009). Many business angels have significant experience in managing companies and have a

track record of success. However, despite their past successes as entrepreneurs or executives, business angels may lack the specific knowledge and skills to manage the companies they invest in (Ramadani, 2009).

Business angels typically invest in privately held companies not listed on the stock market. Due to the high risk associated with such investments, they generally allocate only 5-15% of their assets to these ventures (Ramadani, 2009).

Angel investors offer seed capital and consulting services to start-ups (Drover et al. 2017). Angel investors are compared to venture capitalists. However, angel investors mostly provide less structured support and have more informal investment procedures than venture capitalists (Drover et al. 2017). By contrast, they might grant more autonomy to their investments than venture capitalists (Block et al. 2018).

Angel investors are equity providers for start-ups at early, mid-, and late-stage offering limited amounts of capital, scouting for new investment opportunities, and providing non-monetary services to start-ups. Unlike venture capitalists, the extent of their investment and coaching is relatively limited (Drover et al. 2017). Consequently, angel investors serve as a supplementary equity source that can be combined with other capital sources, particularly in the early and mid-stages of a start-up's life cycle.

Crowdfunding

Crowdfunding emerged as a funding method in 2008 due to the significant challenges entrepreneurs faced in raising capital amid the financial crisis and the banks' inability to lend money. The economic downturn and the evolving market needs contributed to the increase of popularity of use of this form of funding in relation to other sources.

Crowdfunding is a method of raising small amounts of money from a large number of donors using the internet and social media, eliminating the need for financial intermediaries. Crowdfunding typically involves no obligation for the business receiving the funding, as it usually takes the form of a donation. This method has become increasingly popular for many start-ups wishing to raise the initial seed capital required to start their business (Belleflamme et al, 2013). The primary kinds of crowdsourcing are listed below (Paschen, 2016):

- The donation model: Individuals who are interested in supporting a project seeking funding may donate an amount and may receive incentives or rewards in return.
- The reward model: Individuals contribute a certain amount of money and anticipate receiving a benefit, which usually comes in the form of a service or a discount on a future purchase, or other similar offerings.
- The private lending model: This is a method when businesses approach other businesses or financial institutions for requesting specific amount of funding and demands specialized expertise and knowledge to execute this online fundraising effort.
- The equity model: Individuals who provide funding get a share in the business as a return on investment and automatically become an integral part of the business.

To summarize, crowdfunding is a fundraising method that involves collecting small individual contributions through online platforms to reach a predetermined funding target for a project. Crowds can also serve as a source of organizational learning given their ability to provide start-ups with broad feedback. However, crowdfunding carries the risk of knowledge diffusion, and the success or failure of a campaign can depend more on the behavior of the investment community than on the trust and belief of individual investors. Additionally, due to the rapid access to funds in equity crowdfunding, it can serve as a dependable source of early-stage funding, particularly in cases where scouting and coaching are limited (Hornuf and Schwienbacher 2018).

Initial Public Offering (IPO)

An initial public offering (IPO) refers to the process of offering shares of a private corporation to the public. An IPO is a big step for a company as it provides the company with access to raising a lot of money. This gives the company a greater ability to grow and expand.

When a company goes public, the privately held shares are converted to public ownership. The public comprises any individual or institutional investor with an interest in investing in the company. Overall, the number of shares the company sells and the price at which shares are sold determine the company's new shareholders' equity value.

Private companies with strong fundamentals, proven profitability potential, and varying valuations can also qualify for an IPO, contingent upon market competition and their ability to meet listing requirements. The IPO process enhances the company's exposure, prestige, and public image, factors that can contribute to increased sales and profits.

European Funding Programs and Business Plan Competitions

European funding programs and business plan competitions is another great funding option for start-up companies that are in the early stage of development. Beyond raising capital, participants in such programs have the opportunity to broaden their business connections, forge new partnerships, and even engage with potential clients.

Business accelerators and incubators

Accelerators offer consultancy services and personal guidance by experienced managers as well as physical space and expertise to support start-ups' survival and success (Cumming et al. 2019). More specifically, accelerators offer short-term programs with support and mentorship over a short period, with the goal of accelerating companies and scaling them up. Seed accelerators support start-ups through fixed – term business programs, including guidance, education, mentorship, and funding, in exchange of part of the ownership of the startup.

A business incubator is an organization that helps start-up companies to develop their businesses by providing a full-scale range of services like technological infrastructure, office space, and expert guidance. Incubators programs generally last longer than accelerator programs. Incubators provide long-term support and resources to early-stage companies, with a focus on helping them grow and develop. Incubators also function as preparation for application to programs offered by Accelerators. Incubators

focus on creating an environment for co-creation and stimulate innovation. Incubators are usually independent but have connections to venture capital firms or funds, or universities.

Some notable incubators and incubation programs in Greece are the following:

The Cube Athens: This incubation program is a corporate initiative that aims to transform innovative ideas into successful ventures. Additionally, this incubator provides guidance on legal and financial matters and assists in finding qualified personnel for the start-up. Focused on the needs of growing markets, it provides funding at the initial stages of a company's existence.

Athens Startup Business incubator: The THEA incubator is an enterprise launched by the Athens Chamber of Commerce and Industry with the aim to encourage the emergence of new businesses. Its services comprise management support and custom-tailored training programs for start-ups. Moreover, THEA incubator offers office space and infrastructure.

THERMI Business incubator: The Thermi Incubator is based in Thessaloniki and is aimed at supporting innovative start-ups to grow. The incubator provides a range of services, including finding investors and capital, hiring of workspace, and providing interface services with other businesses and organizations.

IQbility incubator: This is a program offered by Quest, which focuses on novel concepts in the technology industry. It provides guidance to start-ups and actively encourages them to get established in the market. Legal and accounting services as well as the provision of office space are included among the support offered by the incubator to start-ups.

Incubation 4 Growth business incubator: Located in Thessaloniki, this is Greece's pioneer business incubator, offering comprehensive support services to start-ups, and functioning as a mediator for securing capital from investors. The program provides additional assistance to entrepreneurs through various training schemes.

Accelerators and incubators typically survey the market and collaborate with start-ups to enhance their skills (Fraser et al., 2015). While accelerators and incubators often acquire equity stakes for their services, funding appears to have a secondary role (Cumming et al., 2019). Therefore, incubators and accelerators serve as valuable complementary partners for early- and mid-stage start-ups.

Technology & Science Parks

The notion of a science park was introduced in the United States, mainly as a project of universities. Within an innovation park, there are research centers, training centers, and facilities for technology testing. The primary industries within these parks include nanotechnology, biotechnology, and other advanced technology sectors. The most renowned center is the Silicon Valley, which is a hub for advanced technology and research.

The following are the main technological parks in Greece (Δαρδαμάνη Δ., 2009):

Science and Technology Park of Crete: With the support of the Foundation for Research and Technology-Hellas of the University of Crete, this science park was established to promote the growth of innovative start-ups. The park collaborates with European and domestic institutions on technology

development issues and offers specialized facilities for the development of advanced technologies. The park also maintains close partnerships with research and innovation centers within and outside the country's borders.

Patras Science Park: was established in the mid-1990s and offers information services, fosters entrepreneurship, and provides business support services, cutting-edge technology facilities, and advanced equipment. Additionally, it holds workshops and seminars related to innovation development.

The Lavrion Technology Park: was established by the National Technical University of Athens in collaboration with various internal and European institutions. The park provides a platform for regular technology workshops and seminars focusing on modern innovation and entrepreneurship and aims at facilitating collaboration between research and business.

Thessaloniki Technology Park: was established in the mid-1990s with the goal of promoting innovation and fostering entrepreneurship. Its continued support for start-ups and entrepreneurial initiatives is a significant aspect of the park's activities. The Thessaloniki Technology Park is also a key and founding member of the Hellenic Association of Science and Technology Parks.

In addition to these parks, there are other notable technology parks in Greece that support entrepreneurship and innovation, such as the Epirus Technology Park, the Thessaly Technology Park, the "Lefkippos" Attica Science and Technology Park, and more.

There is a growing necessity for investments in technology parks in Greece resulting from the current state of global markets and the demand to keep up with emerging technologies (Vassilios Kelessidis, 1999).

2.3 Determinants of start-up success

Previous research shows that startup teams play a crucial role in determining startup performance. The startup team comprises individuals responsible for the strategic decision- making and ongoing operations. Given the challenging environments of high competition and uncertainty in which start-ups operate, team members must be highly motivated and hardworking if they aim to succeed.

Bernstein et al. (2014) findings show that human capital assets are crucial for the success of early stage firms. However, as the firm develops, principal business assets such as patents, technology, and physical assets are key to success. Kaplan et al. (2009) found that a strong business appears to be necessary for a company to succeed. Franke, Gruber, Harhoff, & Henkel (2008) found that industry experience, educational background, and leadership experience are the three most important characteristics. Cassar (2014) suggests that entrepreneurial background is the key to success, arguing that cognitive skills, acquired from previous entrepreneurial endeavours, help assess and evaluate new business opportunities. Santisteban and Mauricio (2017) aimed to identify success factors by reviewing existing studies and found that previous startup experience as well as industry experience, venture capital, management expertise and technological skills is widely discussed in the literature.

Investors place significant emphasis on the manager's leadership qualities, flexibility, past experience, and ability to identify risks and make realistic forecasts. These skills are developed through experiences.

During the early stages of their life cycle, start-ups require more than just investment. To compensate for their lack of experience, visibility, and business networks, scouting and coaching are crucial (Baum and Silverman, 2004). Venture capitalists and angel investors are particularly suitable partners for early-stage start-ups (Drover et al., 2017). Accelerators and incubators also play a role in meeting scouting and coaching needs. However, their equity alone may not be sufficient to ensure a start-up's survival without additional investors (Block et al., 2018). Venture debt lenders, on the other hand, cannot provide the essential scouting and coaching services needed at this stage (Lehnertz et al., 2022). Therefore, venture debt should be utilized to complement existing equity investment or by start-ups with high levels of experience and market visibility.

During the mid-stage of a startup's development, its visibility and experience typically increase, leading to a wider array of funding options (Berger and Udell, 1998). While venture capitalists, angel investors, accelerators, and incubators remain viable partners, bank loans and crowdfunding projects emerge as suitable alternatives. Debt providers often base their investment decisions on past performance data, which can be advantageous for mid-stage start-ups with a track record to showcase (Polzin et al., 2018).

2.4 The Greek landscape

Greece's innovation performance gap with the EU is increasing over the years (European Innovation Scoreboard, 2023). In parallel, the startup ecosystem is growing. According to "Startup Blink Global Ecosystem Report for 2022", Greek start-ups raised over €500M in 2021 -almost triple compared to previous year's investments. Additionally, two Greek companies have reached a valuation of $1 billion without been listed on the stock market, becoming the so-called unicorn companies.

However, problems such as inflation, the Ukrainian war and geopolitical instability, and the energy crisis negatively affected growth of the ecosystem compared to 2021 (Digital Transformation in Greece, 2022-2023). 2022 was a year with a slowdown on the growth, given the international circumstances (Report "Start-ups in Greece, Venture Financing", 2022-2023). There was a 30-40% slow-down in the funding of Greek start-ups, compared to 2021 in capital raised by Greek start-ups. The majority of this year's investments were equity financing. On the contrary, investments in early-stage start-ups was smaller. Furthermore, there were changes in the venture capital landscape. Established venture capital funds have slowed their investments since the inception of the EquiFund mechanism. EquiFund ended after five years of supporting more than 138 companies and providing more than €1.13B of financing.

Simultaneously, the establishment of the first Greek business angel fund, which co-invests in early-stage tech companies located in Greece, alongside the formation of a Hellenic Business Angels Network (HeBAN), illustrates the growth and maturation of the Greek venture capital and startup ecosystem. A new co-investment fund with business angels, called Genesis Ventures, with the active involvement of angel investors, backed by the European Investment Fund (EIF), appeared. Legislation regarding tax benefits for angel investors who invest in start-ups has been implemented. Angel investors can now claim 50% of their capital contribution in a startup as income-tax deductible through the Elevate Greece platform. Given the government incentives and the growth of Greek start-ups, the investment

environment changed with the emergence of Greek angel investors, such as the Hellenic Business Angels Network (HeBAN), the Hellenic Tech Investor Club (Theti Club), the Genesis Ventures and SeedBlink.

The public sector assumes a pioneering role in the development of the startup ecosystem, particularly in establishing networks to promote and mentor potential entrepreneurs and directing investor interest toward early-stage start-ups. Elevate Greece and Startup Greece are two government initiatives that bring start-ups and investors together to provide a more comprehensive look at the startup landscape. The Ministry introduced a set of measures including a state-aid scheme to support registered start-ups of "Elevate Greece" with non-refundable working capital injections. Other measures include tax incentives for Angel Investors, tax incentives with regard to Research and Development expenses, a specially designed innovation loan backed by Hellenic Development Bank, and decreased bureaucracy with public services.

Elevate Greece is the official startup database platform which helps start-ups to grow by offering international visibility, networking opportunities as well as support measures by state authorities and Venture Capital Funds and Angel Investors. The Registry spans across industries, representing 828 start-ups from various sectors. The Registry includes legal entities with specific characteristics. More specifically, these are:

- Personal (Individual) Companies or Limited Liability Companies or Société Anonymes (SA) with headquarters in Greece or having a subsidiary or a branch in Greece (with a Greek VAT number), if headquarters are not located in Greece.
- Companies with no operations for more than 8 years since its establishment.
- Companies employing fewer than 250 employees Full-Time Equivalent during the last year of operation.
- Companies with annual turnover less than 50 million Euros, as recorded in the financial statements of the previous fiscal year.

The majority of registered start-ups are based in Attica, followed by Central Macedonia, Crete, Western Greece, Eastern Macedonia, Thrace, Epirus, North Aegean, South Aegean, Western Macedonia, Ionian Islands and Peloponnese. The three most important sectors of activity of registered start-ups are: Life Sciences (Med Tech, Health Tech, Bio Tech), Environment (Environment, Energy-Green Tech, Clean Tech) and Travel, Hospitality, Leisure.

In Greece, there are two prominent programs catering to scale-ups and advanced start-ups: the Endeavor Entrepreneurs Program, which aids fast-growing entrepreneurs in 43 markets, and the Scale Up Program, designed to support the next generation of high-tech companies experiencing rapid growth. Endeavor Greece has actively mapped Diaspora start-ups and has identified 523 such start-ups.

Furthermore, there is active involvement of start-ups in the venture capital and financing ecosystem. Although the market anticipates the emergence of new funds, the new funding landscape in Greece is expected to present a different outlook compared to the EquiFund period (2018-2021). In 2023, the utilization of European resources, totaling over €72 billion from the Recovery and Resilience Fund (National Plan Greece 2.0) and the NSRF 2021-2027, represents a unique challenge and historic opportunity for the country.

According to the Startup Blink report, Greece boasts a highly skilled workforce but encounters the challenge of retaining this talent while simultaneously nurturing an entrepreneurial mindset through education and training. Many members of the Greek diaspora have achieved success as entrepreneurs and startup investors, contributing to the establishment and funding of start-ups globally. Greece is anticipated to further advance its maturation process, emerging as an active participant in the Central and Eastern European ecosystem.

According to the StartupBlink world index, Greece also ranks at number 18 for start-ups in Western Europe, among 22 countries, followed by Cyprus, Malta, Liechtenstein and Andorra and is an ideal place to locate Social & Leisure, Transportation, and Foodtech start-ups. However, the country still remains behind Bulgaria and Romania. Athens is the top-ranked Greek city in an index of 1,000 cities ranking at 132. The city has a startup ecosystem with many co-working spaces, incubators, and accelerators. Most successful start-ups in Greece, including Taxibeat, Workable, and Blueground are based in Athens. Thessaloniki has a vibrant startup ecosystem with many co-working spaces, incubators, and accelerators.

In 2022, Greece witnessed a record-breaking number of exits, with 19 Greek start-ups being acquired by companies both domestically and internationally. Among the most notable acquisitions were Viva Wallet, which was partially acquired by the U.S. conglomerate JP Morgan, Pollfish acquired by the U.S. company Prodege, and Accusonus acquired by Meta. Interestingly, investments involving non-Greek investors accounted for 73% of total investments this year, highlighting the outward orientation of our ecosystem and the growth of established start-ups in Greece. Based on the above, we can conclude that further growth of the Greek start-up ecosystem can be achieved by attracting international talent and international investments, connecting with foreign innovation ecosystems and hosting international projects, events and initiatives.

3. Research

3.1 Research design

As literature shows, business success is a result of the founders' personal motivations and experience as well as specific actions such as development of a business plan, consultation with experts and participation in networking activities and collaboration with the ecosystem as well as governmental support. Funding sources and core competences are essential elements of the knowledge creation process that leads a start-up to improve its performance (Hasani and O'Reilly, 2020).

The start-up ecosystem has developed over time and there are new stakeholders supporting the monetary and non-monetary needs of start-ups and their consequent development and growth. Start-ups have nowadays access to a network of industry experts, business mentors, investors, and corporate partners that apart from funding also offer mentorship and guided support that creates an environment for business acceleration and start up growth. More specifically, accelerators and incubators are important parts of the start-up ecosystem offering pitching opportunities and networking events with investors.

The objective of this study is to investigate the challenges of a start-up and identify the factors along the way that enable the founder to build a successful start-up. We use a survey to explore the characteristics and challenges for start- ups in Greece, especially as to the funding environment.

3.2 Research Methodology

The survey was available online for over a month, from December 27th, 2023 to February 15th, 2024. The survey included twenty-one qualitative and quantitative mandatory questions, in English. In particular, the survey included 15 questions about the company (legal form, business sector, country of establishment, years of operation, growth stage) as well as information about the company's founding members and employees (average age, experience and motivation) and 6 questions concerning funding (sources, amount, challenges and determinants/ critical factors for start- up growth). In particular, the questions raised were:

- About the years of operation, the country of establishment, the legal form of the start-up, the primary and secondary business sector, the number and gender of co- founders, the number of the employs.
- if co- founders have previously tried to establish a start-up company or not, if co- founders have previous experience, the main incentives for the creation of the start-up and the stage of start- up growth.
- the types and amount of funding that the start-up used, the turnover of the start-up the last three years of its operation and the difficulties that the start-up faced.
- if they used funding and business support mechanisms and the level of funding provided and
- the determinants of start- up funding and growth and plans for internationalization.

The survey is available in appendix of this dissertation.

The survey questions were set up in Googlesurvey platform. A statement in the introduction of the survey recognized the sensitivity and importance of confidentiality of information, stating that the responses will be anonymized and analyzed according to GDPR 679/2016.

During the answer collection phase, informational emails were sent to representatives of the innovation ecocystem, as follows:

- Incubators
- Research Organisations
- Clusters
- Science and Technology parks
- Technology Transfer Offices
- Accelerators
- Venture capital funds

The messages explained the subject of the dissertation and the purpose of the research being carried out, asking to promote the message to the start-up companies. The survey was promoted to social media, facebook and linkedin. An email- invitation to the survey was sent to the start-ups registered in Elevate Greece, the National Start-up Registry, which is the official record of start-ups in Greece.

Data analysis aims to investigate the challenges encountered by Greek start-ups and correlation of these challenges with the stages of start- up growth and start-up funding, and produce conclusions and suggestions for the improvement and strengthening of the existing start-up ecosystem.

This research aims at answering the following questions :

1. Does prior experience in another start-up relate with the total amount of funding raised?
2. Does prior experience in the core-business sector relate with the total amount of funding raised?
3. What is the relation between the stages of start-up growth and the funding sources used?
4. Is there a correlation between the challenges, determinants of funding and determinants of start-up growth?

Research results

The sample of businesses participating in the research consisted of 102 start-ups. The sample was relatively small. This chapter presents an analysis of the data collected.

How many years does your company operate?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-2	50	49,0	49,0	49,0
	3-4	35	34,3	34,3	83,3
	5-7	13	12,7	12,7	96,1
	8-10	4	3,9	3,9	100,0
	Total	102	100,0	100,0	

Table1: Years of company's operation

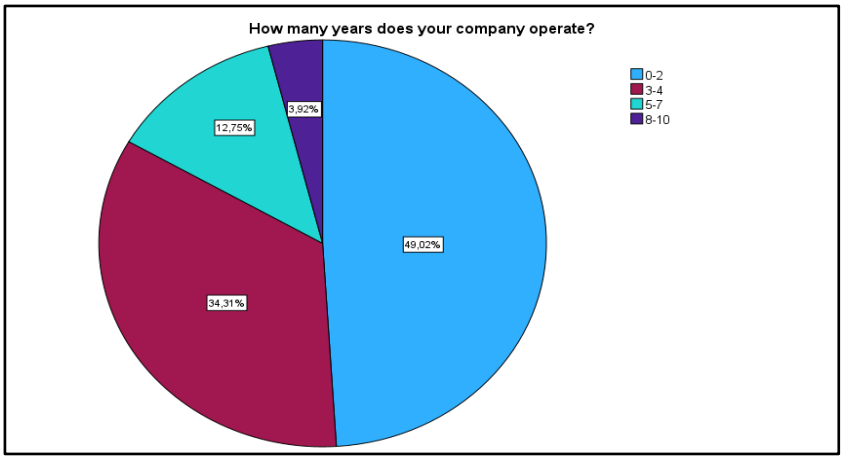

Figure 4: Years of company's operation

According to Table1 and Figure 1, almost one in two companies (49.02%) in the sample has "0-2" years of operation, 34.31% has "3-4" years of operation, 12.75% has "5-7" years of operation and only 3.9% has "8-10" years of operation.

Are you a member of Elevate?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	17,6	17,6	17,6
	Yes	84	82,4	82,4	100,0
	Total	102	100,0	100,0	

Table2: Member of *Elevate Greece* (yes/no)

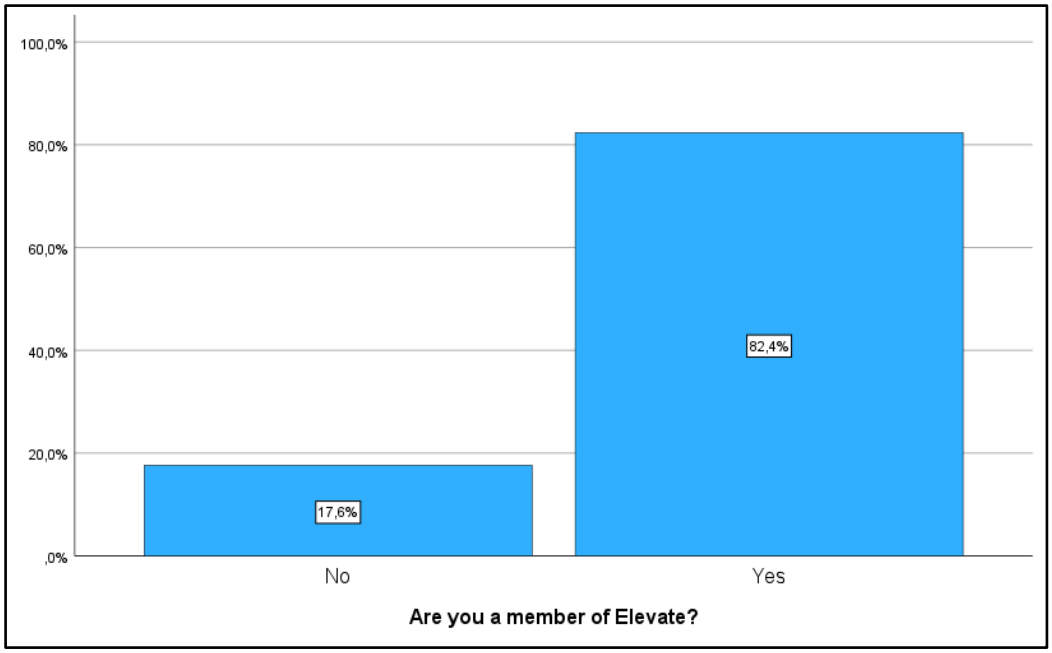

Figure 5: Member of *Elevate Greece* (yes/no)

Table 2 and Figure 2 shows that the majority of the start-ups (82.4%) having responded to the questionnaire are members of Elevate Greece.

Where did you initially establish your start-up company?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Greece	92	90,2	90,2	90,2
	Abroad	10	9,8	9,8	100,0
	Total	102	100,0	100,0	

Table3: Region of initial establishment of the start-up company (Greece/Abroad)

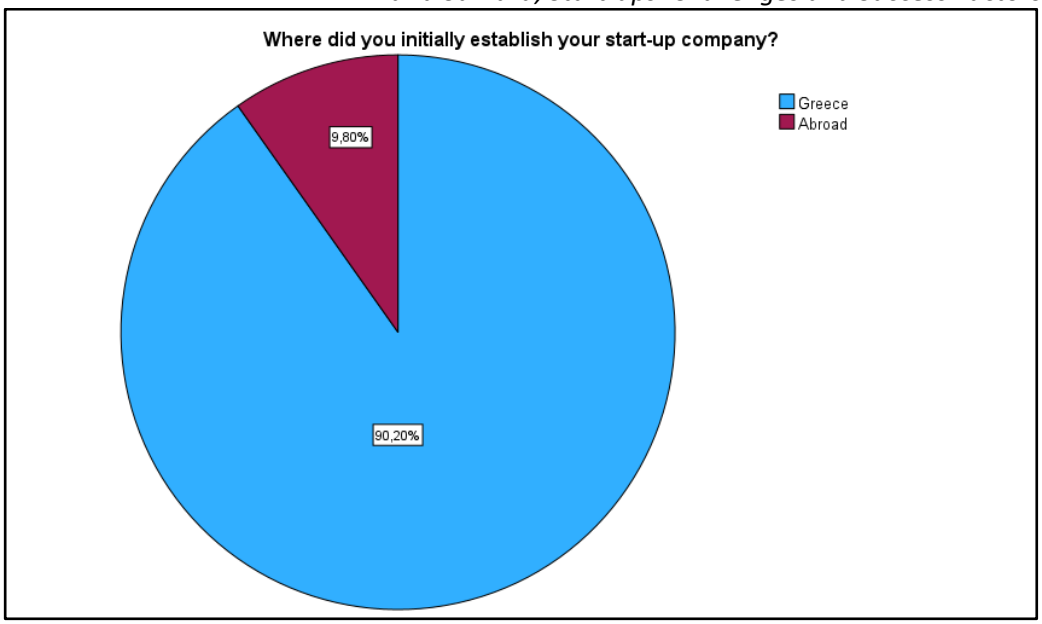

Figure 6: Region of initial establishment of the start-up company (Greece/Abroad)

Concerning whether the start-up company is initially established in Greece or Abroad, most companies answered that they were established in Greece (90.20%) as we see in Table 3 and Figure 3. Only 9.8% of the sample is established Abroad.

What is the company's legal form?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Private Capital Company - Ιδιωτική Κεφαλαιουχική Εταιρεία (I.K.E.)	84	82,4	82,4	82,4
	Societe Anonyme - Ανώνυμη Εταιρεία (A.E.)	9	8,8	8,8	91,2
	Individual Business - Ατομική Επιχείρηση	4	3,9	3,9	95,1
	Limited Partnership - Ετερόρρυθμη Εταιρεία (E. E.)	1	1,0	1,0	96,1
	Limited Liability Company - Εταιρεία Περιορισμένης Ευθύνης (E.Π.E.)	4	3,9	3,9	100,0
	Total	102	100,0	100,0	

Table4: Company's legal form

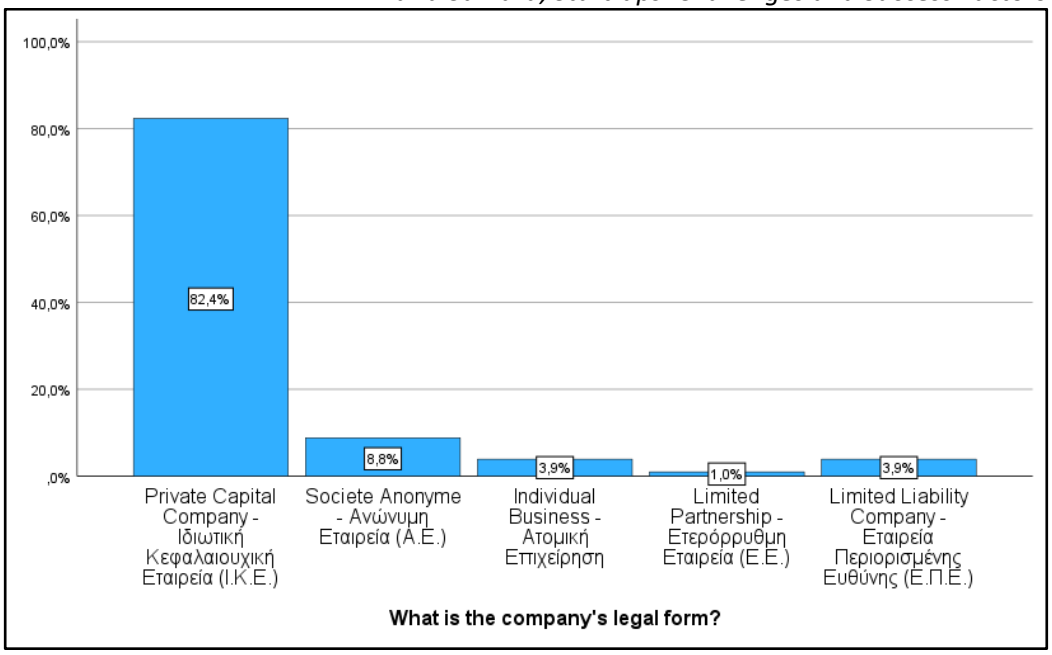

Figure 7: Company's legal form

Regarding the legal form of the company, Table 4 and Figure 4 shows that the majority of the start-up companies of the sample (82.4%) are Private Capital Companies (Ιδιωτικές Κεφαλαιουχικές Εταιρείες - I.K.E.), 8.8% are Societes Anonyme (Ανώνυμες Εταιρείες - A.E.), 3.9% are Individual Business (Ατομικές Επιχειρήσεις), 3.9% are Limited Liability Companies (Εταιρείες Περιορισμένης Ευθύνης -E.Π.E.) and only 1% is a Limited Partnership (Ετερόρρυθμη Εταιρεία - E.E.).

I.K.E is a preferable legal form by a big difference since it is easier for entrepreneurs to establish such companies. The main characteristics of this form are the small required capital to create the company and the flexibility in corporation charter. In particular, an entrepreneur can set up a Private Capital Company (I.K.E) in only one day.

Which is your primary (core) business sector (industry)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AgriTech/FoodTech	9	8,8	8,8	8,8
	Art, Cultural and Creative Industries	1	1,0	1,0	9,8
	Artificial Intelligence Machine Learning	1	1,0	1,0	10,8
	Blockchain solutions	2	2,0	2,0	12,7
	Blockchain, media	1	1,0	1,0	13,7
	caretech	1	1,0	1,0	14,7
	Data Analytics- Big Data	8	7,8	7,8	22,5
	EduTech- Education	2	2,0	2,0	24,5
	Energy & Environment	7	6,9	6,9	31,4
	Entertainment/ Media (Games, Sports, Social)	2	2,0	2,0	33,3
	Entreprise software	5	4,9	4,9	38,2
	FinTech -Financial Services (WealthTech)	4	3,9	3,9	42,2
	Hardware	4	3,9	3,9	46,1
	InsurTech- Insurance	1	1,0	1,0	47,1
	Life Sciences (MedTech, HealthTech, BioTech)	25	24,5	24,5	71,6
	Manufacturing	3	2,9	2,9	74,5
	Maritime	2	2,0	2,0	76,5
	Mobility	4	3,9	3,9	80,4
	Philanthropic Fundraising Services	3	2,9	2,9	83,3
	Quantum computing and VQA development	1	1,0	1,0	84,3
	Real Estate	1	1,0	1,0	85,3
	RetailTech- E-commerce- FashionTech	3	2,9	2,9	88,2
	Robotics	2	2,0	2,0	90,2
	Semiconductors	1	1,0	1,0	91,2
	Space	1	1,0	1,0	92,2
	Sustainability/Urban landscape company	1	1,0	1,0	93,1
	Travel/ Hospitality/Leisure	3	2,9	2,9	96,1
	Typesetting / Typography	1	1,0	1,0	97,1
	Well Being	3	2,9	2,9	100,0
	Total	102	100,0	100,0	

Table5: Primary (core) business sector (industry)

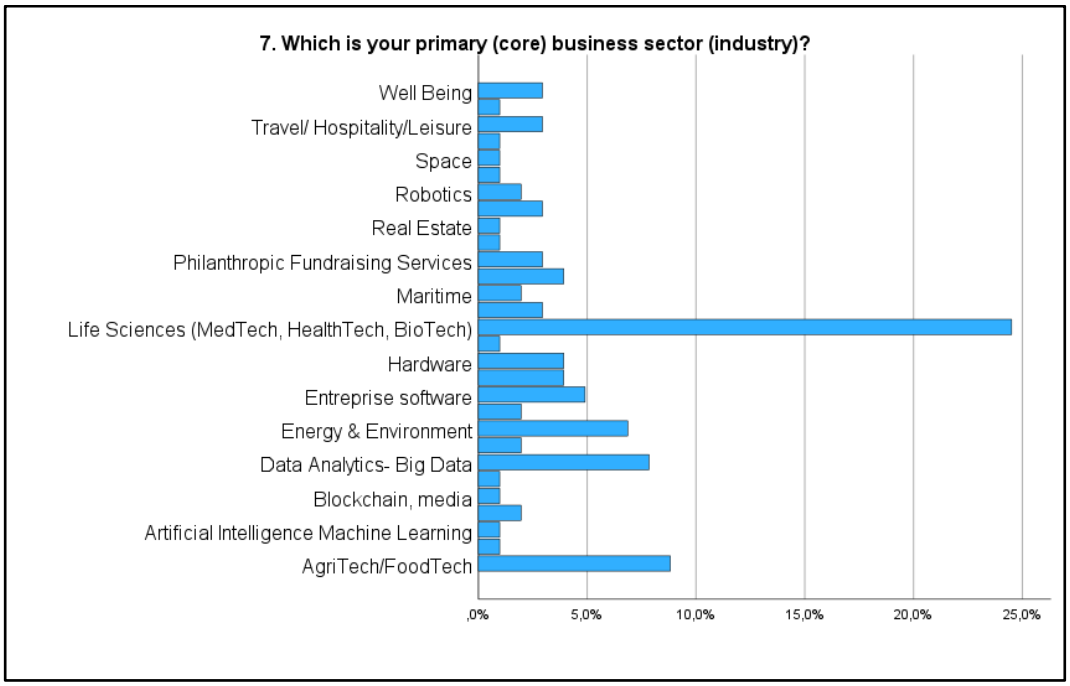

Figure 8: Primary (core) business sector (industry)

Which is your secondary business sector (industry)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Advertising & Markerting (AdTech)	4	3,9	3,9	3,9
	AgriTech/FoodTech	13	12,7	12,7	16,7
	Artificial Intelligence - Machine Learning	1	1,0	1,0	17,6
	Cleantech, greentech	1	1,0	1,0	18,6
	Cloud Services	1	1,0	1,0	19,6
	Data Analytics- Big Data	16	15,7	15,7	35,3
	EduTech- Education	2	2,0	2,0	37,3
	Energy & Environment	4	3,9	3,9	41,2
	Entertainment/ Media (Games, Sports, Social)	2	2,0	2,0	43,1
	Entreprise software	11	10,8	10,8	53,9
	FinTech -Financial Services (WealthTech)	4	3,9	3,9	57,8
	Hardware	4	3,9	3,9	61,8
	Life Sciences (MedTech, HealthTech, BioTech)	3	2,9	2,9	64,7
	Logistics and Transportation	3	2,9	2,9	67,6
	Manufacturing	6	5,9	5,9	73,5
	Mobility	3	2,9	2,9	76,5
	N/A	1	1,0	1,0	77,5
	NO	1	1,0	1,0	78,4
	Optics	2	2,0	2,0	80,4
	Print automation	1	1,0	1,0	81,4
	Propulsion	1	1,0	1,0	82,4
	Real Estate	2	2,0	2,0	84,3
	Regulatory, quality and product realization.	1	1,0	1,0	85,3
	Restaurant and nightlife reservations	1	1,0	1,0	86,3
	RetailTech- E-commerce- FashionTech	2	2,0	2,0	88,2
	Security	3	2,9	2,9	91,2
	Space	2	2,0	2,0	93,1
	Sustainability	1	1,0	1,0	94,1
	Telecommunications	1	1,0	1,0	95,1
	Well Being	5	4,9	4,9	100,0
	Total	102	100,0	100,0	

Table 6: Secondary business sector (industry)

Table 5 and Figure 5 show that the primary (core) business sector (industry) for 24.5% of the sample is Life Sciences (MedTech, HealthTech, BioTech). From Table 6, we notice that the secondary business sector (industry) is Data Analytics- Big Data for 15.7%, AgriTech/FoodTech for 12.2% and Enterprise software for 10.8% of the sample.

How many employees are currently employed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	24,5	24,5	24,5
	2	22	21,6	21,6	46,1
	3	14	13,7	13,7	59,8
	4	11	10,8	10,8	70,6
	5	30	29,4	29,4	100,0
	Total	102	100,0	100,0	

Table 7: Number of employees currently employed

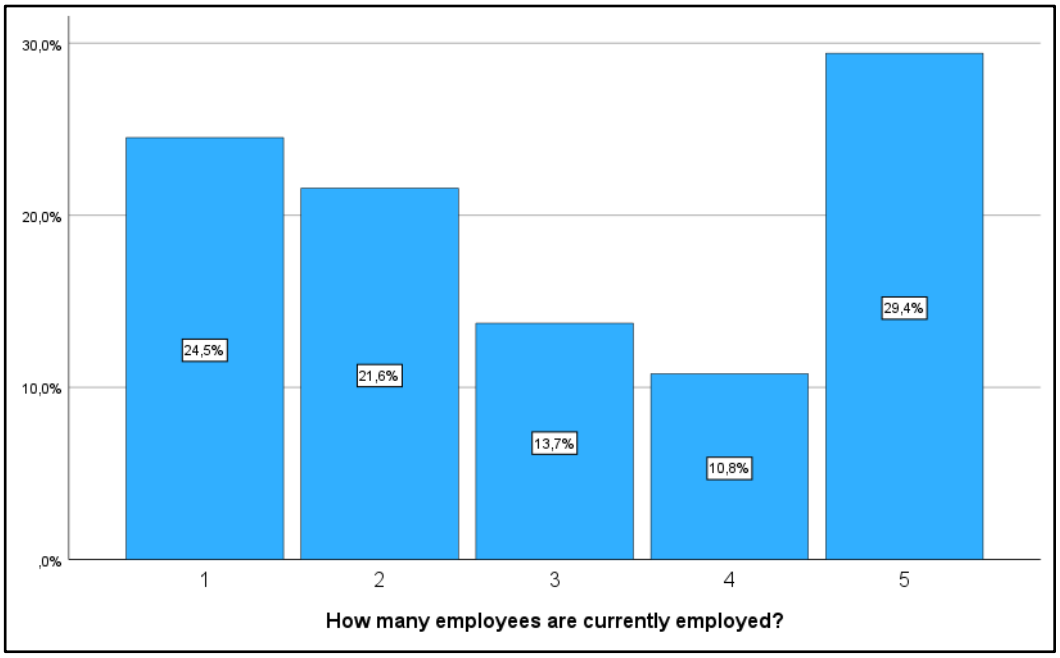

Figure 9: Number of employees currently employed

According to Table 7 and Figure 7, 30 start-up companies (29.4%) of the sample currently employ 5 employees, 25 start-up (24.5%) have only 1 employee, 22 start-up (21.6%) have 2 employees, 14 start-up (13.7%) have 3 employees and the remaining 10.8% of the sample of the start-up companies currently employ 4 employees.

How many are the company's co-founders?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	14,7	14,7	14,7
	2	33	32,4	32,4	47,1
	3	12	11,8	11,8	58,8
	4	26	25,5	25,5	84,3
	5	16	15,7	15,7	100,0
	Total	102	100,0	100,0	

Table 8: Number of company's co-founders

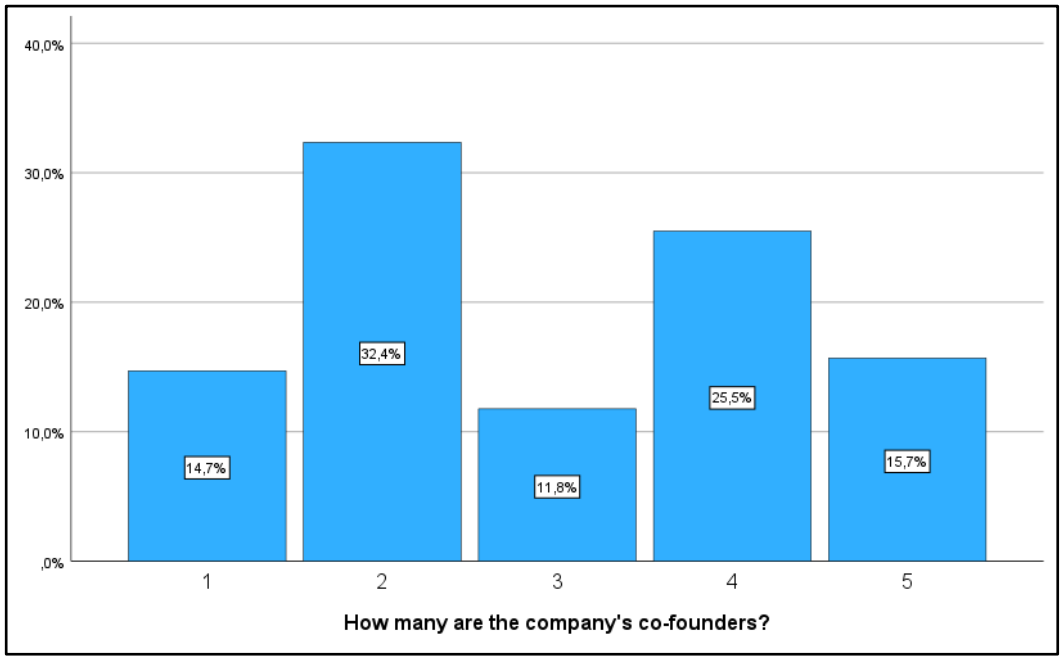

Figure 10: Number of company's co-founders

Table 8 and Figure 8 indicate that there are two co-founders for the 32.4% of the sample of the start-up companies, while 25.5% of the sample has four co-founders. In addition, 16 companies (15.7%) have five co-founders, 15 companies (14.7%) have only one co-founder and 12 (11.8%) companies have three co-founders. Thus, we can conclude that Greek entrepreneurs prefer to cooperate with people in order to create a company than taking all the decisions by themselves.

Gender of the company's co-founders? [Male]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	3,9	3,9	3,9
	1	24	23,5	23,5	27,5
	2	29	28,4	28,4	55,9
	3	15	14,7	14,7	70,6
	4	17	16,7	16,7	87,3
	5	13	12,7	12,7	100,0
	Total	102	100,0	100,0	

Table 9: Gender of the company's co-founders (Male)

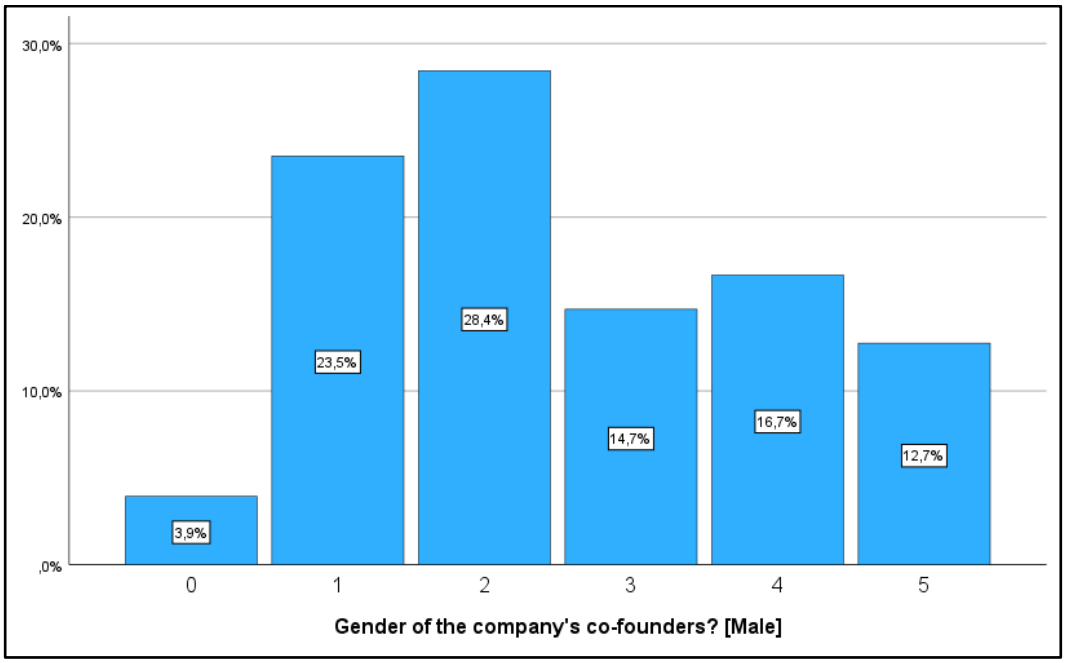

Figure 11: Gender of the company's co-founders (Male)

Gender of the company's co-founders? [Female]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	63	61,8	61,8	61,8
	1	24	23,5	23,5	85,3
	2	10	9,8	9,8	95,1
	3	4	3,9	3,9	99,0
	4	1	1,0	1,0	100,0
	Total	102	100,0	100,0	

Table10: Gender of the company's co-founders (Female)

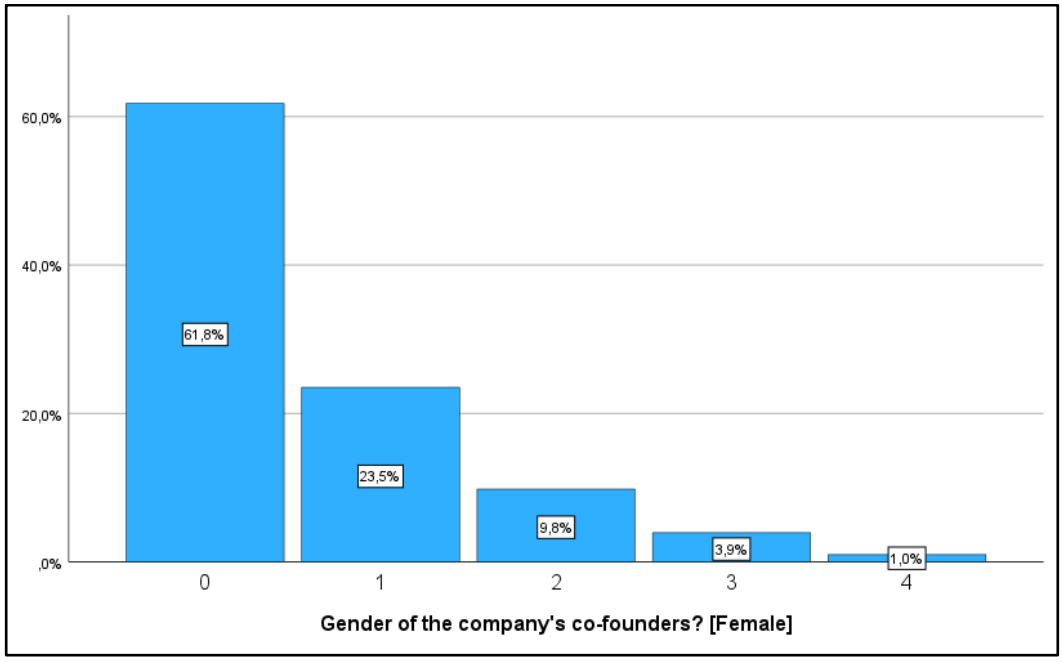

Figure 12: Gender of the company's co-founders (Female)

Gender of the company's co-founders? [Non-binary]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	101	99,0	99,0	99,0
	1	1	1,0	1,0	100,0
	Total	102	100,0	100,0	

Table11: Gender of the company's co-founders (Non-Binary)

Table 9 and Figure 9 show that the majority of the start-up companies of the sample (28.4%) have two male co-founders, while 23.5% of the sample of the companies have one male co-founder.

According to Table 10 and Figure 10, most companies have no female co-founders at all (61.8%). In 23.5% of the start-up companies of the sample there is one female co-founder, 10 companies (9.8%) have two female co-founders, 4 companies (3.9%) have three female co-founders and only 1 company has four female co-founders.

There is only one (1%) company in the sample of the start-up companies, which has a non-binary co-founder (see Table 11 & Figure 11).

Did co-founders have previous experience in another start-up?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	55,9	55,9	55,9
	Yes	45	44,1	44,1	100,0
	Total	102	100,0	100,0	

Table12: Co-founders previous experience in another start-up (yes/no)

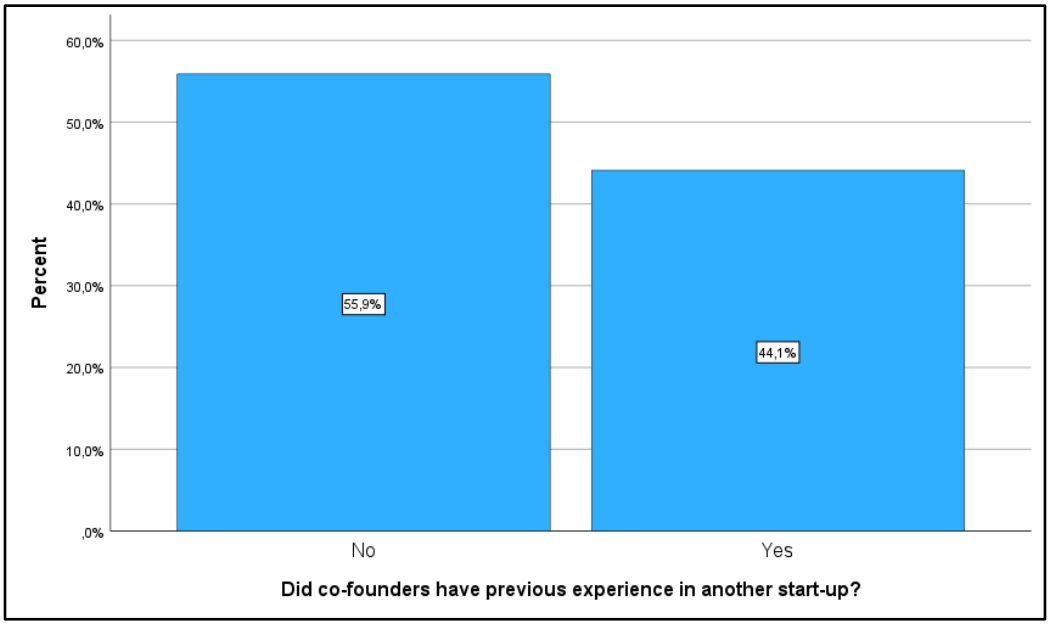

Figure 13: Co-founders previous experience in another start-up (yes/no)

Concerning the co-founders' previous experience in another start-up, Table 12 and Figure 12 show that the co-founders had no previous experience in another start-up for the majority of the companies of the sample (55.9%) while for the remaining 44.1% of the cases the co-founders had previous experience in another start-up.

Did co-founders have previous experience in the core business sector?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	44	43,1	43,1	43,1
	Yes	58	56,9	56,9	100,0
	Total	102	100,0	100,0	

Table13: Co-founders previous experience in the core business sector (yes/no)

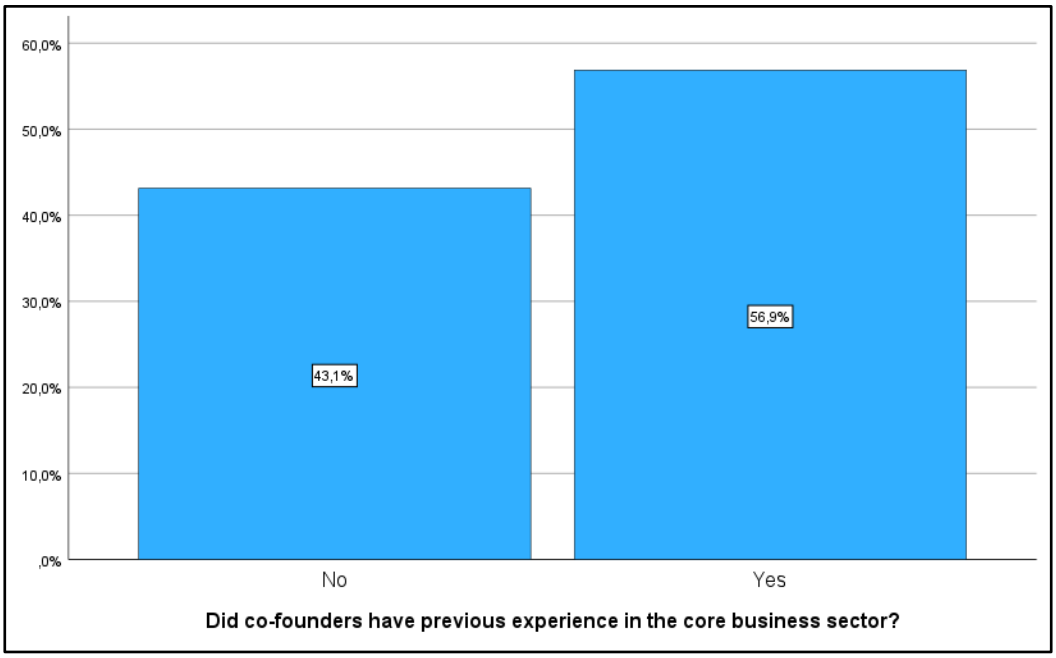

Figure 14: Co-founders previous experience in the core business sector (yes/no)

Table 13 and Figure 13 indicate that **most** of the companies of the sample (56.9%) have co-founders with **prior experience in the core business sector**.

What was your main motivation to start up your own business_Ability to build your business future & self-motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	36	35,3	35,3	35,3
	Yes	66	64,7	64,7	100,0
	Total	102	100,0	100,0	

Table14.1: Ability to build your business future & self-motivation as the main motivation to start up your own business

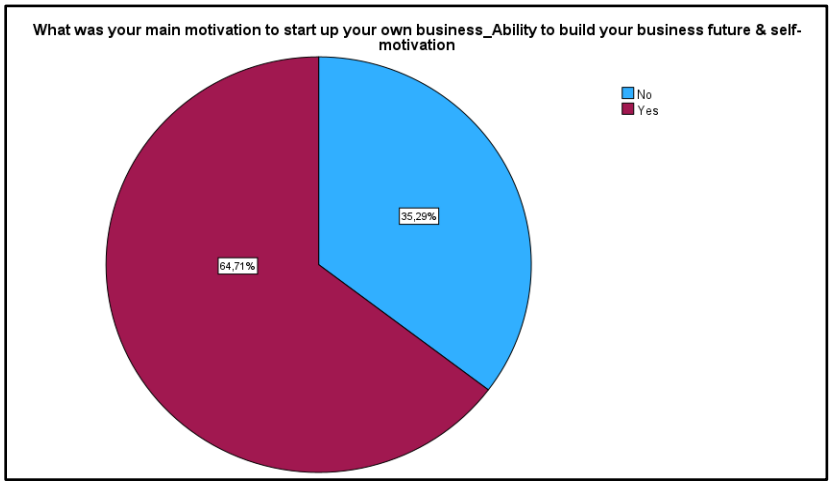

Figure 15.1: Ability to build your business future & self-motivation as the main motivation to start up your own business

What was your main motivation to start up your own business_Untapped business opportunity (unmet market needs)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	30	29,4	29,4	29,4
	Yes	72	70,6	70,6	100,0
	Total	102	100,0	100,0	

Table14.2: Untapped business opportunity (unmet market needs) as the main motivation to start up your own business

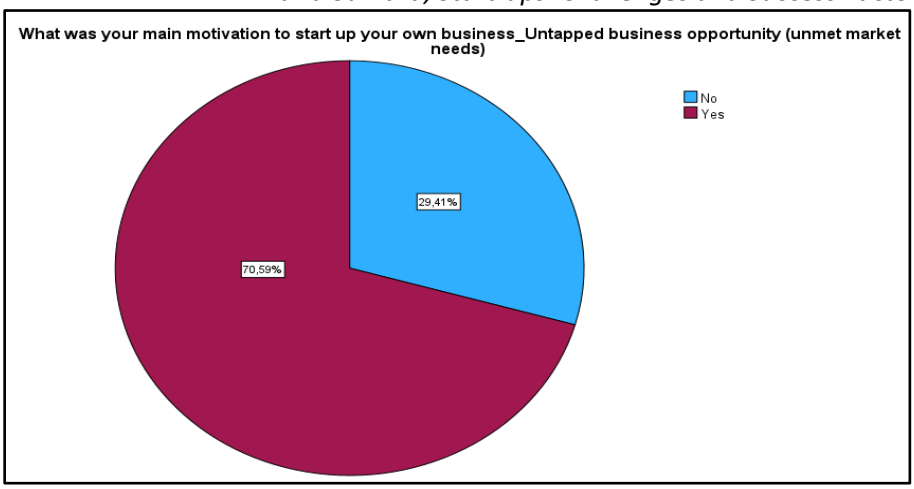

Figure 15.2: Untapped business opportunity (unmet market needs) as the main motivation to start up your own business

What was your main motivation to start up your own business_Past experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	73	71,6	71,6	71,6
	Yes	29	28,4	28,4	100,0
	Total	102	100,0	100,0	

Table14.3: Past experience as the main motivation to start up your own business

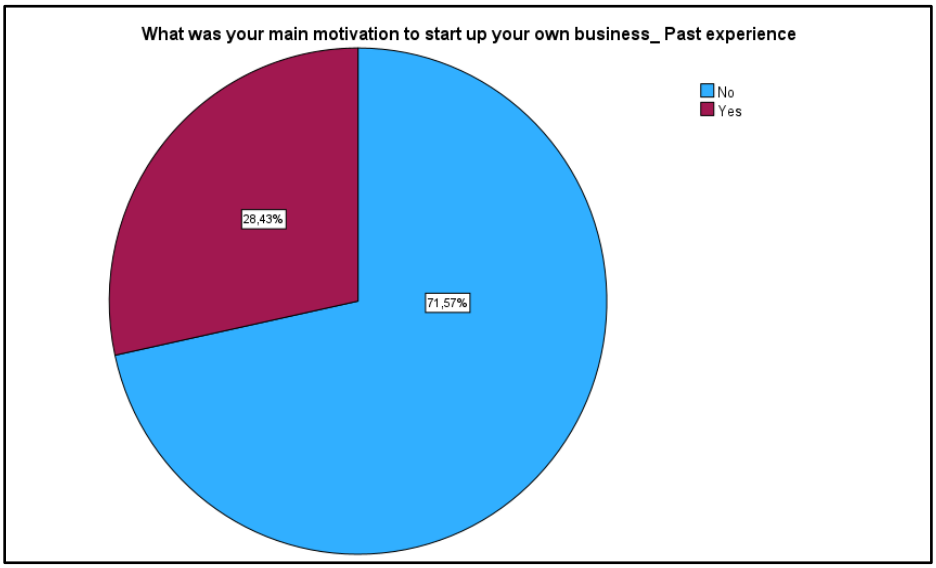

Figure 15.3: Past experience as the main motivation to start up your own business

What was your main motivation to start up your own business_Community impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	76	74,5	74,5	74,5
	Yes	26	25,5	25,5	100,0
	Total	102	100,0	100,0	

Table14.4: Community impact as the main motivation to start up your own business

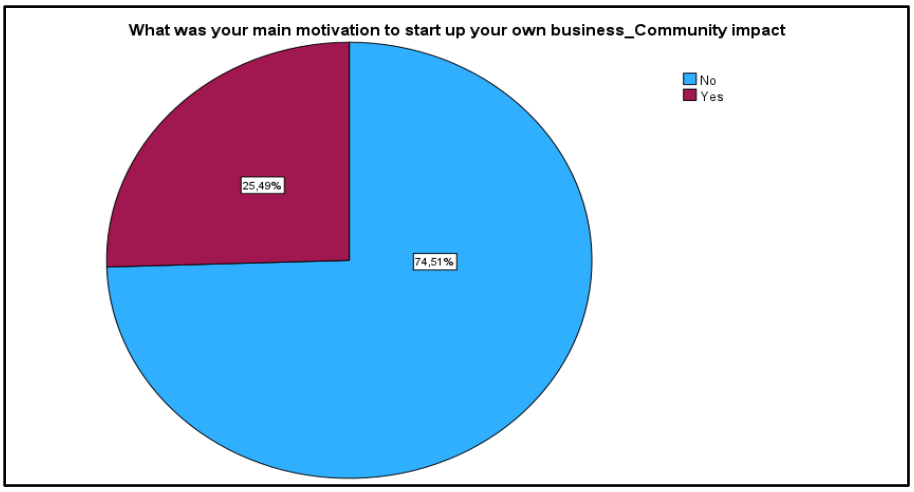

Figure 15.4: Community impact as the main motivation to start up your own business

What was your main motivation to start up your own business_Equity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	95	93,1	93,1	93,1
	Yes	7	6,9	6,9	100,0
	Total	102	100,0	100,0	

Table14.5: Equity as the main motivation to start up your own business

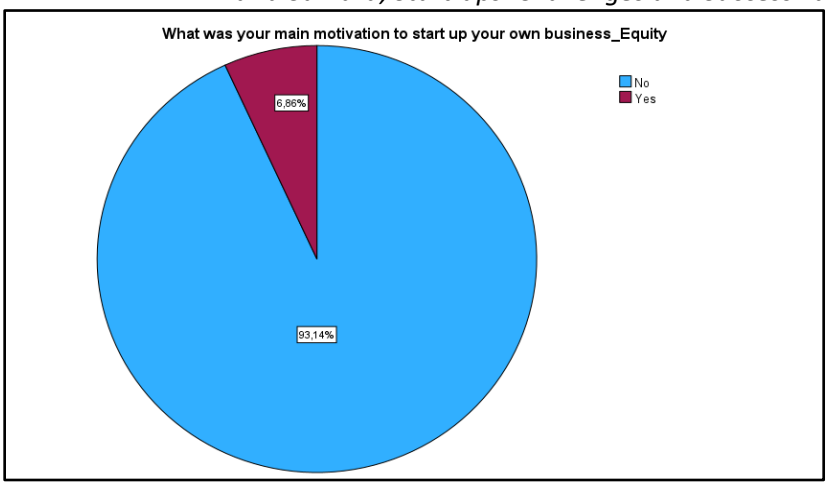

Figure 15.5: Equity as the main motivation to start up your own business

What was your main motivation to start up your own business_Prestige

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	97	95,1	95,1	95,1
	Yes	5	4,9	4,9	100,0
	Total	102	100,0	100,0	

Table14.6: Prestige as the main motivation to start up your own business

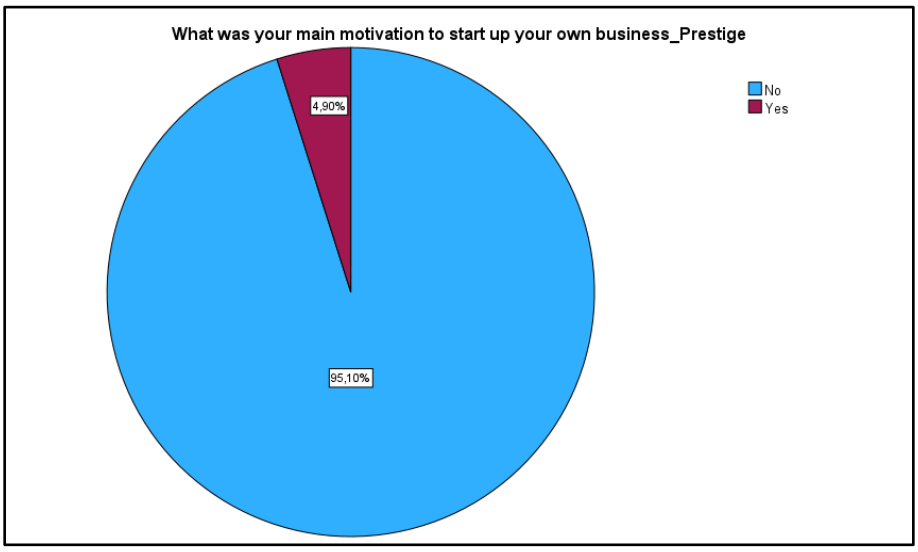

Figure 15.6: Prestige as the main motivation to start up your own business

A very important factor in the start-up business environment is the motivation to create a start-up company. In this question, entrepreneurs had the possibility to choose more than one answer.

Untapped business opportunity (unmet market needs) appears to be the main motivation for 70.6% of the sample when the **ability to build their business future and self-motivation** is a very important motivation as well for 64.7% of the sample. Past experience (28.4%), community impact (25.5%), equity (6.9%) and prestige (4.9%) were less selected answers in the question about the main motivation for starting up the business (see Table 14.1 - 14.6 and Figure 14.1-14.6).

What is the stage of start-up growth?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bootstrap (self- funding & family & friends)	54	52,9	52,9	52,9
	Pre-seed stage (funding < 1 M)	27	26,5	26,5	79,4
	Seed stage (funding ~ 1 - 4 M)	12	11,8	11,8	91,2
	Early stage/ Series A (funding ~ 4-15M)	4	3,9	3,9	95,1
	Growth stage/ Series B (funding ~ 15-40M)	2	2,0	2,0	97,1
	Exit phase	3	2,9	2,9	100,0
	Total	102	100,0	100,0	

Table15: Stage of start-up growth

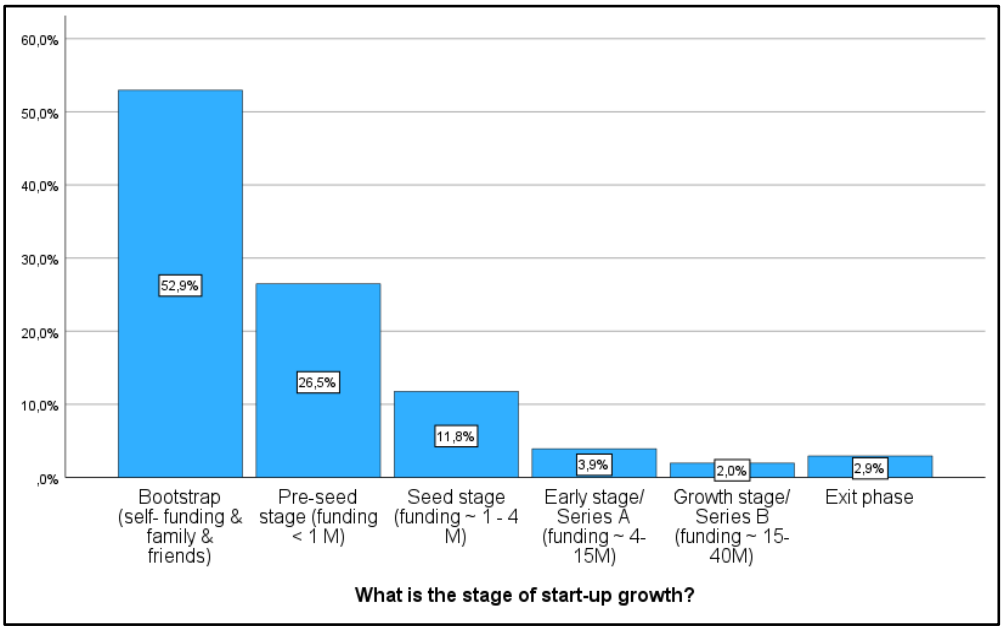

Figure 16: Stage of start-up growth

According to Table 15 and Figure 15, more than half (52.9%) of the start-up companies are at the stage of growth " **Bootstrap** (self- funding & family & friends)", while 26.5% of the companies are in **pre-seed stage** (funding < 1 M) of growth.

Furthermore, 11.8% of the start-up companies are in seed stage (funding ~ 1 - 4 M), 3.9% in early stage/ series A (funding ~ 4-15M), 2.9% are in exit phase and 2% are in growth stage/ series B (funding ~ 15-40M).

Which is the total amount of funding raised so far?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<20.000 € (Pre-seed stage)	36	35,3	35,3	35,3
	20-50.000 (Pre-seed stage)	12	11,8	11,8	47,1
	50-100.000 € (Pre-seed stage)	15	14,7	14,7	61,8
	100-500.000 (Pre-seed stage)	13	12,7	12,7	74,5
	500.000 - 1 M € (Pre-seed stage)	13	12,7	12,7	87,3
	1- 4 M (Seed stage)	10	9,8	9,8	97,1
	4-15 M (Early stage/ Series A)	1	1,0	1,0	98,0
	Exit	2	2,0	2,0	100,0
	Total	102	100,0	100,0	

Table16: Total amount of funding raised so far

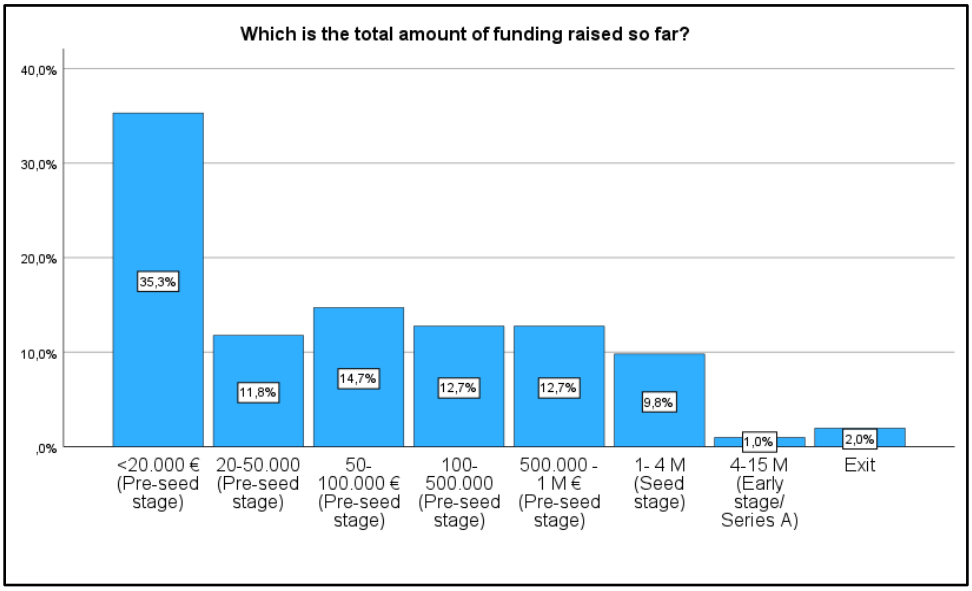

Figure 17: Total amount of funding raised so far

From Table 16 and Figure 16, regarding the amount of funding raised, the results show that **35.3%** of the start-ups has raised an amount of **less than 20.000 € (Pre-seed stage),** 14.7% has raised an amount of 50-100.000 € (Pre-seed stage), 12.7% has raised an amount of 100-500.000 (Pre-seed stage) and 12.4% has raised an amount of 500.000 - 1 M € (Pre-seed stage). Moreover, for 11.8% the amount of funding raised

so far it is 20-50.000 (Pre-seed stage), for 9.8% it is 1- 4 M (Seed stage), 2 % of the companies are in exit phase while 1% has raised 4-15 M (Early stage/ Series A).

Which of the following funding sources have you already used_Bootstrap (self-funding, family, friends)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	25	24,5	24,5	24,5
	Yes	77	75,5	75,5	100,0
	Total	102	100,0	100,0	

Table17.1: Bootstrap (self-funding, family, friends) as a funding source already used (yes/no)

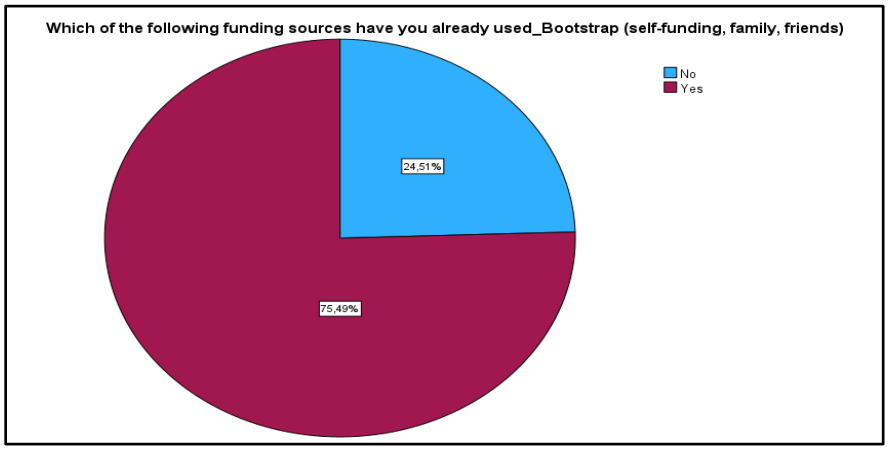

Figure 18.1: Bootstrap (self-funding, family, friends) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Start-up competitions (eg. NBG seeds)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	66	64,7	64,7	64,7
	Yes	36	35,3	35,3	100,0
	Total	102	100,0	100,0	

Table17.2: Start-up competitions (eg. NBG seeds) as funding sources already been used (yes/no)

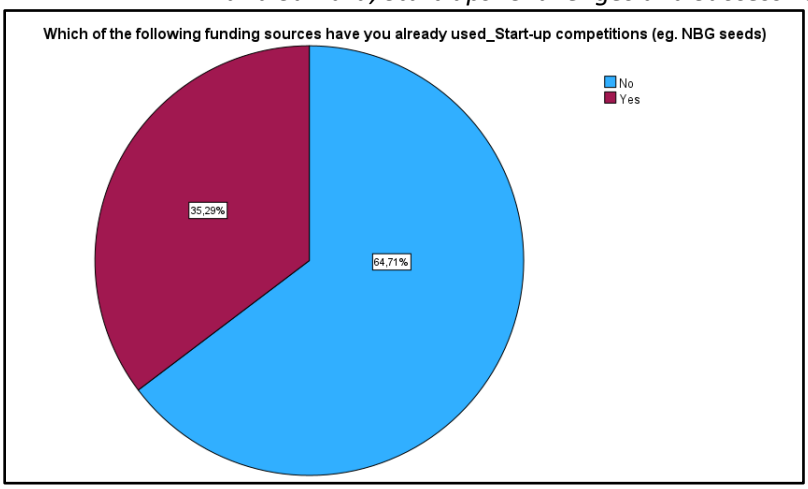

Figure 18.2: Start-up competitions (eg. NBG seeds) as funding sources already been used (yes/no)

Regarding the funding sources that the companies of the sample have already used, we observe in Table 17.1 and Figure 17.1 that **75.5%** of the companies have already used **Bootstrap** (self-funding, family, friends). In Table 17.2 and Figure 17.2, start-up competitions (eg. NBG seeds) are used as a funding source by 35.3% of companies. Incubator/ Accelerator Programmes have also been used as a source for 33.3% of the sample and 30.39% of the sample has used grants from EU Structural Funds (ESPA) (see Tables 17.4 & 17.11 and Figures 17.4 & 17.11). Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme) were used as a funding source for 23.5% (see Table 17.12 and Figure 17.12). Table 17.7 and Figure 17.7 show that 15.7% of the start-up companies have used Angel Investors (EU) as funding source when 84.3% have not. Moreover, Table 17.9 and Figure 17.9 indicate that 13.7% of the sample has used VC funds (EU) and Table 17.14 (& Figure 17.14) shows that Bank loans have been used as a funding source by 12.75%. In Table 17.6 and Figure 17.6, we see that 7.84% of the respondents has used Venture capital as a funding source (while the majority 92.16% of the start-ups have not). In addition, in Table 17.8 and Figure 17.8 we observe that 5.9% of the companies have used Angel Investors (non-EU) and the remaining 94.1% has not. 4.9% of the start-ups has used Venture Debt as a funding source (see Table 17.13 and Figure 17.13). Almost for 2% of the sample have used VC funds (non-EU) as we observe in Table 17.10 and Figure 17.10 and in Table 17.16 (and Figure 17.16) we can notice that 2% have used Merger or Acquisition (Exit). A small portion of the respondents (6.86%) claim to have used some other sponsorship.

Which of the following funding sources have you already used_Crowdfunding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	102	100,0	100,0	100,0

Table17.3: Crowdfunding as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Incubator/ Accelerator Programmes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	68	66,7	66,7	66,7
	Yes	34	33,3	33,3	100,0
	Total	102	100,0	100,0	

Table17.4: Incubator/ Accelerator Programmes as funding sources already been used (yes/no)

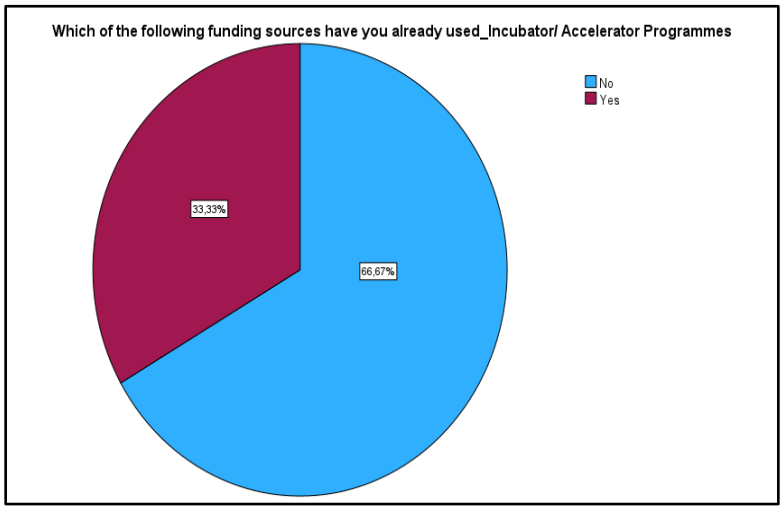

Figure 18.3: Incubator/ Accelerator Programmes as funding sources already been used (yes/no)

Which of the following funding sources have you already used_Venture builders

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	102	100,0	100,0	100,0

Table17.5: Venture builders as funding sources already been used (yes/no)

Which of the following funding sources have you already used_Venture capital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	94	92,2	92,2	92,2
	Yes	8	7,8	7,8	100,0
	Total	102	100,0	100,0	

Table17.6: Venture capital as a funding source already been used (yes/no)

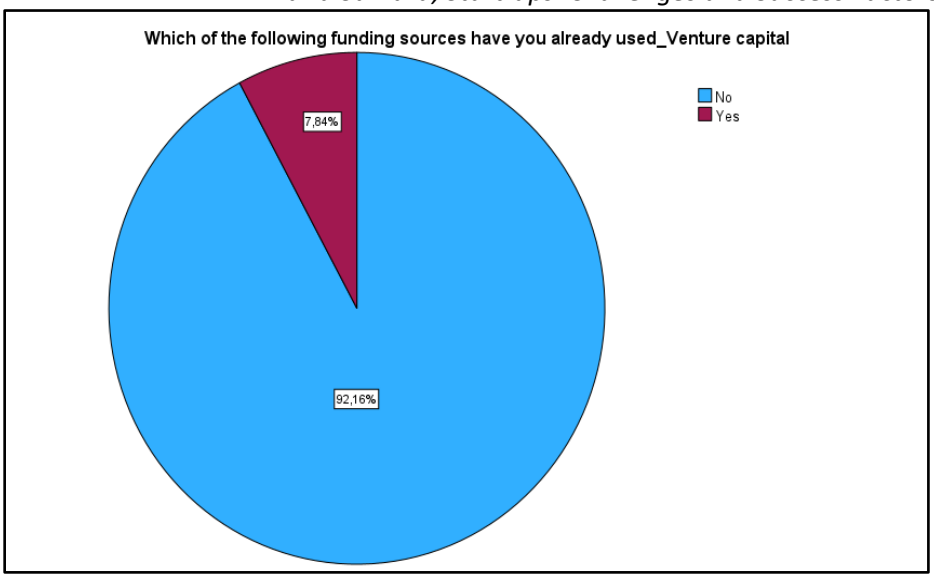

Figure 18.4: Venture capital as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Angel Investors (EU)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	86	84,3	84,3	84,3
	Yes	16	15,7	15,7	100,0
	Total	102	100,0	100,0	

Table17.7: Angel Investors (EU) as a funding source already been used (yes/no)

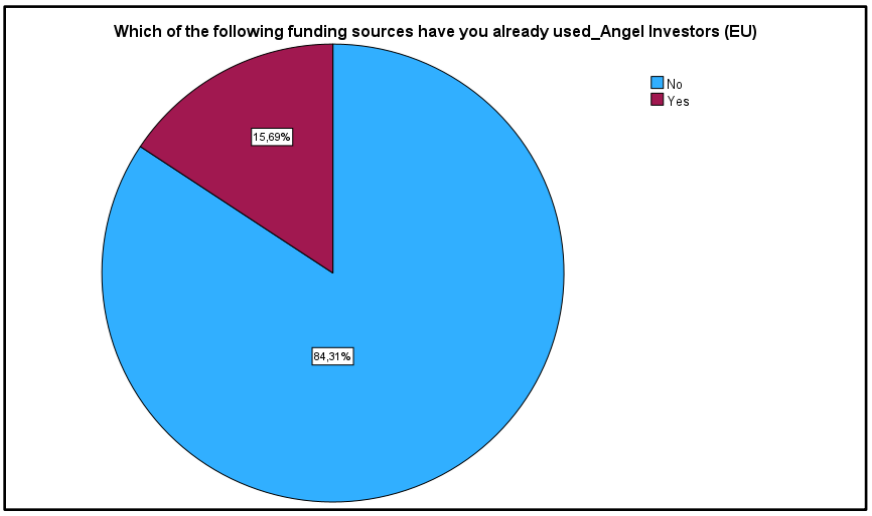

Figure 18.5: Angel Investors (EU) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Angel Investors (non-EU)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	96	94,1	94,1	94,1
	Yes	6	5,9	5,9	100,0
	Total	102	100,0	100,0	

Table17.8: Angel Investors (non-EU) as a funding source already been used (yes/no)

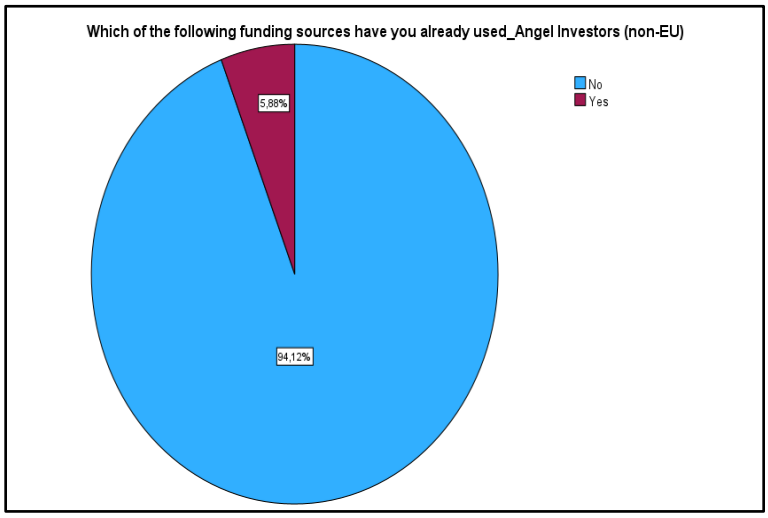

Figure 18.6: Angel Investors (non-EU) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_VC funds (EU)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	88	86,3	86,3	86,3
	Yes	14	13,7	13,7	100,0
	Total	102	100,0	100,0	

Table17.9: VC funds (EU) as a funding source already been used (yes/no)

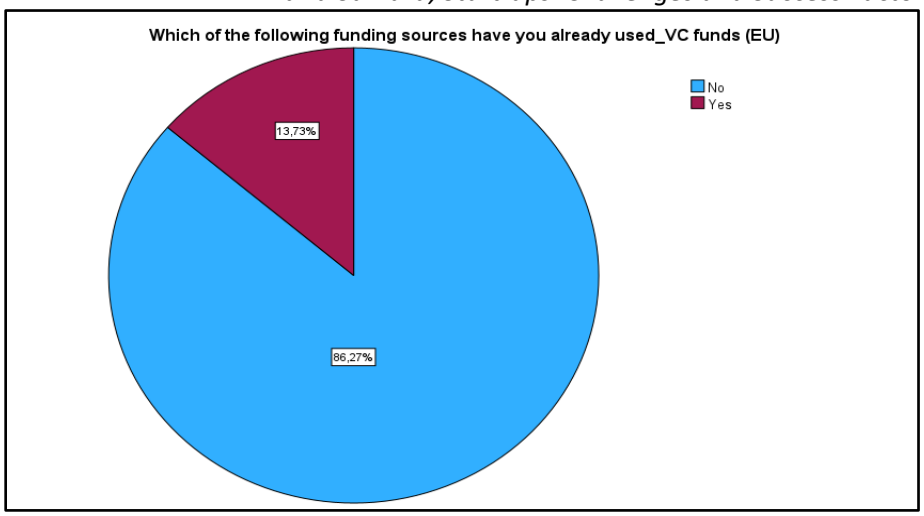

Figure 18.7: VC funds (EU) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_VC funds (non-EU)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	100	98,0	98,0	98,0
	Yes	2	2,0	2,0	100,0
	Total	102	100,0	100,0	

Table17.10: VC funds (non-EU) as a funding source already been used (yes/no)

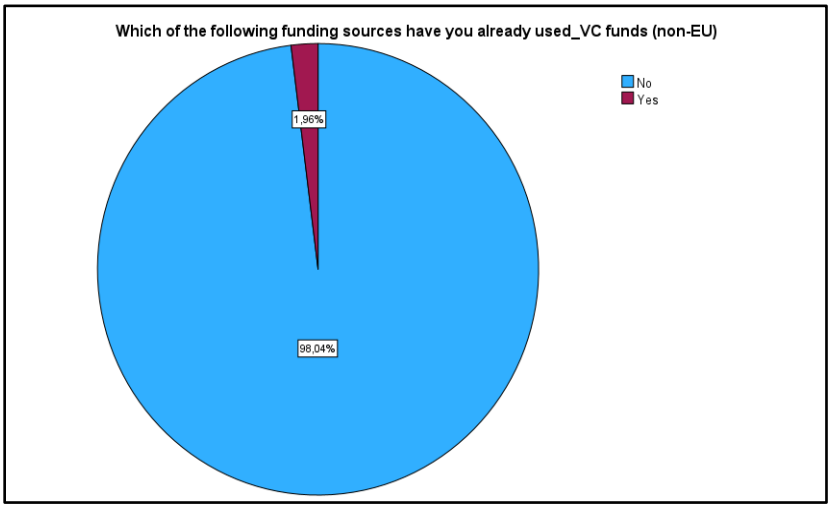

Figure 18.8: VC funds (non-EU) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Grants from EU Structural Funds (ESPA)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	71	69,6	69,6	69,6
	Yes	31	30,4	30,4	100,0
	Total	102	100,0	100,0	

Table17.11: Grants from EU Structural Funds (ESPA) as a funding source already been used (yes/no)

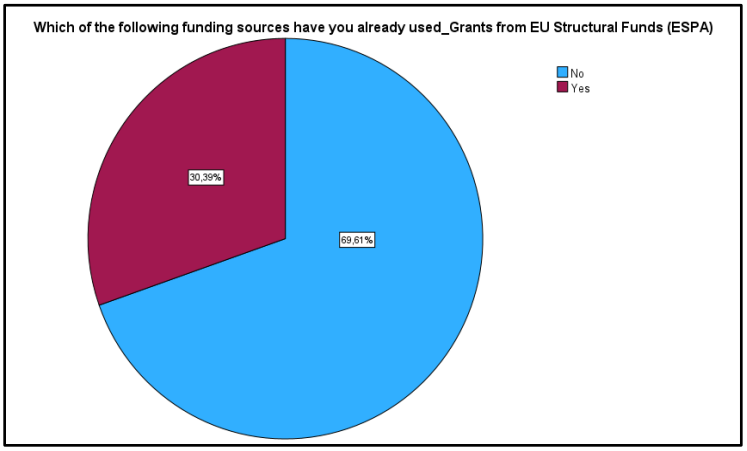

Figure 18.9: Grants from EU Structural Funds (ESPA) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	78	76,5	76,5	76,5
	Yes	24	23,5	23,5	100,0
	Total	102	100,0	100,0	

Table17.12: Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme) as a funding source already been used (yes/no)

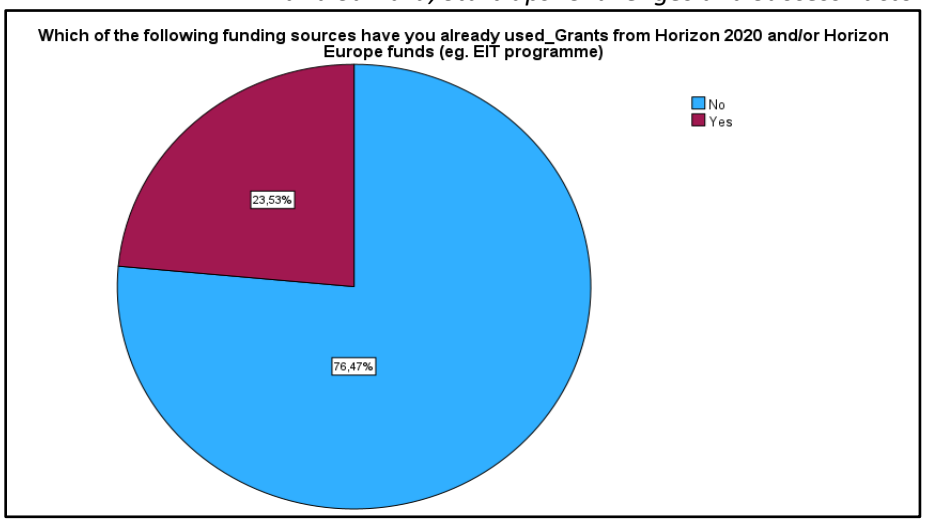

Figure 18.10: Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Venture Debt

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	97	95,1	95,1	95,1
	Yes	5	4,9	4,9	100,0
	Total	102	100,0	100,0	

Table17.13: Venture Debt as a funding source already been used (yes/no)

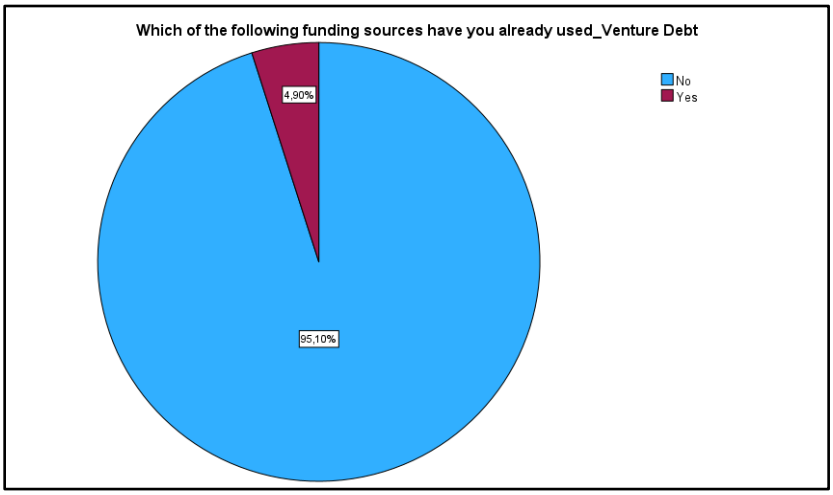

Figure 18.11: Venture Debt as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Bank loans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	89	87,3	87,3	87,3
	Yes	13	12,7	12,7	100,0
	Total	102	100,0	100,0	

Table17.14: Bank loans as a funding source already been used (yes/no)

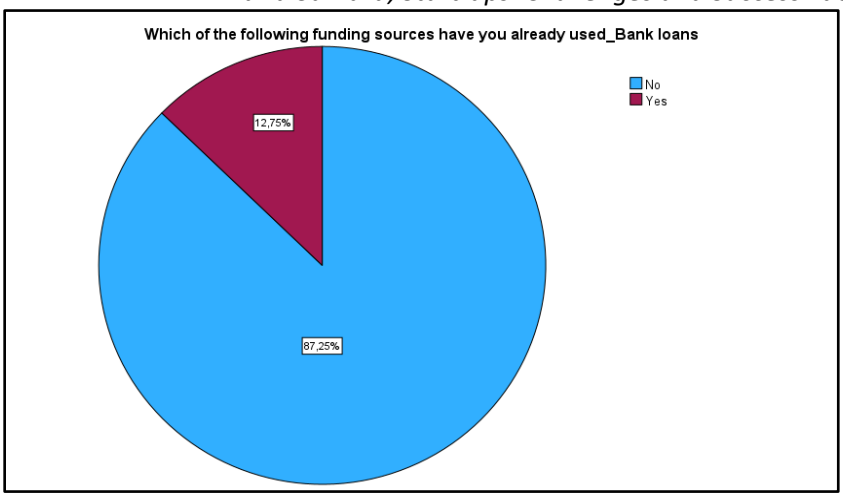

Figure 18.12: Bank loans as a funding source already been used (yes/no)

Which of the following funding sources have you already used_IPO (Exit)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	102	100,0	100,0	100,0

Table17.15: IPO (Exit) as a funding source already been used (yes/no)

Which of the following funding sources have you already used_Merger or Acquisition (Exit)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	100	98,0	98,0	98,0
	Yes	2	2,0	2,0	100,0
	Total	102	100,0	100,0	

Table17.16: Merger or Acquisition (Exit) as a funding source already been used (yes/no)

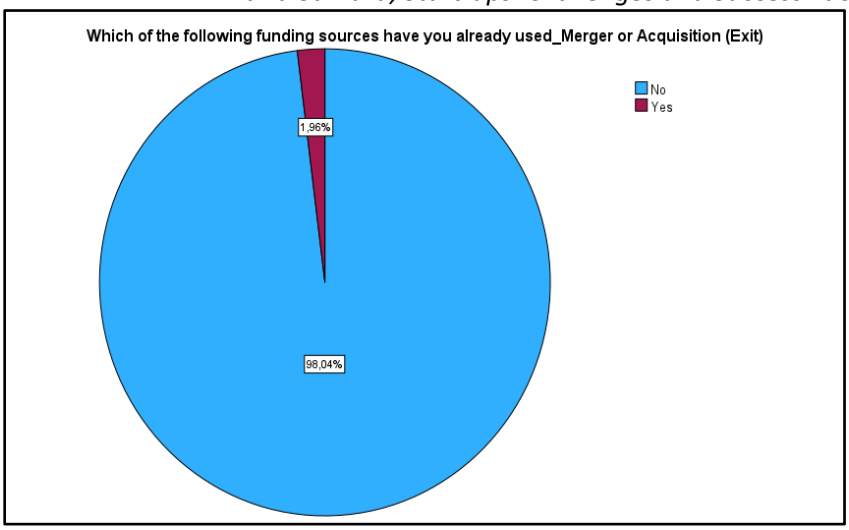

Figure 18.13: Merger or Acquisition (Exit) as a funding source already been used (yes/no)

17. Which of the following funding sources have you already used_Other sponsorship

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	95	93,1	93,1	93,1
	Yes	7	6,9	6,9	100,0
	Total	102	100,0	100,0	

Table17.17: Other sponsorship as a funding source already been used (yes/no)

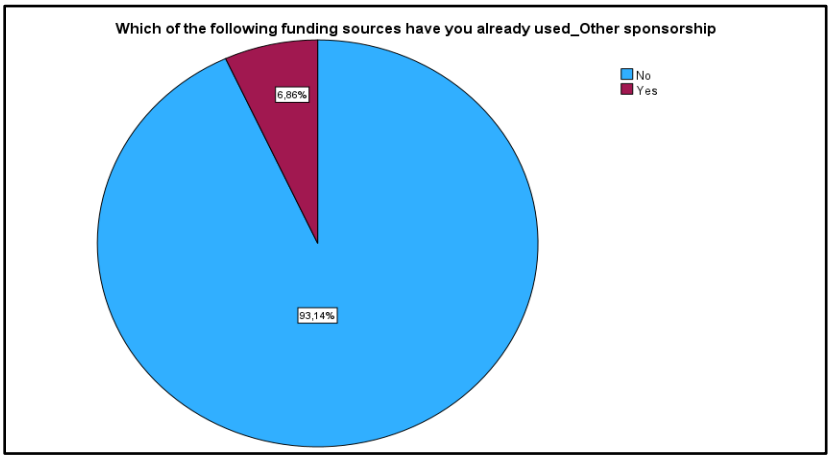

Figure 18.14: Other sponsorship as a funding source already been used (yes/no)

Furthermore, we test whether answers to questions: "**18**. Please rate the following challenges of start- up growth by level of difficulty (1= less difficult, 5= most difficult)", "**19**. Can you rate the importance of the following factors as determinants of start- up funding (1= no importance, 5= most important)?" and "**20**. Can you rate the importance of the following factors as determinants of strengthening the start- up growth? (1= no importance, 5= most important)" are normally distributed.

Statistics

		Challenges	Determinants-funding	Determinants-start up growth
N	Valid	102	102	102
	Missing	0	0	0
Mean		2,84	3,25	3,71
Median		2,88	3,33	3,71
Mode		3,19	2,78	3,43
Std. Deviation		,65	,80	,53
Minimum		1,25	1,44	2,43
Maximum		4,25	5,00	4,86

Table18: Mean, Median, St*d. Deviation, Minimum, Maximum for the variables Challenges, Determinants-Funding, Determinants-start-up Growth (1= less difficult, 5= most difficult*

In Table 18, the variable "**Challenges"** (answers to question 18) mean is equal to 2.84, median is equal to 2.88 and mode is 3.19. Regarding the variable "**Determinants-funding"** (answers to question 19) mean is equal to 3.25, median is equal to 3.33 and mode is 2.78. For the variable "**Determinants - start up growth"** (answers to question 20) mean is equal to 3.71, median is equal to 3.71 and mode is 3.43. **The values of mean, median and mode for the three variables are close.** Table 18.1 (and Figures 18.1-18.3) indicate that the variable "**Challenges"** and the variable "**Determinants-funding"** are **normally distributed**.

SPSS runs two statistical tests of normality – Kolmogorov-Smirnov and Shapiro-Wilk. If the significance value is greater than the alpha value (we'll use .05 as our alpha value), then there is no reason to think that our data differs significantly from a normal distribution – i.e., we can reject the null hypothesis that it is non-normal. As you can see above, both tests give a significance value that's greater than .05, for the **variable "Challenges"** and the **variable Determinants-funding.**

More specifically, for the **variable "Challenges" Shapiro-Wilk Test** (used also when sample size n<50) p-value is equal to 0.281 (> 0.05) and **Kolmogorov-Smirnov Test** p-value is equal to 0.157 (> 0.05). So we do not reject the null hypothesis of normally distributed data. Regarding the **variable Determinants-funding**, Shapiro-Wilk Test shows that p-value is equal to 0.314 (> 0.05) and Kolmogorov-Smirnov Test shows that p-value is equal to 0.167 (> 0.05), so we do not reject the null hypothesis of normally distributed data as well. Therefore, we can be confident that our data is normally distributed.

We can notice that concerning the **variable "Determinants-start up growth"**, the null hypothesis of normality is **(marginally) rejected** since p-value is 0.047 (< 0.05 (Shapiro-Wilk Test) and p-value is 0.017 < 0.05 (Kolmogorov-Smirnov).

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Challenges	,076	102	,157	,985	102	,281
Determinants- funding	,076	102	,167	,985	102	,314
Determinants- start up growth	,098	102	,017	,975	102	,047

a. Lilliefors Significance Correction

Table18.1: Tests of Normality for the variables *Challenges, Determinants-Funding, Determinants-Growth (1= less difficult, 5= most difficult)*

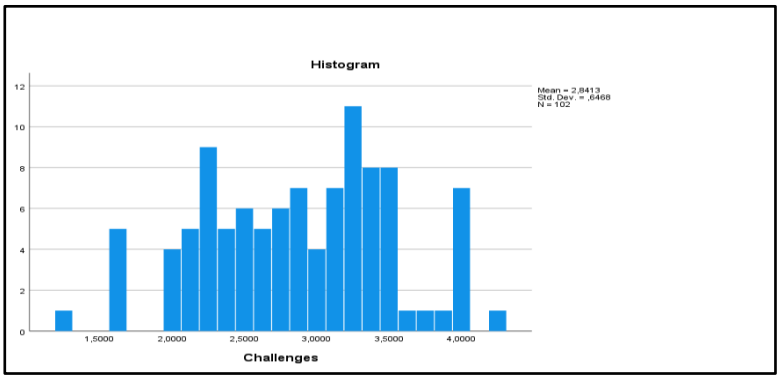

Figure 19.1:

Histogram for the variable Challenges

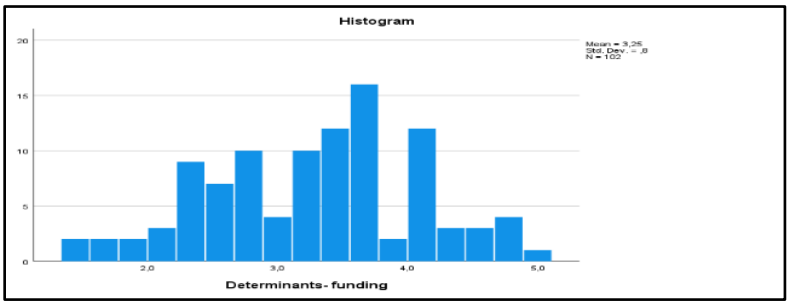

Figure 19.2:

Histogram for the variable Determinants-funding

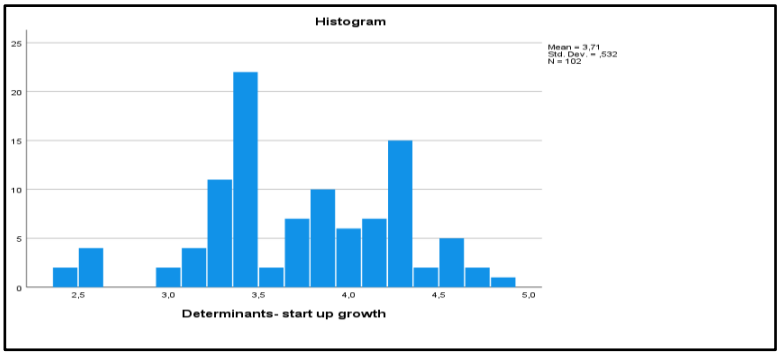

Figure 19.3:

Histogram for the variable Determinants-growth

We use Chronbach Alpha to measure the internal consistency of the survey results in questions 18, 19 and 20. Cronbach's Alpha ranges between 0 and 1, with higher values indicating that the survey questions are more reliable. The following tables include values of Cronbach's Alpha for question 18 "Please rate the following challenges of start- up growth by level of difficulty (1= less difficult, 5= most difficult)", question "19. Can you rate the importance of the following factors as determinants of start- up funding (1= 0 importance, 5= most important)?" and question "20. Can you rate the importance of the following factors as determinants of strengthening the start- up growth? (1= 0 importance, 5= most important)".

The Challenge scale consisted of 16 items (α = .822), the Determinants scale consisted of 10 items (α = .886), and the Determinants growth scale consisted of 15 items (α = .815). The results indicate good internal consistency.

Reliability Statistics-Challenge scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.822	.822	16

Reliability Statistics- Determinants funding scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.875	.886	10

Reliability Statistics-Determinants growth scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.788	.815	15

Table18.1: Reliability Analysis, Cronbach Alpha for the variables *Challenges, Determinants-Funding, Determinants-Growth (1= less difficult, 5= most difficult)*

Do you have plans for internationalisation (next 12 months)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	4,9	4,9	4,9
	Yes	75	73,5	73,5	78,4
	Maybe	18	17,6	17,6	96,1
	Already	4	3,9	3,9	100,0
	Total	102	100,0	100,0	

Table19: Plans for internationalisation (next 12 months)

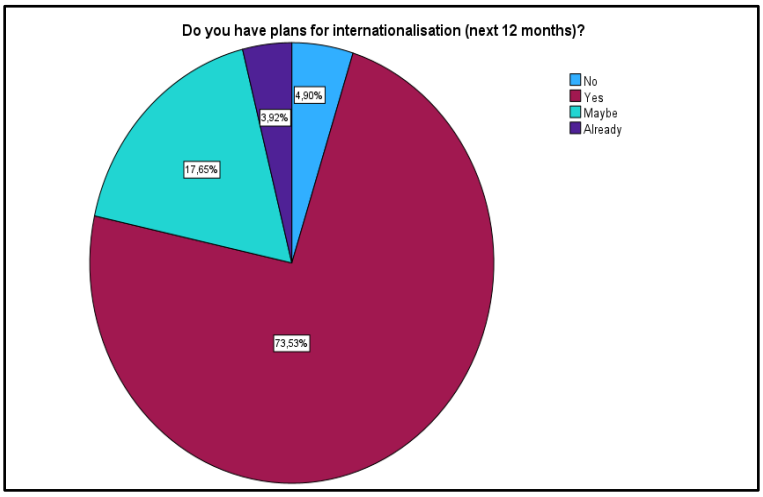

Figure 20: Plans for internationalisation (next 12 months)

In Table 19 and Figure 19, we observe that the majority of the companies of the sample (73.53%) have internationalisation plans, while 17.65% of the start-up companies answer "*maybe*" on this question and only 4.9% seem to have no plans for internationalisation. We can see that 3.92% of the sample was already international.

5. Results of statistical analysis

The statistical analysis aims at answering the following questions:

1. Does prior experience in another start-up relate with the total amount of funding raised?
2. Does prior experience in the core-business sector relate with the total amount of funding raised?
3. What is the relation between the stages of start-up growth and the funding sources used?
4. Is there a correlation between the challenges, determinants of funding and determinants of start-up growth?

In Table 20, we see that companies with co-founders with prior experience in another start-up tend to have a higher total amount of funding raised.

Which is the total amount of funding raised so far? * Did co-founders have previous experience in another start-up? Crosstabulation

			Did co-founders have previous experience in another start-up?		
			No	Yes	Total
Which is the total amount of funding raised so far?	<20.000 € (Pre-seed stage)	Count	29	7	36
		% within Which is the total amount of funding raised so far?	80,6%	19,4%	100,0%
	20-50.000 (Pre-seed stage)	Count	4	8	12
		% within Which is the total amount of funding raised so far?	33,3%	66,7%	100,0%
	50-100.000 € (Pre-seed stage)	Count	6	9	15
		% within Which is the total amount of funding raised so far?	40,0%	60,0%	100,0%
	100-500.000 (Pre-seed stage)	Count	7	6	13
		% within Which is the total amount of funding raised so far?	53,8%	46,2%	100,0%
	500.000 - 1 M € (Pre-seed stage)	Count	6	7	13
		% within Which is the total amount of funding raised so far?	46,2%	53,8%	100,0%
	1- 4 M (Seed stage)	Count	3	7	10
		% within Which is the total amount of funding raised so far?	30,0%	70,0%	100,0%
	4-15 M (Early stage/ Series A)	Count	1	0	1
		% within Which is the total amount of funding raised so far?	100,0%	0,0%	100,0%
	Exit	Count	1	1	2
		% within Which is the total amount of funding raised so far?	50,0%	50,0%	100,0%
Total		Count	57	45	102
		% within Which is the total amount of funding raised so far?	55,9%	44,1%	100,0%

Table20: Relation between prior experience of the co-founders in another start-up and total amount of funding raised so far

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided) Significance	99% Confidence Interval Lower Bound	99% Confidence Interval Upper Bound
Pearson Chi-Square	16,955[a]	7	,018	,010	,008	,013
Likelihood Ratio	18,173	7	,011	,015	,012	,018
Fisher-Freeman-Halton Exact Test	17,506			,007	,005	,009
Linear-by-Linear Association	5,429[c]	1	,020	,021	,017	,025
N of Valid Cases	102					

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is ,44.

c. The standardized statistic is 2,330.

Table21: Asymptotic and Monte Carlo test for the relation between prior experience of the co-founders in another start-up and total amount of funding raised so far

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	16,955[a]	7	,018	,010
Likelihood Ratio	18,173	7	,011	,014
Fisher-Freeman-Halton Exact Test	17,506			,007
Linear-by-Linear Association	5,429[b]	1	,020	,020
N of Valid Cases	102			

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is ,44.

b. The standardized statistic is 2,330.

Table22: Asymptotic and Exact tests for the relation between prior experience of the co-founders in another start-up and total amount of funding raised so far

In Table 21 and Table 22, we check the relation between the variables "prior experience of the co-founders in another start-up" and "total amount of funding raised". The results show that there is a statistically significant relation between the two hypothesized variables, at least of a 5% significance level.

P-value is less than 0.05 in both Asymp. Sig.[1] results (p- value =0.011, p- value =0.020), and Exact Sig. 2-sided results (p-value is equal to 0.014, 0.007 and 0.02). In Monte Carlo Sig. 2-sided results, p-value is less than 0.05 (p-value is equal to 0.012, 0.005, 0.017, 0.018, 0.009, and 0.025). This indicates that the null hypothesis that companies are equally likely to raise the same amount of funds regardless of whether or not their co-founders have prior experience in another start-up is rejected.

[1] *We cannot use the Pearson Chi-Square Test since the condition of the independence test that 80% of expected values are >5 is not satisfied.

As a result, we see that there is **positive and significant relation** between the **variables "prior experience of the co-founders in another start-up" and "total amount of funding raised".**

Table 23 shows that companies with co-founders with prior experience in the core business sector tend to have a higher amount of funding raised.

Which is the total amount of funding raised so far? * Did co-founders have previous experience in the core business sector? Crosstabulation

			Did co-founders have previous experience in the core business sector?		
			No	Yes	Total
Which is the total amount of funding raised so far?	<20.000 € (Pre-seed stage)	Count	26	10	36
		% within Which is the total amount of funding raised so far?	72,2%	27,8%	100,0%
	20-50.000 (Pre-seed stage)	Count	2	10	12
		% within Which is the total amount of funding raised so far?	16,7%	83,3%	100,0%
	50-100.000 € (Pre-seed stage)	Count	5	10	15
		% within Which is the total amount of funding raised so far?	33,3%	66,7%	100,0%
	100-500.000 (Pre-seed stage)	Count	6	7	13
		% within Which is the total amount of funding raised so far?	46,2%	53,8%	100,0%
	500.000 - 1 M € (Pre-seed stage)	Count	3	10	13
		% within Which is the total amount of funding raised so far?	23,1%	76,9%	100,0%
	1- 4 M (Seed stage)	Count	2	8	10
		% within Which is the total amount of funding raised so far?	20,0%	80,0%	100,0%
	4-15 M (Early stage/ Series A)	Count	0	1	1
		% within Which is the total amount of funding raised so far?	0,0%	100,0%	100,0%
	Exit	Count	0	2	2
		% within Which is the total amount of funding raised so far?	0,0%	100,0%	100,0%
Total		Count	44	58	102
		% within Which is the total amount of funding raised so far?	43,1%	56,9%	100,0%

Table23: Relation between prior experience of the co-founders in the core business sector and total amount of funding raised so far

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided) Significance	99% Confidence Interval Lower Bound	99% Confidence Interval Upper Bound
Pearson Chi-Square	23,070[a]	7	,002	<,001	<,001	,001
Likelihood Ratio	25,027	7	<,001	,001	<,001	,002
Fisher-Freeman-Halton Exact Test	22,185			<,001	<,001	,002
Linear-by-Linear Association	12,924[c]	1	<,001	<,001	<,001	<,001
N of Valid Cases	102					

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is ,43.

c. The standardized statistic is 3,595.

Table24: Asymptotic and Monte Carlo test for the relation between prior experience of the co-founders in the core business sector and total amount of funding raised so far

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	23,070[a]	7	,002	<,001
Likelihood Ratio	25,027	7	<,001	,001
Fisher-Freeman-Halton Exact Test	22,185			<,001
Linear-by-Linear Association	12,924[b]	1	<,001	<,001
N of Valid Cases	102			

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is ,43.

b. The standardized statistic is 3,595.

Table25: Asymptotic and Exact Sig. 2 sided test for the relation between prior experience of the co-founders in the core business sector and total amount of funding raised so far

In Table 21 and Table 22, we check the relation between the variables "prior experience of the co-founders in the core business sector" and "total amount of funding raised". The results show there is a statistically significant relation between the two hypothesized variables.

P-value is less than 0.05 in both Asymptotic[2], Exact and Monte Carlo tests, in table 24 and 25, indicating that the null hypothesis that companies are equally likely to raise the same amount of funds regardless of whether or not their co-founders in the core business sector have prior experience, is rejected.

[2] We cannot use the Pearson Chi-Square Test since the condition of the independence test that 80% of expected values are >5 is not satisfied.

Therefore, we conclude that there is **positive and significant relation** between the **variables "prior experience of the co-founders in the core business sector" and "total amount of funding raised".**

In the following tables, we analyse the relation between the stages of start-up growth and the funding sources used.

In table 26.1a, we see that ***companies at the bootstrap or pre-seed stage tend to choose Bootstrap as a funding source.***

Crosstab

			17. Which of the following funding sources have you already used_Bootstrap (self-funding, family, friends)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	8	46	54
		% within 15. What is the stage of start-up growth?	14,8%	85,2%	100,0%
	Pre-seed stage (funding < 1 M)	Count	4	23	27
		% within 15. What is the stage of start-up growth?	14,8%	85,2%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	6	6	12
		% within 15. What is the stage of start-up growth?	50,0%	50,0%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	1	2	3
		% within 15. What is the stage of start-up growth?	33,3%	66,7%	100,0%
Total		Count	25	77	102
		% within 15. What is the stage of start-up growth?	24,5%	75,5%	100,0%

Table 26.1a: Relation between the different stages of start-up growth and the use or not of bootstrap (self-funding/family, friends) funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26,935[a]	5	<,001
Likelihood Ratio	25,194	5	<,001
Linear-by-Linear Association	12,580	1	<,001
N of Valid Cases	102		

a. 7 cells (58,3%) have expected count less than 5. The minimum expected count is ,49.

Table 26.1b: Asymptotic test for the relation between the stage of start up growth and the use of bootstrap (self-funding/family, friends) funding source

In Table 26.1b, p-value is less than 0.01, according to asymptotic chi square Likelihood ratio test, which indicates the existence of statistical significance of at least 5% significance level between the stage of start-up growth and the selection of bootstrap as a funding source. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, we conclude that there is **positive and significant relation** between the **variables "stages of start-up growth" and "Bootstrap as a funding source".**

In table 26.2a, we see that ***companies at the bootstrap or pre-seed stage tend to choose start up competition (NBG seeds) as a funding source.***

Crosstab

			17. Which of the following funding sources have you already used_Start-up competitions (eg. NBG seeds)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	35	19	54
		% within 15. What is the stage of start-up growth?	64,8%	35,2%	100,0%
	Pre-seed stage (funding < 1 M)	Count	12	15	27
		% within 15. What is the stage of start-up growth?	44,4%	55,6%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	10	2	12
		% within 15. What is the stage of start-up growth?	83,3%	16,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	66	36	102
		% within 15. What is the stage of start-up growth?	64,7%	35,3%	100,0%

Table 26.2a: Relation between the different stages of start-up growth and the use or not of start- up competition (NBG seeds) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11,586[a]	5	,041
Likelihood Ratio	14,490	5	,013
Linear-by-Linear Association	3,853	1	,050
N of Valid Cases	102		

a. 7 cells (58,3%) have expected count less than 5. The minimum expected count is ,71.

Table 26.2b: Asymptotic test for the relation between the stage of start- up growth and the use of start-up competition (NBG seeds) funding source

In Table 26.2b, p-value is 0.013, according to asymptotic chi square Likelihood ratio test, which indicates the existence of statistical significance of at least 5% significance level between the stage of start-up growth and the selection of start- up competition as a funding source. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, we conclude that there is **positive and significant relation** between the **variables "stages of start-up growth" and "start- up competition as a funding source".**

*In table 26.3a, we notice that companies at the **bootstrap and pre-seed stage tend to select Incubator/ Accelerator programmes as a funding source.***

Crosstab

			17. Which of the following funding sources have you already used_Incubator/ Accelerator Programmes		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	38	16	54
		% within 15. What is the stage of start-up growth?	70,4%	29,6%	100,0%
	Pre-seed stage (funding < 1 M)	Count	11	16	27
		% within 15. What is the stage of start-up growth?	40,7%	59,3%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	10	2	12
		% within 15. What is the stage of start-up growth?	83,3%	16,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	68	34	102
		% within 15. What is the stage of start-up growth?	66,7%	33,3%	100,0%

Table 26.3a: Relation between the different stages of start-up growth and the use or not of Incubator/Accelerator programmes as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14,500[a]	5	,013
Likelihood Ratio	16,906	5	,005
Linear-by-Linear Association	2,402	1	,121
N of Valid Cases	102		

a. 7 cells (58,3%) have expected count less than 5. The minimum expected count is ,67.

Table 26.3b: Asymptotic test for the relation between the stage of start up growth and the use of Incubator/Accelerator programmes funding source

In Table 26.3b, p-value is 0.005 according to asymptotic chi square Likelihood ratio test, which indicates the existence of statistical significance at least for a 5% significance level between the stage of start-up growth and the selection of Incubator/Accelerator programmes as a funding source. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, we conclude that there is **positive and significant relation** between the **variables "stages of start-up growth" and "Incubator/Accelerator programmes as a funding source".**

In table 26.4a, we notice that companies at **exit phase tend to select Venture capital** as a funding source.

Crosstab

			17. Which of the following funding sources have you already used_Venture capital		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	53	1	54
		% within 15. What is the stage of start-up growth?	98,1%	1,9%	100,0%
	Pre-seed stage (funding < 1 M)	Count	25	2	27
		% within 15. What is the stage of start-up growth?	92,6%	7,4%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	10	2	12
		% within 15. What is the stage of start-up growth?	83,3%	16,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	3	1	4
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	1	2	3
		% within 15. What is the stage of start-up growth?	33,3%	66,7%	100,0%
Total		Count	94	8	102
		% within 15. What is the stage of start-up growth?	92,2%	7,8%	100,0%

Table 26.4a: Relation between the different stages of start-up growth and the use or not of Venture capital as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20,142[a]	5	,001
Likelihood Ratio	12,735	5	,026
Linear-by-Linear Association	15,533	1	<,001
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,16.

Table 26.4b: Asymptotic test for the relation between the stage of start up growth and the use of Venture capital funding source

Table 26.4b indicates the existence of statistical significance at least for a 5% significance level between the stage of start-up growth and the selection of Venture capital as a funding source, as p-value equals to 0.026 according to asymptotic chi square Likelihood ratio test. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, we conclude that there is **positive and significant relation** between the **variables "stages of start-up growth" and "Venture capital as a funding source".**

*In table 26.5a, we notice that companies at the **pre-seed, seed and early stage tend to select Angel investors (EU) as a funding source.***

Crosstab

			17. Which of the following funding sources have you already used_Angel Investors (EU)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	50	4	54
		% within 15. What is the stage of start-up growth?	92,6%	7,4%	100,0%
	Pre-seed stage (funding < 1 M)	Count	20	7	27
		% within 15. What is the stage of start-up growth?	74,1%	25,9%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	8	4	12
		% within 15. What is the stage of start-up growth?	66,7%	33,3%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	3	1	4
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	86	16	102
		% within 15. What is the stage of start-up growth?	84,3%	15,7%	100,0%

Table 26.5a: Relation between the different stages of start-up growth and the use or not of Angel investors (EU) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8,957[a]	5	,111
Likelihood Ratio	9,428	5	,093
Linear-by-Linear Association	,705	1	,401
N of Valid Cases	102		

a. 8 cells (66,7%) have expected count less than 5. The minimum expected count is ,31.

Table 26.5b: Asymptotic test for the relation between the stage of start up growth and the use of Angel investors (EU) funding source

Table 26.5b indicates **no existence of statistical significance** at least for a 5% significance level between the stage of **start-up growth and the selection of Angel investors (EU)** as a funding source, as p-value equals to 0.093 according to asymptotic chi square Likelihood ratio test,. As a result, the null hypothesis (lack of statistical significance between the 2 variables), *cannot be rejected*. Therefore, we conclude that there is **no significant relation** between the **variables "stages of start-up growth" and "Angel investors (EU) as a funding source".**

Table 26.6a shows that companies at ***Early stage/Series A select Angel investors (non-EU) as a funding source, more than companies at other growth stages (25%).***

Crosstab

			17. Which of the following funding sources have you already used_Angel Investors (non-EU)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	54	0	54
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	24	3	27
		% within 15. What is the stage of start-up growth?	88,9%	11,1%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	10	2	12
		% within 15. What is the stage of start-up growth?	83,3%	16,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	3	1	4
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	96	6	102
		% within 15. What is the stage of start-up growth?	94,1%	5,9%	100,0%

Table 26.6a: Relation between the different stages of start-up growth and the use or not of Angel Investors (non-EU) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10,182[a]	5	,070
Likelihood Ratio	11,489	5	,042
Linear-by-Linear Association	2,342	1	,126
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,12.

Table 26.6b: Asymptotic test for the relation between the stage of start -up growth and the use of Angel Investors (non-EU) funding source

Table 26.6b indicates the **existence of statistical significance** at least for a 5% significance level between the stage of start-up growth and the selection of Angel Investors (non-EU) as a funding source, as p-value equals to 0.042according to asymptotic chi square Likelihood ratio test. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, we conclude that there is

positive and significant relation between the **variables "stages of start-up growth" and "Angel investors (non-EU) as a funding source".**

Table 26.7a shows that companies **at an early stage/series A, chose Venture Capital fund (EU) as a funding method more than other stage companies.**

Crosstab

			17. Which of the following funding sources have you already used_VC funds (EU)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	54	0	54
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	24	3	27
		% within 15. What is the stage of start-up growth?	88,9%	11,1%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	7	5	12
		% within 15. What is the stage of start-up growth?	58,3%	41,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	0	4	4
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	1	2	3
		% within 15. What is the stage of start-up growth?	33,3%	66,7%	100,0%
Total		Count	88	14	102
		% within 15. What is the stage of start-up growth?	86,3%	13,7%	100,0%

Table 26.7a: Relation between the different stages of start-up growth and the use or not of VC funds (EU) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	49,220[a]	5	<,001
Likelihood Ratio	42,633	5	<,001
Linear-by-Linear Association	29,632	1	<,001
N of Valid Cases	102		

a. 8 cells (66,7%) have expected count less than 5. The minimum expected count is ,27.

Table 26.7b: Asymptotic test for the relation between the stage of start- up growth and the use of VC funds (EU) funding source

Table 26.7b indicates the existence of **strong statistical significance** at least for a 5% significance level between the stage of start-up growth and the selection of VC funds (EU) as a funding source, as p-value < 0.01, according to asymptotic chi square Likelihood test. As a result, the null hypothesis (lack of statistical

significance between the 2 variables), is rejected. Therefore, we conclude that there is **positive and significant relation** between the **variables "stages of start-up growth" and "VC funds (EU) as a funding source".**

Table 26.8a shows that companies mainly **at an early stage/series A** choose **Venture Capital fund (non-EU) as a funding method more than other stage companies.**

Crosstab

			17. Which of the following funding sources have you already used_VC funds (non-EU)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	54	0	54
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	26	1	27
		% within 15. What is the stage of start-up growth?	96,3%	3,7%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	12	0	12
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	3	1	4
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	100	2	102
		% within 15. What is the stage of start-up growth?	98,0%	2,0%	100,0%

Table 26.8a: Relation between the different stages of start-up growth and the use or not of VC funds (non-EU) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12,892[a]	5	,024
Likelihood Ratio	6,635	5	,249
Linear-by-Linear Association	1,511	1	,219
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,04.

Table 26.8b: Asymptotic test for the relation between the stage of start up growth and the use of VC funds (non-EU) funding source

Table 26.8b does **not reveal any statistical significance** for at least a 5% significance level between the stage of start-up growth and the **selection of VC funds (non-EU)** as a funding source, as p-value is 0.249,

according to asymptotic chi square Likelihood ratio test. As a result, the null hypothesis (lack of statistical significance between the 2 variables), cannot be rejected. Therefore, there is **no significant relation** between the **variables "stages of start-up growth" and "VC funds (non-EU) as a funding source".**

Table 26.9a shows that **Grants from EU Structural Funds (self-funding/family, friends) is selected as a funding method especially from companies at Early stage/series A, Growth stage/Series B and Exit phase.**

Crosstab

			17. Which of the following funding sources have you already used_Grants from EU Structural Funds (ESPA)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	43	11	54
		% within 15. What is the stage of start-up growth?	79,6%	20,4%	100,0%
	Pre-seed stage (funding < 1 M)	Count	19	8	27
		% within 15. What is the stage of start-up growth?	70,4%	29,6%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	9	3	12
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	0	4	4
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	0	2	2
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Exit phase	Count	0	3	3
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
Total		Count	71	31	102
		% within 15. What is the stage of start-up growth?	69,6%	30,4%	100,0%

Table 26.9a: Relation between the different stages of start-up growth and the use or not of Grants from EU Structural Funds (self-funding/family, friends) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23,349[a]	5	<,001
Likelihood Ratio	24,382	5	<,001
Linear-by-Linear Association	16,810	1	<,001
N of Valid Cases	102		

a. 7 cells (58,3%) have expected count less than 5. The minimum expected count is ,61.

Table 26.9b: Asymptotic test for the relation between the stage of start up growth and the use of Grants from EU Structural Funds (self-funding/family, friends) funding source

Table 26.9b indicates the existence of statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of Grants from EU Structural Funds (self-funding/family, friends) as p-value is lower than 0.01 according to asymptotic chi square Likelihood ratio test. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, there is **significant relation** between the **variables "stages of start-up growth" and "Grants from EU Structural Funds (self-funding/family, friends) as a funding source".**

We notice from table 26.10a, that **Grants from Horizon 2020 and/or Horizon Europe funds (EIT programme) is selected as a funding method mostly from companies at Growth stage/Series B and Exit phase.**

Crosstab

			17. Which of the following funding sources have you already used_Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	48	6	54
		% within 15. What is the stage of start-up growth?	88,9%	11,1%	100,0%
	Pre-seed stage (funding < 1 M)	Count	20	7	27
		% within 15. What is the stage of start-up growth?	74,1%	25,9%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	6	6	12
		% within 15. What is the stage of start-up growth?	50,0%	50,0%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	3	1	4
		% within 15. What is the stage of start-up growth?	75,0%	25,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	0	2	2
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Exit phase	Count	1	2	3
		% within 15. What is the stage of start-up growth?	33,3%	66,7%	100,0%
Total		Count	78	24	102
		% within 15. What is the stage of start-up growth?	76,5%	23,5%	100,0%

Table 26.10a: Relation between the different stages of start-up growth and the use or not of Grants From Horizon 2020 and/or Horizon Europe funds (EIT programme) as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18,995[a]	5	,002
Likelihood Ratio	17,771	5	,003
Linear-by-Linear Association	14,079	1	<,001
N of Valid Cases	102		

a. 7 cells (58,3%) have expected count less than 5. The minimum expected count is ,47.

Table 26.10b: Asymptotic test for the relation between the stage of start- up growth and the use of Grants From Horizon 2020 and/or Horizon Europe funds (EIT programme) funding source

Table 26.10b indicates the existence of statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of Grants from Horizon 2020 and/or Horizon Europe funds (EIT programme) as a funding source, as p-value equals to 0.03, according to asymptotic chi square Likelihood ratio test. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, there is **significant relation** between the **variables "stages of start-up growth" and "Grants from Horizon 2020 and/or Horizon Europe funds (EIT programme) as a funding source".**

Table 26.11a shows that **Venture debt is selected as a funding method mostly from companies at Early stage/Series A.**

Crosstab

			17. Which of the following funding sources have you already used_Venture Debt		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	54	0	54
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	27	0	27
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	11	1	12
		% within 15. What is the stage of start-up growth?	91,7%	8,3%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	0	4	4
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	97	5	102
		% within 15. What is the stage of start-up growth?	95,1%	4,9%	100,0%

Table 26.11a: Relation between the different stages of start-up growth and the use or not of Venture debt as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	82,336[a]	5	<,001
Likelihood Ratio	33,022	5	<,001
Linear-by-Linear Association	11,381	1	<,001
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,10.

Table 26.11b: Asymptotic test for the relation between the stage of start up growth and the use of Venture debt funding source

Table 26.11b indicates the existence of strong statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of Venture debt as a funding source, as according to asymptotic chi square Likelihood ratio test, p-value is lower than 0.01. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, there is **significant relation** between the **variables "stages of start-up growth" and "Venture debt as a funding source".**

Crosstab

			17. Which of the following funding sources have you already used_Bank loans		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	47	7	54
		% within 15. What is the stage of start-up growth?	87,0%	13,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	24	3	27
		% within 15. What is the stage of start-up growth?	88,9%	11,1%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	11	1	12
		% within 15. What is the stage of start-up growth?	91,7%	8,3%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	0	2	2
		% within 15. What is the stage of start-up growth?	0,0%	100,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	89	13	102
		% within 15. What is the stage of start-up growth?	87,3%	12,7%	100,0%

Table 26.12a: Relation between the different stages of start-up growth and the use or not of bootstrap (self-funding/family, friends) Bank loans as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14,992[a]	5	,010
Likelihood Ratio	10,454	5	,063
Linear-by-Linear Association	,141	1	,707
N of Valid Cases	102		

a. 8 cells (66,7%) have expected count less than 5. The minimum expected count is ,25.

Table 26.12b: Asymptotic test for the relation between the stage of start up growth and the use of Bank loans as a funding source

Table 26.12b indicates the absence of statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of Bank loans as a funding source, as according to asymptotic chi square Likelihood ratio test, p-value is equal to 0.063. As a result, the null hypothesis (lack of statistical significance between the 2 variables), cannot be rejected. Therefore, there is no significant relation between the variables "stages of start-up growth" and "Bank loans as a funding source".

We notice from table 26.13a, that **merger or acquisition is selected as a funding method mostly from companies at Exit phase.**

Crosstab

			17. Which of the following funding sources have you already used_Merger or Acquisition (Exit)		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	54	0	54
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Pre-seed stage (funding < 1 M)	Count	27	0	27
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	12	0	12
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	1	2	3
		% within 15. What is the stage of start-up growth?	33,3%	66,7%	100,0%
Total		Count	100	2	102
		% within 15. What is the stage of start-up growth?	98,0%	2,0%	100,0%

Table 26.13a: Relation between the different stages of start-up growth and the use or not of merger of acquisition as a funding source

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	67,320[a]	5	<,001
Likelihood Ratio	15,869	5	,007
Linear-by-Linear Association	31,250	1	<,001
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,04.

Table 26.13b: Asymptotic test for the relation between the stage of start-up growth and the use of merger of acquisition as a funding source

Table 26.13b indicates the existence of statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of merger of acquisition as a funding source, as according to asymptotic chi square Likelihood ratio test, p-value is equal to 0.007. As a result, the null hypothesis (lack of statistical significance between the 2 variables), is rejected. Therefore, there is **significant relation** between the **variables "stages of start-up growth" and "merger of acquisition as a funding source".**

Crosstab

			17. Which of the following funding sources have you already used_Other sponshorship		
			No	Yes	Total
15. What is the stage of start-up growth?	Bootstrap (self- funding & family & friends)	Count	50	4	54
		% within 15. What is the stage of start-up growth?	92,6%	7,4%	100,0%
	Pre-seed stage (funding < 1 M)	Count	26	1	27
		% within 15. What is the stage of start-up growth?	96,3%	3,7%	100,0%
	Seed stage (funding ~ 1 - 4 M)	Count	10	2	12
		% within 15. What is the stage of start-up growth?	83,3%	16,7%	100,0%
	Early stage/ Series A (funding ~ 4-15M)	Count	4	0	4
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Growth stage/ Series B (funding ~ 15-40M)	Count	2	0	2
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
	Exit phase	Count	3	0	3
		% within 15. What is the stage of start-up growth?	100,0%	0,0%	100,0%
Total		Count	95	7	102
		% within 15. What is the stage of start-up growth?	93,1%	6,9%	100,0%

Table 26.14a: Relation between the different stages of start-up growth and the use or not of other funding sources

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2,914[a]	5	,713
Likelihood Ratio	3,130	5	,680
Linear-by-Linear Association	,110	1	,741
N of Valid Cases	102		

a. 9 cells (75,0%) have expected count less than 5. The minimum expected count is ,14.

Table 26.14b: Asymptotic test for the relation between the stage of start up growth and the use of other funding sources

Table 26.14b indicates the absence of statistical significance for at least a 5% significance level between the stage of start-up growth and the selection of other funding sources, as according to the asymptotic chi square Likelihood ratio test, p-value = 0.68. As a result, the null hypothesis (lack of statistical significance between the 2 variables), cannot be rejected.

In Table 27, we test the correlation test between the **challenges, determinants- funding and determinants- start-up growth.**

Correlations

		Challenges	Determinants-funding	Determinants-start up growth
Challenges	Pearson Correlation	1	,122	,223*
	Sig. (2-tailed)		,222	,024
	N	102	102	102
Determinants- funding	Pearson Correlation	,122	1	,383**
	Sig. (2-tailed)	,222		<,001
	N	102	102	102
Determinants- start up growth	Pearson Correlation	,223*	,383**	1
	Sig. (2-tailed)	,024	<,001	
	N	102	102	102

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table27: Correlations between the variables Challenges, Determinants-funding, Determinants-growth

In Table 27 we observe that concerning the correlation test between the **Challenges and the Determinants of start-up growth**, since p-value is equal to 0.024 (< 0.05), there is statistically **significant correlation** between these variables**.** Regarding the correlation of **Determinants funding** and **determinants start-up growth,** p-value equals to <0.01 (which is lower than <0.05), indicating there is statistically **significant correlation** between these variables as well.

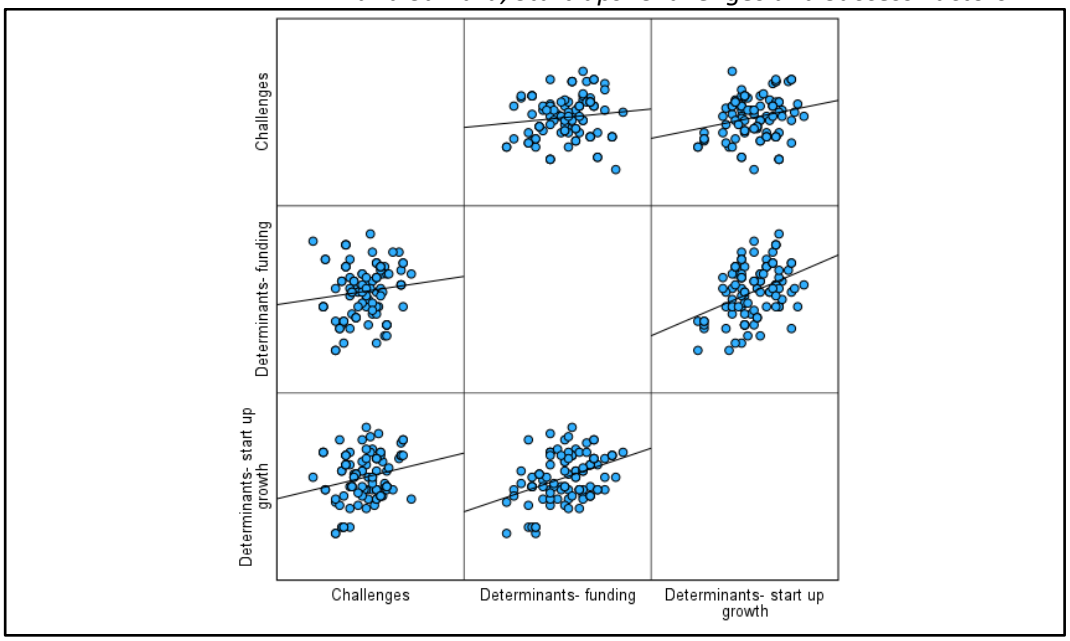

Figure 20: Scatter Plot Matrix for the variables Challenges, Determinants-funding, Determinants-growth

5. Conclusions

Greece over the last eight years, following the European Union debt crisis, has an unsustainable growth model. Start-ups in Greece are key factors for the development of growth and competitiveness. The growing number of societal challenges such as climate change and digital transformation poses further pressure as to supporting further growth of start-ups at global level. Startups play a pivotal role in driving economic advancement within societies. Through an examination of the bibliography for this dissertation, it is evident that the startup ecosystem is in a phase of growth in the South Eastern European region, necessitating further supportive policies. Institutional strengthening of the startup ecosystem emerges as a crucial factor for the development and promotion of startups in Greece. This entails enhancing the framework of cooperation among various stakeholders, including universities, public sector entities, research institutes, and scientific bodies. Such collaborative efforts are instrumental in fostering innovation and entrepreneurship, thereby contributing to the overall economic prosperity of the region.

The aim of this dissertation is to explore the challenges and determinants of funding of start-up growth. The results demonstrate that the most important determinant of growth is access to funding followed by access to talent, collaboration and networking with the start-up ecosystem and training of founders and employees. Funding is one of the main reason why startups fail or succeed. The results highlight that the main barrier that start-ups face during the establishment and running their business are associated the government policy support for grants and credit and government regulations as to taxation and bureaucracy. The analysis confirms the correlation between challenges, determinants of funding and determinants of start-up growth.

The analysis shows that start-ups with co-founders with prior experience in another start-up tend to have a higher total amount of funding raised. Furthermore, the results provide feedback as to the funding sources used by start- ups at different growth stages and confirm entrepreneurial finance literature. To summarise our main findings, we conclude that:

- Start- ups at the bootstrap or pre-seed stage tend to choose Bootstrap, start-up competition (NBG seeds) and Incubator/ Accelerator programmes as a funding source.
- Start- ups at the pre-seed, seed and early stage /Series A tend to select Angel investors (EU) as a funding source.
- Start- ups at an early stage/series A, chose Venture Capital fund (EU) as a funding method
- Grants from EU Structural Funds (self-funding/family, friends) and Grants from Horizon 2020 and/or Horizon Europe funds (EIT programme)is selected as a funding method especially from companies at Early stage/series A, Growth stage/Series B and Exit phase.
- Start- ups at exit phase tend to select Venture capital merger / acquisition as a funding source.

Finally, the majority of start-ups have plans for internationalisation in the next 12 months. Start-up founders seem flexible to change their mission in order to realize their vision, even if they lose the management of their company. This finding was expected since the Greek start-up scene saw a stage of consolidation with new successes and a lot of balancing out during the last years. Further research as to the exit strategies would be interesting and determinants of success for at the Exit phase.

Although the present results represent an important contribution to the existing literature, as it confirms past studies about entrepreneurship and start-ups, it has some limitations related to the size of the sample. This sample is not a large sample but it is quite representative for the start-up companies in Greece. Due to the limitations to which this study is subject, it is deemed appropriate to conduct similar research with more Greek start-ups participating in the research covering the entire heterogeneity encountered in the Greek market. Future research should focus on greater heterogeneity of responses, allowing for a more detailed analysis of the factors that may be able to influence the financing of businesses at different growth stages. Further research may also provide further feedback as to the policy measures required to support start-up growth and the innovation ecosystem as a whole.

Governments could organize pitching and information sessions for start-up enterprises and investors in order to facilitate their collaboration and further financial development and supporting their sustainability and growth. Training and mentoring are the most imporant strategies of support for start-ups and small enterprises worldwide. European Digital Innovation Hubs and European Networks such as EIT and Entreprise Europe Network support new entrepreneurs and encourage them in their early steps through mentoring and counselling to overcome obstacles such as bureaucracy, the taxing system and to acquire knowledge to survive in the competitive business environment. Therefore, the impact of services offered in Hubs and incubators and accelerators may be the subject of future research.

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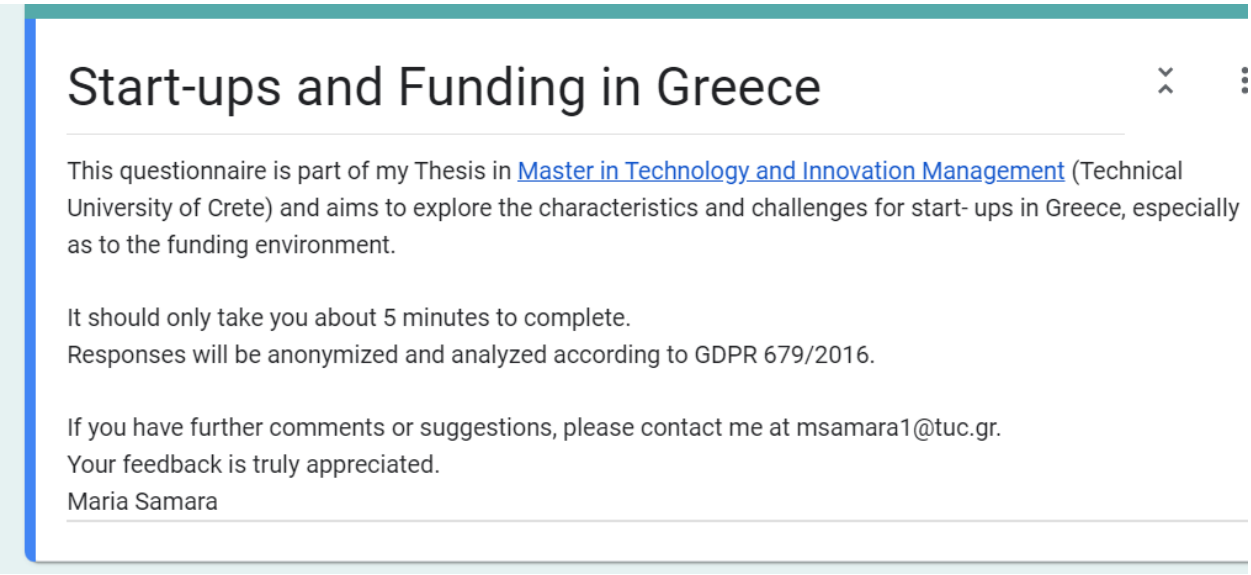
Appendix

Questionnaire



Start-ups and Funding in Greece

This questionnaire is part of my Thesis in Master in Technology and Innovation Management (Technical University of Crete) and aims to explore the characteristics and challenges for start- ups in Greece, especially as to the funding environment.

It should only take you about 5 minutes to complete.
Responses will be anonymized and analyzed according to GDPR 679/2016.

If you have further comments or suggestions, please contact me at msamara1@tuc.gr.
Your feedback is truly appreciated.
Maria Samara

Ενότητα 2 από 3

Start-up characteristics

This part includes 15 questions about the company (legal form, business sector, country of establishment, years of operation, growth stage) as well as information about the company's founding members and employees (average age, experience and motivation)

1. Start- up name *

Κείμενο σύντομης απάντησης

2. Contact person (email) *

Κείμενο σύντομης απάντησης

3. How many years does your company operate? *

1. 0-2
2. 3-4
3. 5-7
4. 8-10
5. 10+

4. Are you a member of Elevate Greece? *

- ○ Yes
- ○ No

5. Where did you initially establish your start-up company? *

- ○ Greece
- ○ Abroad
- ○ Άλλο...

6. What is the company's legal form? *

1. Individual Business - Ατομική Επιχείρηση
2. General Partnership - Ομόρρυθμη Εταιρεία (Ο.Ε.)
3. Limited Partnership -Ετερόρρυθμη Εταιρεία (Ε.Ε.)
4. Limited Liability Company -Εταιρεία Περιορισμένης Ευθύνης (Ε.Π.Ε.)
5. Private Capital Company - Ιδιωτική Κεφαλαιουχική Εταιρεία (Ι.Κ.Ε.)
6. Societe Anonyme - Ανώνυμη Εταιρεία (Α.Ε.)

7. Which is your primary (core) business sector (industry)? *

- Advertising & Marketing (AdTech)
- AgriTech/FoodTech
- Art, Cultural and Creative Industries
- Data Analytics- Big Data
- Defence
- EduTech- Education
- InsurTech- Insurance
- LegalTech/ RegTech
- Life Sciences (MedTech, HealthTech, BioTech)
- Logistics and Transportation
- Manufacturing
- Maritime
- Travel/ Hospitality/Leisure
- Well Being
- Entreprise software
- Entertainment/ Media (Games, Sports, Social)
- Energy & Environment
- FinTech -Financial Services (WealthTech)
- Hardware
- Human Resources
- Mobility
- Real Estate
- RetailTech- E-commerce- FashionTech
- Security
- Semiconductors
- Space
- Άλλο...

9. Which is your secondary business sector (industry)? *

- Advertising & Marketing (AdTech)
- AgriTech/FoodTech
- Art, Cultural and Creative Industries
- Data Analytics- Big Data
- Defence
- EduTech- Education
- InsurTech- Insurance
- LegalTech/ RegTech
- Life Sciences (MedTech, HealthTech, BioTech)
- Logistics and Transportation
- Manufacturing
- Maritime
- Travel/ Hospitality/Leisure
- Well Being
- Entreprise software
- Entertainment/ Media (Games, Sports, Social)
- Energy & Environment
- FinTech -Financial Services (WealthTech)
- Hardware
- Human Resources
- Mobility
- Real Estate
- RetailTech- E-commerce- FashionTech
- Security
- Semiconductors
- Space
- Άλλο...

9. How many employees are currently employed? *

1. 1
2. 2
3. 3
4. 4
5. 5+

10. How many are the company's co-founders? *

1. 1
2. 2
3. 3
4. 4
5. 5+

11. Gender of the company's co-founders? *

	0	1	2	3	4	5+
Male	○	○	○	○	○	○
Female	○	○	○	○	○	○
Non- binary	○	○	○	○	○	○

12. Did co-founders have previous experience in another start- up? *

- ○ Yes
- ○ No
- ○ Άλλο...

13. Did co-founders have previous experience in the core business sector? *

- ○ Yes
- ○ No
- ○ Άλλο...

14. What was your main motivation to start up your own business? You may select more than one answer option. *

- ☐ Ability to build your business future & self-motivation
- ☐ Untapped business opportunity (unmet market needs)
- ☐ Past experience
- ☐ Community impact
- ☐ Equity
- ☐ Prestige
- ☐ Άλλο...

15. What is the stage of start-up growth? *

- ○ Bootstrap (self- funding & family & friends)
- ○ Pre-seed stage (funding < 1 M)
- ○ Seed stage (funding ~ 1 - 4 M)
- ○ Early stage/ Series A (funding ~ 4-15M)
- ○ Growth stage/ Series B (funding ~ 15-40M)
- ○ Expansion phase/ Series C (funding ~ 40-100M)
- ○ Exit phase

Ενότητα 3 από 3

Start- up Funding and Challenges

Part 2 of the questionnaire includes 6 questions concerning funding (sources, amount, challenges and determinants/ critical factors for start- up growth)

16. Which is the total amount of funding raised so far? *

- 0
- <20.000 € (Pre-seed stage)
- 20-50.000 (Pre-seed stage)
- 50-100.000 € (Pre-seed stage)
- 100-500.000 (Pre-seed stage)
- 500.000 - 1 M € (Pre-seed stage)
- 1- 4 M (Seed stage)
- 4-15 M (Early stage/ Series A)
- 15-40 M (Growth stage/ Series B)
- 40-100 M (Expansion phase/ Series C)
- 100+ (Megarounds)
- Exit
- Άλλο...

17. Which of the following funding sources have you already used? You may select more than one answer option. *

- [ ] Bootstrap (self-funding, family, friends)
- [ ] Start-up competitions (eg. NBG seeds)
- [ ] Crowdfunding
- [ ] Incubator/ Accelerator Programmes
- [ ] Venture builders
- [ ] Venture capital
- [ ] Angel Investors (EU)
- [ ] Angel Investors (non-EU)
- [ ] VC funds (EU)
- [ ] VC funds (non-EU)
- [ ] Grants from EU Structural Funds (ESPA)
- [ ] Grants from Horizon 2020 and/or Horizon Europe funds (eg. EIT programme)
- [ ] Venture Debt
- [ ] Bank loans
- [ ] IPO (Exit)
- [ ] Merger or Acquisition (Exit)
- [ ] Άλλο...

18. Please rate the following challenges of start- up growth by level of difficulty (1= less difficult, 5= most difficult) *

	1	2	3	4	5
Shortage / Lac...	○	○	○	○	○
High labor cost...	○	○	○	○	○
High corporate...	○	○	○	○	○
Government bu...	○	○	○	○	○
Legal regulator...	○	○	○	○	○
Patents / Intell...	○	○	○	○	○
Lack of trainin...	○	○	○	○	○
Lack of busine...	○	○	○	○	○
Problems of te...	○	○	○	○	○
Strong market ...	○	○	○	○	○
Poor Marketing...	○	○	○	○	○
Failed access t...	○	○	○	○	○
Failed pitching ...	○	○	○	○	○
Reluctance of ...	○	○	○	○	○
Lack of govern...	○	○	○	○	○
No access to b...	○	○	○	○	○

19. Can you rate the importance of the following factors as determinants of start- up funding (1= no importance, 5= most important)? *

	1	2	3	4	5
Incubators	○	○	○	○	○
Accelerators	○	○	○	○	○
Technology an...	○	○	○	○	○
Digital Innovati...	○	○	○	○	○
European Fund...	○	○	○	○	○
National Fundi...	○	○	○	○	○
Business Plan ...	○	○	○	○	○
Banking sector	○	○	○	○	○
Technology Tra...	○	○	○	○	○

20. Can you rate the importance of the following factors as determinants of strengthening the start- up growth? (1= no importance, 5= most important) *

	1	2	3	4	5
Access to talent	○	○	○	○	○
Reduced tax	○	○	○	○	○
Reduced labor ...	○	○	○	○	○
Improved stoc...	○	○	○	○	○
Reduced burea...	○	○	○	○	○
Increased acce...	○	○	○	○	○
Increased acce...	○	○	○	○	○
Increased acce...	○	○	○	○	○
Increased colla...	○	○	○	○	○
Increased opp...	○	○	○	○	○
Increased traini...	○	○	○	○	○
Access to mar...	○	○	○	○	○
Building the rig...	○	○	○	○	○
Pivoting	○	○	○	○	○

21. Do you have plans for internationalisation (next 12 months)? *

- ○ Yes
- ○ No
- ○ Maybe
- ○ Άλλο...