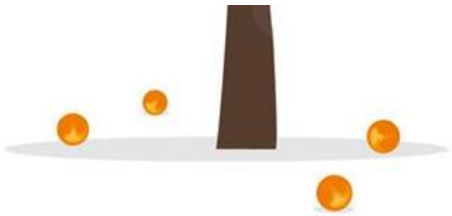
ORANGE GROVE: THE VITAMIN C FOR GREEK STARTUPS?



The participation in and perceived value of the incubator support activities and the latter's contribution to the startup survival chance

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COLOPHON

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ABSTRACT

It is acknowledged that new firms have a high chance to "die" during their first years of existence. Startup incubators provide business support services for entrepreneurs with the intention support them during the most vulnerable business stage. Previous studies proved that external support, such as incubators, increase the survival chance of new firms. However, it cannot just be assumed that all incubator support services are fruitful for tenant startups. The type of support provided, the type of tenants and contextual factors all play a role in the impact of the incubator to new firm survival.

This case-study was concentrated on startup incubator Orange Grove in Athens, Greece, and identified which specific support activities correlate with the survival chance of the (ex) tenants, controlled for individual characteristics. In addition, the study attempted to get clear how the entrepreneurs perceived the value of the support for their business. The research question that was central in the study, was as follows: "***How does Orange Grove contribute to the startup survival chance of the tenants?"*** The theory describes startup survival as businesses that are still existing after three to five years. However, most of the Orange Grove (ex) tenants are less than three years old. For this reason, startup survival was defined as businesses that left the incubator while being able to sustain in the market plus the startups that are currently active in Orange Grove for at least nine months.

For answering the research question, a literature- and empirical study was conducted. The literature study focused shortly on business incubators and factors that may increase the likelihood of new firm survival. On the basis of the theoretical framework, the incubator activities were divided in four types of support: physical-, knowledge-, networking- and mentoring support. The empirical study concerned a mixed method approach and consisted of a survey and semi-structured interviews with the Orange Grove (ex) startups. The results revealed that Orange Grove contribute to the startup survival chance of its tenants via the physical support, the knowledge support and the networking possibilities. No evidence was found that the mentoring support contributes to the survival chance. However, the contribution to the startup survival chance does not hold for all type of businesses.

The knowledge support seems most important for tenants without entrepreneurial experience, while the networking support seems most important for startups that stay tenant for less than a year. In general, the perceived value of the support services is rated as "good" according to the respondents. The research findings lead to the recommendation that further research should focus on why the incubator support only influences these type of businesses and why no relations were found for the other individual characteristics. For Orange Grove, it is recommended to specify the application selection procedure to the target groups, because it was significantly proven that the support increases the startup survival chance of these type of startups.

ACKNOWLEDGEMENTS

Piraeus, April 13, 2018

Dear reader,

Before you lies my master thesis, the final part of my master Economic Geography at the Utrecht University. I am proud to say that I finished this thesis and my master study!

I would first like to thank my thesis advisors of Utrecht University, Veronique Schutjens and Andrea Ascani for the support during the whole process of writing my thesis. Both steered me in the right direction and gave me new insights whenever I needed it. Veronique, I very appreciated your detailed feedback. It helped me out of my struggles and to get things more clear. Andrea, your kind words gave me the strength to continue writing when I felt unconfident about my progress.

I would also like to thank Natasha Apostolidi for giving me this opportunity of doing an internship in the inspiring entrepreneurial climate of Orange Grove in Athens. Living in Greece has been a great experience to me, as I met so many new people, learned a lot during my internship at Orange Grove and at the Dutch Embassy and developed my ambition in entrepreneurship. In addition, many thanks to all the respondents that took the time to fill out my survey and to the respondents that took the time to speak with me. I know how precious your time is.

I learned that Greece is a country contains more than the sun, tzatziki and the sea. Greece has an amazing culture with kind people that are always willing to help. During the financial crisis that started in 2009, these entrepreneurs decided to fight for their future. I was – and am still – shocked when I encountered the real outcomes of the crisis. I think that back in my home country, the Netherlands, we do not realize the real impact of the crisis for the Greeks. They still live in sorrow, in fear what the government is going to decide today in order to pay the national dept back. Young Greeks tend to leave the country to build a future somewhere else, because back home they face incredible high unemployment rates. I give them the good right. However, I am impressed and inspired by all the entrepreneurs that I have met, since they had the courage to set up a business and create their own jobs.

Furthermore, I would like to thank the Greek goddess Poseidon for creating the wonderful sea that gave me peace and power to continue the very last parts of this thesis. Athena, for giving me the wisdom and, of course, I would like to thank Aphrodite who brought me in contact with the best and most patient boyfriend that I could ever wish for.

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Moniek Jansen

TABLE OF CONTENTS

TABLE OF FIGURES

1 INTRODUCTION

"Greece looks to turn a corner after years of economic pain" quoted the headlines of the New York Times at the 24th of July, 2017. After nine years of financial dept crisis, the Greek Minister of Economy, Mr. Papadimitriou, announced that there is an opportunity that Greece is becoming a 'normal country' again. Multiple positive prospects about the Greek economy followed (OECD, 2017; FocusEconomics, 2017; European Commission, 2017) and articles even stated that *"It's official, Greece is exiting the crisis"* (Greek City Times, 2017; Social Europe, 2017). For years, the Greek GDP growth concerned a minus rate, the unemployment rate hovered around 27,5% during its deepest valley in 2013 (Statista, 2018) and 15% of the population earned below the extreme poverty threshold in 2015 (DiaNeosis, 2016). However, few days after the optimistic announcement of Mr. Papadimitriou, the Guardian (2017, July 30) quoted that the Greeks are far less optimistic about the future: *"uncertainty is the new normality"* and *"people can't see any light at the end of any tunnel"*.

The financial crisis has already caused a massive brain drain: many young Greeks leave the country for seeking a job – and their future - elsewhere. These Greeks basically faced two choices: leave the country and find a job elsewhere or creating their own job by setting up a business. The latter creation of new businesses can contribute the economy in terms of job creation and the opening of new market niches (Audretsch et al., 2008; Bosma et al., 2002). According to Found.ation (2017), which is an organization that studied the extent of entrepreneurship in Greece, the Greek startup ecosystem started to flourish since the beginning of the crisis in 2008. Startup ecosystems are interactive networks formed by organizations and people that support new business creation (Startupcommons, 2018). Especially since 2013, entrepreneurship support initiatives started to emerge in Athens, in the form of skills development, sharing experiences, Venture Capital funds and European and Greek funds for entrepreneurship appeared.

One of these initiatives is startup incubator "Orange Grove", which was established by the Dutch Embassy in Athens. Orange Grove aims to empower new firms to contribute to economic growth, strengthen the entrepreneurial climate in Greece and to reduce the brain-drain from the country. However, it is not clear if the Orange Grove support services are fruitful for all tenant startups.

1.1 SUBJECT: ORANGE GROVE AND NEW FIRM SURVIVAL

"New businesses die young" is what have been concluded in the majority of studies on new firm survival. Stinchcombe (1965) defined this as the *liability of newness* for startups. Moreover, Shane (2008) stated that:

> *"No matter how you measure new firms, and no matter which developed country you look at, it appears that only half the new firms started remain in business for five years, and less than one-third last ten years" (Shane, 2008)*

Startup incubators provide business support for entrepreneurs with the intention stimulate them during the most vulnerable business stages. Previous studies proved that external support, such as incubators, can increase the survival chance of new firms (Bandera & Tomas, 2017; Fukugawa, 2017). However, it cannot just be assumed that all incubator support services are fruitful for all tenant startups. The type of provided support, the type of tenants and contextual factors may all play a role in the impact of business incubators support to new firm survival.

1.2 OBJECTIVES

The purpose of this study is to get insight in the use and perceived value of the support activities of startup incubator Orange Grove from Greek startups. Orange Grove contains of all four business support services that most incubators provide according to the theory (Peter et al., 2004): a physical infrastructure, an education programme, networking possibilities and a personal mentoring program. The study aims to examine the relation between the intensity use of every support service and startup survival. Furthermore, the goal is to get insight in the perceived value of the support according to the entrepreneurs. Additionally, previous research emphasize the influence of entrepreneur- and business characteristics on the startup survival chance. The relations between the incubator activities and startup survival should therefore also be controlled for individual characteristics. By empirically examining the participation in and perceived value of the Orange Grove support activities and relating this to the startup survival chance of different types of startups, a more complete understanding of the impact of incubator support to new firms is produced.

1.2.1 Research questions

The research motivation and the objectives lead to the following research question and sub-questions:

Research question:

"To what extent does Orange Grove influence the startup survival chance of its tenants?"

Sub-questions:

1. Which incubator activities are related to the startup survival chance?
2. What is the perceived value of the incubator activities according to the entrepreneurs, and are these values related to the startup survival chance?
3. Which individual- and business characteristics of the tenants relate to the startup survival chance?
4. To what extent does the relation between the incubator activities and startup survival hold when controlling for entrepreneur- and business characteristics?

1.3 RELEVANCIES

1.3.1 Scientific relevance

The question whether startup survival can be predicted, has been preoccupying scholars for some time. Previous research already extensively examined entrepreneur- and business characteristics that influence the startup survival chance (Andersson & Koster, 2016; Bosma et al. 2014; Audretsch et al., 1997) and this study will not do a better job in this. Many studies followed the resource-based view theory from Penrose (1959) and the liabilities theory of Stinchcombe (1965). Penrose threw a different light on strategic options for firms by looking at their resources rather than in terms of their products. Stinchcombe (1965) argued that new businesses suffer a liability of newness and smallness.

Less research is available about overcoming the liability of newness by strategically joining a startup incubator. In addition, the literature is scarce on the impact of the separate incubator support services. It seems obvious that not all of the services influence the startup survival chance with the same extent.

Furthermore, since previous research has shown that the startup survival chance differ for specific individual characteristics, it is assumable that also the added value of the incubator support may differ between different type of entrepreneurs and startups. This study fills this gap by examining the use and value of several incubator support services on startup survival. Furthermore, Mas-Verdú et al. (2015) suggested to compare existing literature with new incubator studies in different geographies. Only few studies have been conducted on Greek entrepreneurship, but none of them focused on the impact of incubation programs (Kokkalis, 2017; Liargovas & Repousis, 2015; Ratinho & Mitsopoulos, 2017). This study contributes to this field since Greece is an under researched geography in the entrepreneurship literature.

1.3.2 Societal relevance

The phenomenon of a startup ecosystem is relatively young in Greece and took a leap forward in 2008 (Found.ation, 2017). Liargovas & Repousis (2015) investigated the relationship between regional output in GDP and physical-, knowledge-, and entrepreneurship capital. They conclude that investments in entrepreneurship- and knowledge capital strongly affect the regional economic output in Greece. Another report called: "Entrepreneurship in the era of the financial crisis" (2017) states the following:

> *"The major limitation of this report is access to data, as there is no registered list of startups and thus no way of knowing every company founded. Most of the data has been hand-picked by those interested in monitoring the ecosystem and therefore all conclusions must be treated as relative." (Found.ation, 2017, p. 6)*

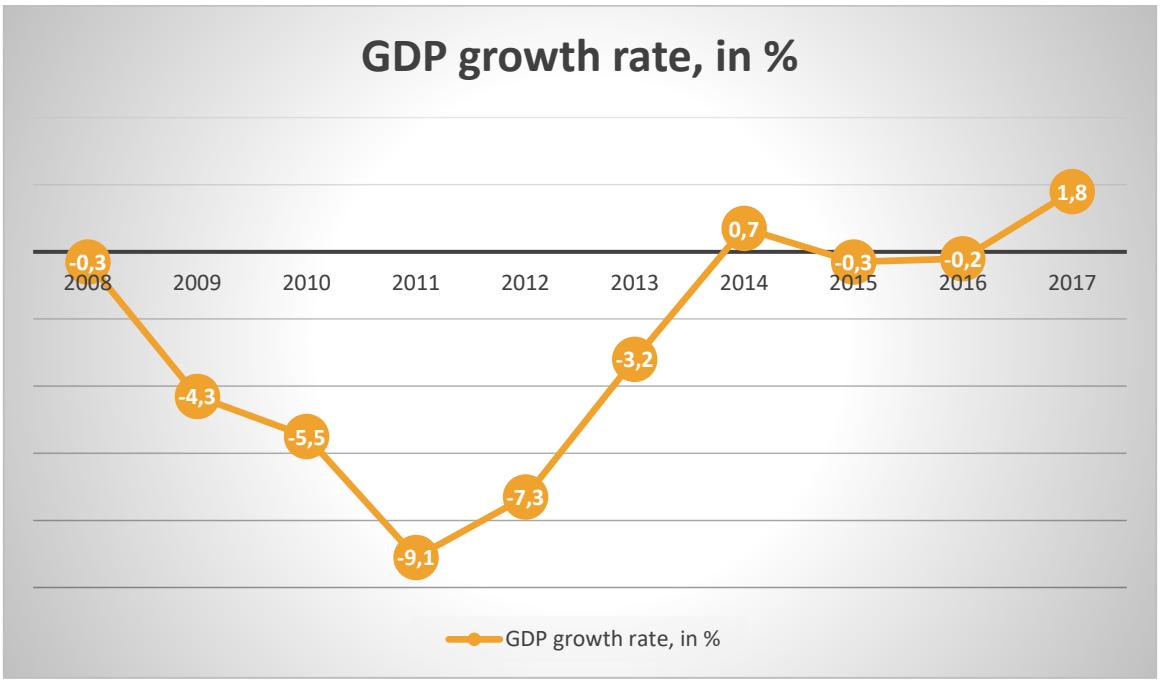
This study contributes to this because a full dataset with all startups that were ever part of Orange Grove was completed. Obviously, collecting more data about Greek startups fosters a more intensive research. This study and the methodology may become an example for more incubator- and startup related studies in Greece. Furthermore, the results carried out in this study are useful for all involved actors of Orange Grove. The Dutch Embassy and the Stavros Niarchos Foundation, lead donor of Orange Grove, were interested in the impact of the incubator since no impact evaluation was ever done. The study also contributes in attracting new sponsors and in motivating young entrepreneurs to start a business in Greece. In addition, knowing which incubator services increase the startup survival chance of which type of entrepreneurs can bring new insights for other incubators to improve their support supply or specialize their services to specific startups.

1.4 CONTEXTUAL OVERVIEW: THE GREEK ECONOMY

1.4.1 GDP growth rate and unemployment

Greece is a developed country with a population of almost 11 million people. With a Gross Domestic Product (GDP) that exists for 80% on services, 16% of industry and 4% of agriculture (Statista, 2018), it can be said that the Greece has a service-based economy. Since the beginning of the financial dept crisis, Greece has been suffering from a declining GDP growth rate, shown in figure 1.1 on the next page.

Figure 1.1: Fluctuations in GDP growth rate 2008 – 2017 (source: TradingEconomics, 2018-A)



In addition, the unemployment is considered to be high (20.8% in October 2017). Especially, compared to other European countries, such as the Netherlands (4.5%) (TradingEconomics, 2018-B). The Greek unemployment rate is even two times higher among the people in between 15 and 25 years old (TradingEconomics, 2018-C). This inability of finding a job in Greece led to the *brain drain* that young Greeks start seeking for jobs in other countries. As the Guardian (2016) stated, this "Generation G" would be a big loss of *human capital* and lowers the future perspectives of the country. The WorldBank (2018) indicates that the growth rates of all sectors decreased drastically, with manufacturing sectors on top.

1.4.2 Competitiveness and the startup ecosystem

The WorldBank (2018) states that the "ease of doing business" in Greece is medium. With a 1 for the easiest country of doing business and a 190 for the most difficult, Greece scored 67. In addition, the Global Competitiveness Index of the World Economic Forum (2018, p. 327) ranks Greece as 87th out of 137 countries with regard of the national competitiveness. The country scores relatively high in higher "education and training" (44th), "technological readiness" (50th) and "market size "(58th). Despite these low scores for a developed country, it is listed as one of the 36 "innovation-driven countries" in the world. It seems that Greece has a strong infrastructure and education that develops high-skilled and innovation-driven workforce . Unfortunately, due to the poor market- and financial development, the Greek competitiveness has been lowered. The most problematic factors for doing business in Greece seem the high tax rates, government bureaucracy, limited access to financial assets and policy- and governmental instability (Found.ation2017, p.9).

Furthermore, Athens scored lowest in mentoring and managerial assistance for startups (Found.ation, p.11). The European Startup Monitor (2017, p. 22) even shows that Greek startups are on average the youngest of Europe, because more than half of the startups is less than one year old. Greece also scores lowest in the percentage of growth stage startups (8,6%) compared to the European average (23,7%). A research of entrepreneurship through the eyes of the young Greek concludes that 45% of Greek students consider their country as a non-friendly for entrepreneurship (Endeavor 2016 et al.).

Ratinho & Mitsopoulous (2017) state that the heterogeneity of Greek business incubators causes a challenging understanding how and by whom entrepreneurs are being supported. They presented a brief overview of five business incubators in Greece, including Orange Grove, and assume that the Greek incubation models evolved into a mix of "traditional" incubator services (for startups in the early business phase) with accelerator services (for startups in the business growth stage). Next paragraph gives insight in the support that Orange Grove provides for the tenants.

1.5 CONTEXTUAL OVERVIEW: STARTUP INCUBATOR ORANGE GROVE

Orange Grove was created by initiative of the Embassy of the Kingdom of the Netherlands in September 2013. The mission is to stimulate entrepreneurship and reducing the Greek youth unemployment. The short-term goals are: assisting in the area of entrepreneurial mentality and skills, offering a bigger network and bringing the network together in its premises and emerging the ecosystem as a whole (Orange Grove, 2018).

1.5.1 How does it work?

Entrepreneurs can apply at Orange Grove by filling in the application form via the website during the application rounds, which are organized approximately twice a year. The applicants are invited for a selection interview at Orange Grove. A selection committee, existing of the Orange Grove staff, a responsible of the Dutch Embassy and professionals from the entrepreneurial field, selects the entrepreneurs with promising business ideas. After being selected, the entrepreneurs can participate in the introduction bootcamp.

The bootcamp is a three or four day event organized in cooperation with universities from Greece (Athens University for Business and Economics) and the Netherlands (University of Amsterdam, University of Delft and the University of Wageningen). Every bootcamp contain seminars about how to start a business, with topics like creating a business model canvas, a value proposition, customer segmentation. Furthermore, pitch training workshops for the entrepreneurs are provided. The introduction bootcamps are not obliged for new tenants, but very recommended since they contain general business knowledge for starting entrepreneurs.

The incubator's co-working space is called "OG1". Startups also have the possibility to rent a closed office room, which are the "OG2 spaces". Both of the working spaces are located on the ground floor of the building of the Dutch Embassy. Entrepreneurs can use all the assets that are available in the co-working space, such as the kitchen, the movable furniture and they can even drink as much as sponsored Heineken beers or Douwe Egberts coffee as they want.

Figure 1.2 and 1.3: The co-working space of Orange Grove (source: author)

Almost every week (international) guest speakers are invited to give presentations on different business topics, such as accounting and tax services, e-commerce, online services, pitching workshops, market research and the business plans. Professionals are invited to speak about their experiences and to help the young entrepreneurs with their difficulties. Sometimes, entrepreneurs have the chance to meet the guest speakers in person during one-on-one meetings.

Figure 1.4: Visit and roundtable of Mr. Papadimitriou, Greek Minister of Economy and Development

Furthermore, every startup has the opportunity get a personal mentor, a professional entrepreneur or an expert in their business field. The mentoring program is customized to support entrepreneurs in improving their business plan, strategy and setting future goals. Additionally, every startup has access to the network of accountants and lawyers to gain legal and financial advice. The whole extensive network varies from contacts of the Dutch Embassy to Greek politics, from successful entrepreneurs to multinationals and from European funds to international venture capitalists and investors.

Figure 1.5: Winners of the Squeeze summer edition, June 2017 {source: by author)

Despite all support services that increase the knowledge of tenants, the management organises a pitching competition every three months: the Squeeze. Apparently, the Squeeze makes Orange Grove unique as incubator, since the startups have the chance to win 15.000 euros (first prize) and 10.000 euros (second prize) as investment for their business. During the competition, eight startups pitch their business ideas in front of an international judge panel and audience. One member of each startup enters the stage and gives a five-minutes pitch, followed by a five-minutes question round by the judges. At the end of the evening, the judges give their feedback and announce the two winners of the competition.

Orange Grove is a non-profit incubator and exist from donors and sponsors. Heineken is the main sponsor and sponsors free beers that are always available for every Orange Grove member. Heineken also organizes seminars and networking events, called “Heineken Growth Makers”. The Stavros Niarchos Foundation (SNF) is the biggest donor and is renowned as the “lead donor” of the incubator. For instance, the Squeeze money comes directly from SNF. Recently, the SNF has asked for a more extensive research into the impact of Orange Grove the last four years. This study fits seamlessly with this request.

Figure 1.6: Sponsors of Orange Grove (source: Orange Grove, 2018)

1.5.2 Reading guide

The thesis is structured as follows. The first chapter gave an overview of the research subject and the objectives. Chapter 2 describes the theories that were found during the literature study and that form the basis of the empirical study. The chapter contains theory on the concept of business incubation and which entrepreneur- and business characteristics are related to startup survival according to the academic literature. The theoretical framework concludes in a conceptual model and research hypotheses. Chapter 3 clarifies the methodological considerations of the empirical research. It explains why quantitative- and qualitative approaches are combined for answering the research questions. Furthermore, the methodology chapter clarifies the representativeness, replicability and validity of the study. Chapter 4 presents the empirical results. Every results paragraph describes if significant relations were found between the participation at the specific incubator support activity and startup survival, the perceived value of the support if the significant relations still remain after controlling for entrepreneur- and business characteristics. Chapter 5 finalizes the thesis by giving answers on the research questions and ends up in a final conclusion. The findings are interpreted and clarified in the second part of chapter 5: the discussion. The thesis ends with suggestions for further research, describing the research limitations and recommendations for Orange Grove.

2 THEORETICAL FRAMEWORK

This chapter describes the theoretical basis of the study and is structured as follows. Paragraph 2.1 includes theory on determining new firm survival. Concepts as the liability of newness (Stinchcombe, 1965) and the Resource-Based View (RBV) for firms (Penrose, 1959) are explained. The RBV for firms emphasizes that resources can increase the survival chance for new firms, especially resources that are grounded in the human- and capital of the entrepreneur. Human capital is the capital that individuals contain and covers the education, experience, knowledge and skills of entrepreneurs. The social capital of individuals consists of all the resources that are available through their social network. Startup incubators can contribute to these resources by providing support services. The support services of startup incubators are explained in paragraph 2.2 and categorized in four key services: physical support, knowledge support, networking opportunities and mentoring support. Beside that resources can increase the survival chance of new firms, also entrepreneur- and business characteristics have been identified as determinants of startup survival. They are described in the last paragraph of the theoretical framework.

2.1 NEW FIRM SURVIVAL

The academic literature agrees that survival is a big challenge for new firms (Carrol et al., 1983; Hackett & Dilts, 2004; Headd, 2003, Van Praag, 2003; Stinchcombe, 1965). Startup survival occurs when the new firm is able to sustain free and viable in the market and has achieved long term sustainability. However, only half of the firms tend to survive after five years (Hackett & Dilts, 2004; Headd, 2003; OECD, 2016, p. 81; Gonzalez, 2017; Shane, 2008). Korunka et al. (2010) define firms that are still existing after three years as medium-term survival, because the most instable business phase is over. Long-term survival shows up after eight to ten years, when the firm overcame its adolescent phase (Korunka et al., 2010; Shane, 2008).

Studies on the determinants of new firm survival often with the same factors, but is not consistent about the specific impact of the factors. Initially, new firms do not have an experienced background which can reduce their reputation and trust-building with customers or stakeholders. This increases the chance of early business termination (Nicolò, 2015; Stinchcombe, 1965). Yet, the individual characteristics of the entrepreneur and type of business are often seen as the determinants that can predict the likelihood of business survival (Astebro & Bernardt, 2003; Coleman et al., 2013; Fried & Tauer, 2015; Gai & Minniti, 2009; Van Gelderen et al., 2005; Van Praag, 2003). Furthermore, the role of the external context, such as the geography, politics and the economy, is discussable. It was already mentioned that Shane (2008) does not consider the geographical contact as a determinant of startup survival. In contrast, the related-variety theory of Frenken et al. (2007) argues that new firms that are established in areas with concentrations of firms in related industries are more likely to survive than firms that are established in areas without firms in a related sector.

2.1.1 The Liability of Newness

Stinchcombe (1965) defined the high risk of early business termination as the “liability of newness”. He underpins his statement with conditions of constraints that often appear in new firms. One of the conditions is that the organizational structure of startups can be challenging for new team members. Even though their skills and knowledge suit to their function, they develop a role in a new organization that has different expectations than they were used to. Unclear working norms and organizational structures in startups can therefore lead to an inefficient working atmosphere and fosters the liability of newness. Yet, a disciplined workforce that takes initiatives could “*greatly*” reduce the liability of newness (Stinchcombe 1965, pp. 148-149).

In contrast, established firms contain of experienced employees that can easily educate the new entrant on how the organizational structure works. Furthermore, incumbent firms tend to have more stable relations with business partners while new firms should build those relations from scratch.

In contrast, new firms could benefit from being new, because of their strategic flexibility and their attractiveness by stakeholders that aim to discover new inventions as first. Choi and Sheperd (2005) defined these advantages as the "assets of newness", while Brüderl and Schlüsser (1990) speak of a "honeymoon effect". This honeymoon effect points out that the failure features are low during the enjoying period of setting up the business. However, as soon as the newness fades away the interest of stakeholders may disappear and the financial resources will become less. Another explanation is that the entrepreneur has enough own financial resources for the first period, but problems occur as soon as this money runs out. In fact, a liability of adolescence appears (Brüderl & Schlusser, 1990).

Furthermore, the organizational ecology theory (Hannan & Freeman, 1993) considers that new firms are in a more favorable position to survive than incumbent firms. Startups are more flexible in adapting new organizational structures than established firms. The older and larger the firms, the more likely to die because of outdated structures or structural inertia. In this Darwinistic view, only new firms will survive in the end, caused by their capability to adapt on new developed trajectories. However, many scholars proved that new firms have a big chance to die young, in particular because of having less resources than incumbent firms (Aldrich, 2016; DeVaughn & Leary, 2016; Nicolò, 2015). The competitive advantages for organizations that derive from resources, finds the basis in the Resource-Based View for firms.

2.1.2 The Resource-Based View (RBV)

With the RBV, Penrose (1959) noted that the resources that are available for a specific firm, will shape its productivity and performance. The combination of human, physical and organizational resources create the business opportunities to grow. The RBV beholds the firm as a mix of tangible and intangible resources that can lead to competitive advantages. Tangible resources refer to the physical possessions owned by the firm, such as an office or machines. Intangible knowledge are non-physical the assets of the firm, such as reputation, knowledge and social networks. It was already theorized by Michael Porter (1985) that firms with advantages compared to its competitors are more likely to survive. However, Porter focused on cost reduction and product differentiation, while the RBV assumes that all assets, processes, capabilities and knowledge of an organization predict the survival chances of a firm (Barney, 1991, p. 101).

2.1.3 Social Capital Theory (SCT)

A crucial resource of for firms are the social networks of entrepreneurs. Social networks allow entrepreneurs to exchange information, gain access to different types of resources and to receive moral support. They are built on linkages between contacts. An empirical study of Rothschild & Darr (2005) argues that all forms of networks are crucial for entrepreneurs. The social relations seem key benefits for fundraising, business advice and financial support (Antoncic & Hoang 2003; Gonzalez, 2017). Entrepreneurs gain access to specific resources more easily by using their social network than in a situation where they have to find themselves. The sum of all resources that are available through the social structure in which individuals live is defined as social capital (Carter et al., 2010; Farhat et al., 2017). Social capital in entrepreneurship predicts that the share of tacit knowledge, which is more complex, is crucial to the survival chance of new firms. Socially embedded entrepreneurs leverage resources that can foster business survival, such as business- and industrial knowledge, investments and the recognition of new ideas (Audretsch et al., 2008). The social capital that derives from the individual network can include promising information, but can also lead to new network ties with

"*friends from friends*" (Boschma, 2010; Aldrich & Kim, 2005). Furthermore, entrepreneurial family members or friends can function as supportive role models for young entrepreneurs who may increase the startup survival chance (Andersson & Koster, 2010; Fritsch & Mueller, 2007; Fritsch & Wyrwich, 2012). These role models can help potential- or young entrepreneurs with difficulties in setting up a business and assist in the development of new skills (Lussier, 1995; Bosma et al., 2012). Moreover, they can improve the social acceptability of being an entrepreneur (Andersson & Koster, 2010).

2.1.4 Human Capital Theory (HCT)

Human capital is defined as *"productive wealth embodied in labour, skills and knowledge*" (OECD, 2001) and covers education, experience, knowledge and skills (Unger et al., 2011; Huggins et al, 2017). In other words, it concerns every asset that a person contains. Human Capital is a prominent determinant of startup survival in existing studies (e.g. Bosma et al., 2014; Coleman et al., 2013; Davidsson & Honig, 2003; Carter et al., 2010; Marvel et al., 2016). The majority of the scholars conclude that it contributes to business performance. Bosma et al., 2004 speak about industry-specific human capital, or experience in the specific business field, and entrepreneurship-specific human capital, or experience in setting up a business. The entrepreneurial experience of the entrepreneur seems to play a great role in the survival chance of new firms (Fried & Tauer, 2015; Huggins et al., 2017; Shu & Simmons, 2017). Experienced entrepreneurs possess advantages to reduce unpleasantly surprises.

Furthermore, human capital from formal education is a common feature that is related to firm survival (Berman, 2017; Coleman et al., 2013; Gai & Minniti, 2009; Headd, 2003; Millán et al. 2012). Mengistae (2006) concludes that the likelihood of survival increases by every year of high education. However, the type of education may be the reason for the relation, rather than the education level. Educational studies that are specified to business activities will contribute more to the human capital of the entrepreneur than that only the level of education does (Van Praag, 2003; Ribeiro-Soriano & Castrogiovannic, 2012).

The importance of social- and human capital for firms underlines the RBV. These resources can occur in different ways, such as from the entrepreneurs, other employees or from external sources. A prominent external example are business incubators. Business incubators are entities that are specialized in supporting firms and can develop the required business skills (human capital) and network relations (social capital) of entrepreneurs via the support services (Bandera & Thomas, 2017). A more comprehensive overview of the startup incubator concept and the specific business support is given in paragraph 2.2.

2.2 THE STARTUP INCUBATOR

Startup incubators can compensate for the social- and human capital of firms by providing different types of support (Bandera & Tomas, 2017; Fukugawa, 2017). The "business incubator" has been defined differently in the literature, for example as research parks, technology innovation centres, incubators without walls or even complete virtual incubators. The Dutch Incubation Association (2017) gives the following definition:

> *"An incubator is an organization that create (incubation)processes in order to accelerate growth of high-quality startups to successful organizations, by the use of an integrated package of services. Such as work space, services, culture, coaching, networking and (access to) capital." - DIA (2017, translated by author)*

Incubators can increase the startup survival rates of tenants, measured as the percentage of startups that graduated or exited successfully from the incubator (Bandera & Tomas, 2017; Fukugawa, 2017; Hackett & Dilts, 2004; Peter et al., 2004). Motivations for new firms to become part of a startup incubator are mainly based on minimizing initial costs, being embedded in a supportive entrepreneurial environment (Bandera & Tomas, 2017), building networks and improving business knowledge (Allen, Raz et al., 2009). In contrast to studies that emphasize the positive advantages of the support services to startup survival. It is hard to draw conclusions about the specific impact value of incubators, because there exist many types of incubators, tenants and support services (Grimaldi & Grandi, 2005). Regardless a diversified supply of business support, incubators tend to share certain key characteristics. The most common incubator services are a shared working spaces, networking opportunities, knowledge transfers, business education and tutoring services (Bøllingtoft& Ulhøi, 2005; Hackett & Dilts, 2004; Peter et al., 2004;; Fukugawa, 2017; Lai& Lin, 2015).

2.2.1 Business support services

The first key characteristic is the physical infrastructure and exist of all the physical resources of the incubator, such as co-working space, laboratories, meeting facilities and phone- and internet connections (Peter et al., 2004; Chan & Lau, 2005). This incubator "with walls" actually alleviates all administrative tools that are required for the tenants (Grimaldi & Grandi, 2005). The sharing of resources can also thrive knowledge transfers and network relations between tenant startups (Bergek & Norman, 2008; Böringer, 2006). Second, knowledge support services aim to develop the human capital of tenants (Alvarez et al., 2013; Bandera & Tomas, 2017; Lia & Chen, 2010), such as entrepreneurial knowledge, skills, marketing assistance, financial training. Guest speakers can also provide personal advice in meetings where entrepreneurs can ask all of their questions (Cohen, 2013).

The third main support service of incubators are networking opportunities for tenants. The concept of network-based incubation, developed by Hansen et al. (2000), aims to assist startups in developing a diversified, professional network to increase their social capital. Incubators can accelerate the process of network building in via the internal network and the external network. The internal network consist of all other tenant startups. Networking in such entrepreneurial environments can lead to embedded relations that may lead to future cooperation (McAdam & McAdam, 2006; Napier and Hansen 2011; Auerswald & Dani, 2017). The external network of incubators consist of the contacts that entrepreneurs can get in touch with via the incubator, for example accountants, lawyers and investors (Bollingtoft; 2012; Hansen et al., 2000). Incubators can perform a broker role in linking tenants with professionals from the external network, because they can improve the recognition of new business opportunities (Peter et al., 2004). They can provide a comprehensive supply of professionals that enables startups to meet, contacts that otherwise would have been too difficult to find (McAdam & McAdam, 2006).

However, the network opportunities does not always contribute to startup performance (Chan & Lau, 2005; Pettersen & Götsén., 2016; Soetanto & Jack, 2013). Pettersen et & Götsén. (2016) clarify in their empirical study of Norwegian startups that the network resources acquired by the own entrepreneur were more critical for the development of firms than the network resources of the incubator. The entrepreneurs' network lead to the business identity and reputation, which was estimated as more important than the network relations of the incubator. Nevertheless, with the social capital arguments in mind, it is assumable that networks are rather beneficial for the likelihood of startup survival than disastrous.

At last, previous academic studies mentioned that the mentoring support of incubators contribute to business performance. These tutoring or coaching services are established for giving personal advice to the entrepreneurs (Peter et al., 2004; Cohen, 2013), although no specific relations with the startup survival chance were found in the literature.

2.2.2 Best practices?

The academic literature is, thus, not consistent about the benefits of the support services. Following the SCT and the HCT it is clear that the accessibility to networks and business knowledge are advantageous for startup survival, although the real impact of the network assistance of incubators is not yet clear. Peter et al. (2004) imply that the incubator management should improve and adapt their services on the demands of tenants and with actual changes in the business fields. The managerial guidance within incubators differ from strong intervention to a more laissez-faire approach. Strong intervention means that the entrepreneurs are strongly guided by professionals from the incubator's network. In contrast, the laissez-faire approach only give assistance when it was asked by the tenants (Bergek & Norrman, 2008). Nevertheless, the value of the incubator activities to firms would also depend on participation the entrepreneurs. In addition, the length of the incubator membership depends on the entrepreneur and on the quality of the program. Sepulveda (2012) states that if the quality of the services are high, the average time to "graduate" will be shorter than when the quality of the services is low.

It is important to bear in mind that also individual characteristics may play a role in the use and perceived value of the incubator activities. The literature stresses the importance of the entrepreneur and the type of business for successful firms, rather than the unique product or service that they provide. Beside the human- and social capital characteristics, studies have shown that also gender, age and the motivation of becoming entrepreneur are related to startup survival (Fried & Tauer, 2015; Gai & Minniti, 2009; Van Gelderen et al., 2005; Van Praag, 2003).

2.3 ENTREPRENEUR CHARACTERISTICS AND STARTUP SURVIVAL

Studies conclude that startups from female owners are less likely to survive than startups from male entrepreneurs (Boden & Nucci, 2000; Fairlie & Robb, 2009; Huggins & Thompson, 2017). However, other studies argue that gender is not related to the startup survival chance (Caliendo & Kritikos, 2010) but that this is caused by underlying factors such as previous entrepreneurial experience (Robb & Watson, 2012). The phenomenon that males start more businesses than females (Langowitz & Minniti, 2007) does not mean that they have a higher startup survival chance. Explanations for the differences in entrepreneurial activity for gender are: obstacles for women in economic activities, such as having a lack of social capital, lower material support, less experience and a lack of financing resources (Fairlie & Robb, 2009; Rodriguez & Santos, 2009). In addition, it has been proven that men have more top positions in the entrepreneurial field, which can lead more network opportunities (Boden & Nucci, 2000; Neumeyer et al., 2018). This could indicate an indirect effect between gender and the startup survival chance via a greater human- and social capital of males. Neumeyer et al. (2018) examined the role of females for social capital and conclude that experienced female entrepreneurs have a higher degree of network connectivity than unexperienced female entrepreneurs. Interesting is that male entrepreneurs tend to be more confident and optimistic about the future of their business than females (Puri& Robinson, 2007; Ucbasaran et al., 2010)..

The age of the entrepreneur does not seem to matter for new firm survival. However, it could be that the age of the entrepreneur matters the extent of contribution of the incubator services to the startup survival chance. The highest interest for entrepreneurship appears in the adult phase, which is

between 35 and 44 years old, according to OECD (2016, p. 126). Although no evidence was found between the age of the entrepreneur and startup survival, it is assumable that startups from older entrepreneurs are more likely to survive than firms from young entrepreneurs, due to their previous experiences with entrepreneurship and developed skills (Simón-Moyá, 2012).

Bosma & Sternberg (2014) distinguishes two different motives of becoming an entrepreneur: necessity-driven and opportunity-driven. Necessity-driven entrepreneurs start their own business because they do not have any other job possibilities. For example, in times of economic crises when the unemployment rate is high. The opportunity-driven entrepreneurs choose to start on their own although they were able to find another job. They discovered new chances in the market or preferred to be independent. According to the GEDI (2016, p.16) the opportunity-driven are generally better prepared and have more skills than the entrepreneurs that are necessity-driven. Opportunity-driven startups seem to be more likely to survive (Bosma & Sternberg, 2014). Block & Sadner (2009) emphasize that this may be mediated by the education level of the entrepreneur: people that have a university master degree would be more able to see a new market niche than people who never went to university.

Obviously, the working attitude plays a role in the firm's performance and survival. Entrepreneurs who work full-time on their startup are more committed to their business than part-time entrepreneurs (Bosma et al., 2004). The more hours working on the business, the greater the chance of survival (Bosma et al., 2004; Gai & Minniti, 2009). However, being full-time entrepreneur brings more risks. A part-time entrepreneur can have another job next to the startup for generating income (Van Gelderen, 2005). Beside the number of working hours, the productivity and effectiveness during the working hours may be even more important. Entrepreneurs who are well-prepared increase their business chances. An example is having a clear business plan or strategy (Lussier, 1995; Van Gelderen et al., 2005; Gonzalez, 2017). Business plans are designed to focus and structure the goals in a specific time setting (Van Gelderen et al., 2005). The importance of well-preparedness is grounded in the Goal Setting Theory (Gonzalez, 2017): entrepreneurs who are motivated by career autonomy and set clear goals seem to have greater chance of survival than entrepreneurs without clear goals.

2.3.1 Business characteristics

The organizational ecology theory (Caroll & Hannan, 2000) consider firms as individuals with different demographic characteristics, such assize, age and industrial sector. It already became clear that business age is a common determinant for the startup survival chance in the liability of newness- and adoscelence theories. Stinchcombe (1965) defined the phenomenon of early business deaths as the liability of newness because entrants business suffer more compared to a similar incumbent business. However, other researchers speak of the honeymoon effect or the liability of adolescence, they argue that the survival chance is not the lowest at the start of the firm but after one or two years, for example when the financial resources run out (Bruderl & Schussler, 1990; Strotmann, 2007; Fichman & Levinthal, 1991). The influence of business age to the startup survival chance was underlined by multiple other empirical studies. (Audretsch, 1997; Shane, 2008; Van Praag, 2003).

Another common threat for new firm survival is the size of the business or the "liability of smallness" (Brüderl & Schlusser, 1990). The basis of the liability of smallness is that the larger the firm, the greater the survival chance. The liability of smallness emerges from the same arguments that were given to the liability of newness: a lack of financial resources, struggles to attract the same skilled work as incumbent firms and the difficulty to attract investors (Aldrich & Auster, 1986). However, the effects of age and size are often combined since most new firms tend to be small in the beginning of the business life cycle (Almeida et al., 2003; Astebro & Bernhardt, 2003; Audretsch et al., 1997). It is assumed that larger firms, in terms of people, have access to a wider range of resources than smaller firms (Carroll 1983 et al., Van Praag, 2003), because managerial tasks can be divided, the social- and human capital will be more extensive (Astebro & Berhnardt, 2003; Huggins & Thompson, 2017). With the same reasons, Mas-Verdú (2014) states that firms starting with more entrepreneurs would be more likely to grow than firms starting with less entrepreneurs, which is underlined by Audretsch (1997) who found that the number of employees is an important indication for startup survival, but becomes less important when the firm grows older.

The first paragraph of the chapter mentioned that new firms that are established in areas with concentrations of related industrial firms, are more likely to survive (Shu and Simmons (2017). This study however, does not take locational factors into account because the study is conducted on the same location. More interesting is the relation between the industrial sector and startup survival. The HCT proposed that entrepreneurial experience leverages startup survival. The same applies for experience within the same industry (Cassar, 2014). There are many industrial factors that indicate the likelihood of firm survival, for example growth rates (Audretsch, 1997; Audretsch et al., 1997; Van Gelderen, 2005), entry barriers, economies of scale (Audretsch & Mahmood, 1995), the extent of technology (Cassar, 2014). Audretsch et al. (1997) consider negative relations between both the industrial growth- and entry rate and the startup survival chance, because of competition. However, new firms in high-growth industries have more opportunities than new firms in industries with low growth. Although high-growth industries are considered to have high entry rates, the high entry rates do not directly lead to a higher survival rate. For example, when the exit rates also tend to be high (Huyhebaert, 2000). To conclude researchers do not agree on the relation of sectoral growth and the startup survival chance. Mainly due to differences in the wider context, like the geography, politics or economy. Although the Greek Gross Domestic Product (GDP) far more of services (80%) than of industry (16%) and agriculture (4%), it cannot be assumed that service-based startups have more chance to survive. Even more, agricultural businesses may have less competitors and therefore more chance to survive. Still, theory on relations between specific business sectors and startup survival is not evident.

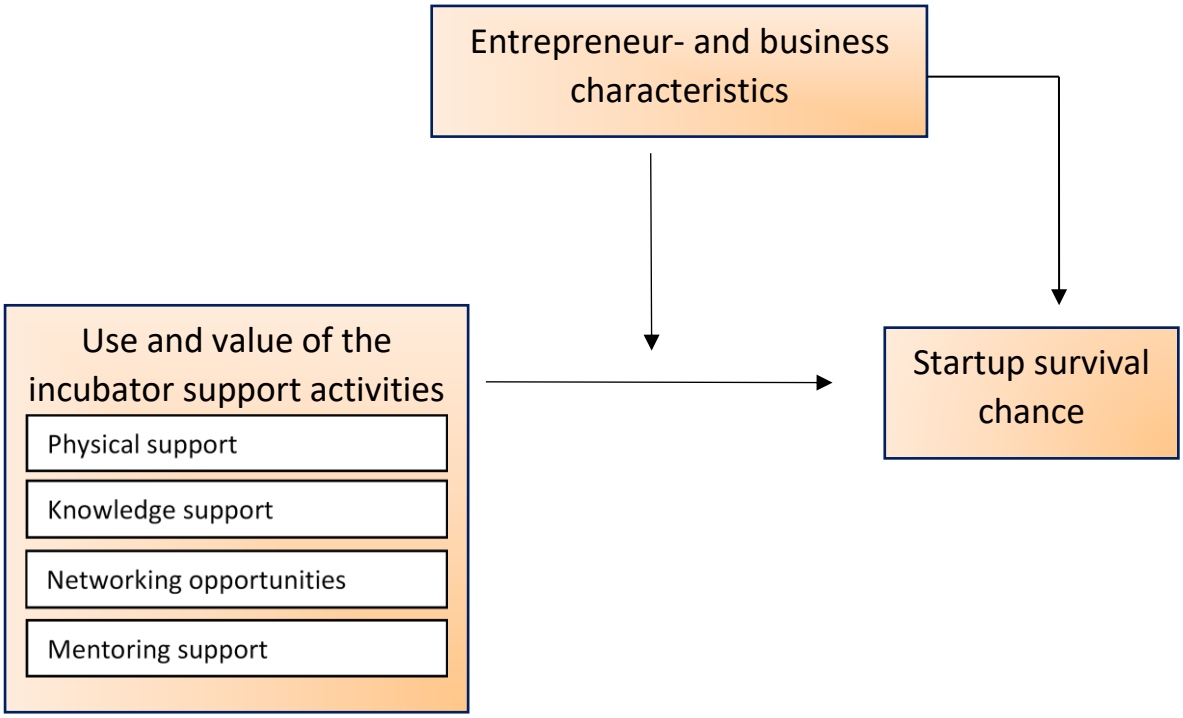
Policymakers that seek to foster new business creation focus specifically on (high)tech startups (Schwartz, 2013), because of their higher growth potential (Cockburn & Wagner, 2007; Motohashi, 2005). Mas-Verdú et al. (2004) underline the importance of technology, but emphasizes the combination with business size. In addition, the survival chances of R&D spinoffs and innovative startups seem higher (Dushnitsky & Lenox, 2005). In the "*innovator's dilemma"*, Christensen (1997) explains that new firms gain competitive advantages since they can adapt radical or disruptive innovations far more easy than incumbent firms. However, where other new firms face difficulties in the liability of newness and in the liability of smallness, innovative startups may not only struggle with being new, but also with being different (Amason et al., 2006; Hyytinen et al., 2015). According to the rational investment behaviour theory (Hyytinen et al., 2015), investors will not invest easily in high-risk businesses. Investors expect returns for their investments and innovative startups are associated with uncertain paybacks (Hyytinen et al., 2015).

Furthermore, investments and funding increase the startup survival possibilities, because firms with enough financial resources are less vulnerable than firms without. Financial capital can arise from people in the social network, from bank loans or from venture capitalists (VC) (Huyhebaert, 2000; Van Gelderen et al., 2005).

2.4 CONCEPTUAL MODEL

The theoretical framework lead to the conceptual model illustrated in figure 2.1. The conceptual model gives an overview of the related research concepts.

Figure 2.1: Conceptual Model



The conceptual model represents the direct link between the incubator support activities and the startup survival chance. Following the theory, it is assumable that all four types of incubator support increase the startup survival chance, depending on the participation of the entrepreneurs to the activities and the quality of the support. The value of the support is considered as the perceived value of the incubator activities among tenants. Furthermore, the theory describes that startup survival can be predicted by specific entrepreneur- and business characteristics. This is shown in the model by the direct relation between individual characteristics and the startup survival chance. Because of the wide range of studies on the determinants of startup survival that focus on entrepreneur- and business characteristics, it is obvious that tenants with different entrepreneur- or business characteristics can also influence the participation in and perceived value of the incubator support activities. Although this “mediation” effect was not directly clear from the theory, this study assumes that the impact of the incubator support may differ among different type of tenants.

2.4.1 Hypotheses

The theoretical framework and the conceptual model led to the following hypotheses.

H1: Startups run by entrepreneurs who use the incubator's physical support are more likely to survive than startups that do not use the psychical support, controlled for other individual- and firm characteristics.

H2: Startups run by entrepreneurs who use the knowledge support are more likely to survive than startups that do not use the knowledge support, controlled for other individual- and firm characteristics.

H3: Startups run by entrepreneurs that use the networking opportunities are more likely to survive than startups that do not use the networking opportunities, controlled for other individual- and firm characteristics.

H4: Startups from by entrepreneurs that use the mentoring support are more likely to survive than startups that do not use the mentoring support, controlled for other individual- and firm characteristics.

H5: Tenants that perceive the incubator activities as high value for their startup are more likely to survive than startups that perceive the incubator support as low value for their startup.

Next chapter describes how the hypotheses were empirically tested in order to answer the research questions of the study.

3 METHODOLOGY

The objective of the study was to examine the use and perceived value of the Orange Grove support services of tenants, and its influence on the startup survival chance. This led to the following research question:

"To what extent does Orange Grove influence the startup survival chance of its tenants?"

The study was divided in four sub-questions for answering the main research question above. The following sub-questions were created from the conceptual model:

1. *Which incubator activities are related to the startup survival chance?*
2. *What is the perceived value of the incubator activities according to the entrepreneurs, and are these values related to the startup survival chance?*
3. *Which individual- and business characteristics of the tenants relate to the startup survival chance?*
4. *To what extent does the relation between the incubator activities and startup survival hold when controlling for entrepreneur- and business characteristics?*

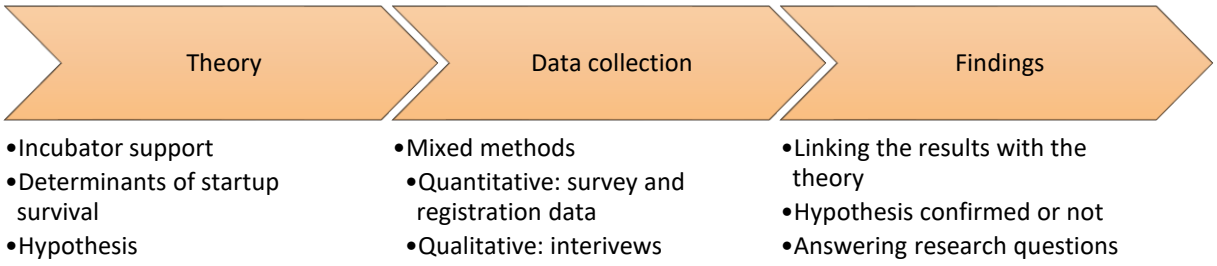
This chapter describes which methodological tools were used during the empirical research, in order to answer the research questions.

3.1 RESEARCH DESIGN

A research design is a framework of specific techniques that defines the subject of the study. This study is characterized as a case study, because it entails an intensive analysis of one single startup incubator (Bryman, 2012, p.61). Most case studies are associated with qualitative research methods, such as observations and interviews. Yet, Bryman (2012, p. 61) describes that also quantitative methods are common used in case studies. Critics of the case study design argue that no generalization is possible and that the external validity is low (Bryman, 2012, p. 64). Nonetheless, the aim of this study was to examine the impact of a single incubator rather than creating a general theory.

Bryman (2012, p. 24) describes two research approaches for linking theory to empirical data: deduction and induction. Deduction means that the researcher deduces hypotheses based on scientific literature and translates them into measurable concepts in the operationalization. Afterwards, the empirical research starts and the findings show if the hypotheses cannot be rejected. In this way, the theory is tested by the reality. In contrast, inductive research starts with the empirical researches and creates a theory based on the findings (Bryman, 2012, p. 25). In this study on incubation effect on firm survival, a deductive approach was used. The theoretical framework made clear that specific factors can influence the startup survival chance. A conceptual model was created from the theory and hypothesis were conducted. During the empirical research the hypotheses were tested by the empirical data from Orange Grove. The figure below illustrates the deductive approach of this study.

Figure 3.1: Deductive approach (Bryman, 2012)



3.1.1 Mixed methods

Figure 3.2 shows that the empirical study concerns a mixed methods approach, which combines quantitative and qualitative methods for giving a complete overview of the reality (Bryman, 2012, p. 631). Quantitative methods are commonly used when looking for statistical correlations between variables and for testing hypotheses. However, the underlying interpretations may differ among the respondents and are hard to examine with quantitative approaches. In contrast, qualitative approaches suit to studies on opinions, feelings or experiences. Moreover, qualitative research can give a clearer insight in unexpected correlations from quantitative studies. The “triangulation” form of mixed methods refers to the insight that quantitative and qualitative findings corroborate each other. In this view, the “deeper” qualitative findings help to explain the statistical relations that were found by qualitative research (Bryman, 2006).

Initially, the quantitative approach of this study refers to all the research questions that seek correlations between variables. Surveys were conducted among OG tenants for gaining information about the extent of participation to incubator activities, the entrepreneur- and business characteristics and the value that they give to the incubator support. These findings were used for testing the hypotheses from paragraph 4.2.1. Although a comprehensive set of data emerged from the survey, the underlying motivations of the participation and the perceived value did not become clear from the quantitative research. Moreover, it is important to note that although the survey respondents did answered a question about the perceived value of the incubator activities, the extent of participation can differ. This can cause skewness in the overview, because some respondents only participated once in an activity, for example in case of the one-on-ones. These survey respondents only ranked the perceived value of this specific one-on-one, while others gave an average ranking of all the one-on-ones in which they participated.

For this reason, the qualitative research methods focus more on these contextual assets. Semi-structured interviews were conducted with OG (ex) tenants, to create a more explorative study. All interviews started with the question why the respondent decided to become entrepreneur. Because of this broad and open question respondents could answer in their own words, which led to coverage of background information for all cases. This information helped the researcher during the analysis to compare the outcomes with respondents from the same or different backgrounds. Moreover, this first question worked out as a “warming up” to fluently start the conversation. It was striking all respondents were immediately willing to talk during the interview, even though English was not their native language. All interviews were roughly guided by the same interview schedule: a list of carefully worded questions, which is provided in appendix B2. The interview schedule is an effective way to compare the answers of different respondents during the analysis). Predetermined questions can be kept as a backup when it is difficult to direct the conversation towards the next question (Hay, 2010, p. 104).

To conclude, the mix of quantitative and qualitative methods in this study lead to a triangulation approach where the survey outcomes are compared with the outcomes of the semi-structured interviews. Combining the findings of both approaches sheds clearer light on the reality and increases the validity of the research.

3.2 QUANTITATIVE METHODS: THE STARTUP SURVIVAL CHANCE

Selecting appropriate indicators to measure the value of business incubators is a controversial issue (Vanderstraeten et al., 2012). In this study, the *startup survival chance* appears as dependent variable and refers to the definition of Gonzalez (2017) and Hackett and Dilts (2004): *"The new business has been able to act free and viable in the market and has achieved long term sustainability".*

Orange Grove keeps a registration database in which the startups are divided into four status groups: graduated, terminated, paused and active in OG. All startups that have terminated the OG membership with the motivation of being able to sustain in the market, were already marked as *graduated* in the registration database. This "graduation" term is also used in comparable studies, for startups that terminated their incubator membership with the reason of being able to sustain in the market and not needing the incubator support anymore (Bandera & Tomas, 2017; Fukugawa, 2017; Xiao & North, 2017). The startups that quit the OG membership because they terminated the business activities were marked as *terminated*. Furthermore, the startups that quit the OG membership because of pausing the startup business activities were marked as *paused*. The last status group consist of the startups that are currently tenant of OG. They were marked as *active in OG*. Since the establishment of Orange Grove in September 2013, eight application rounds for new tenants were organized until September 2017. Table 3.2 gives an overview about the number of entrants in each application rounds and their statuses according to the Orange Grove registration database.

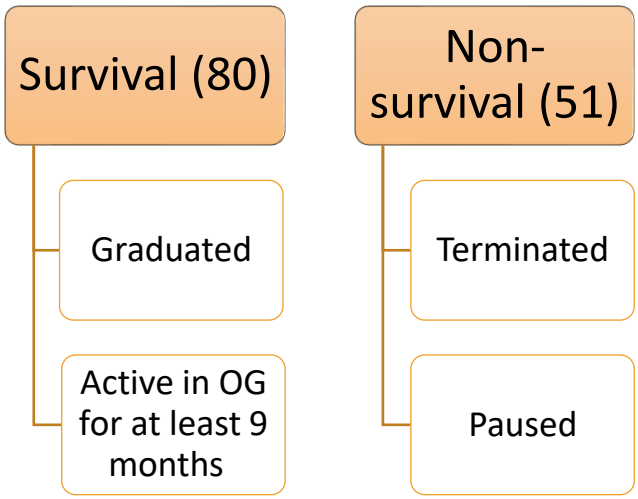
Table 3.2: Status of startups per application round

Month and year	September 2013	November 2013	March 2014	July 2014	November 2014	February 2015	October 2015	December 2016	Total
Application round	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Active in OG	0	1	1	0	0	6	9	19	36
Graduated	5	12	7	2	6	9	0	3	44
Paused startup	5	8	1	1	6	6	8	1	36
Terminated startup	1	2	1	1	5	4	1	1	15
Total	11	23	10	4	17	25	18	23	131

3.2.1 The dependent variable

Startup survival is the dependents variable of this study. In first instance, all OG (ex) startups that have been able to sustain in the market for "long term" should be selected for the survival group. However, due to the young age of Orange Grove, less (ex) tenants exist for at least three years. For this reason, the *survival* group contains the startups that are currently sustaining: the graduates and the startups that are OG tenant for at least nine months, as is shown in figure 3.3. The time period of nine months was chosen because this includes all tenants that joined OG up until the 8th application round. Table 3.2 showed that two startups from the 8th application round of new tenants terminated the OG membership. This study therefore assumes that all startups that became member up until the 8th application round had the chance to terminate the incubator membership for survival or non-survival reasons. The second group is recognized as *non-survival* and consist of all startups that were not able to sustain after their OG membership: the paused and terminated startups. The second group is recognized as *non-survival* and consist of all startups that were not able to sustain: the paused and terminated startups.

Figure 3.3: Division of groups: survival and non-survival



The dependent variable concerns a dummy variable, because it consists of two categories: survival (1) and non-survival (0). Table 3.4 presents that the dummy takes on the value of 1 if the startup was graduated from OG or have been tenant for at least 9 months, and is 0 otherwise. Startups that became member after September 2017 were not included, because the data-collection of the study took place in September 2017.

Table 3.4: Non-survival as dummy variable (0/1)

	Survival (1)	Non-survival (0)	Total
Current OG tenant for at least 9 months	N = 36	N = 0	36
Graduated	N = 44	N = 0	44
Terminated	N = 0	N = 15	15
Paused	N = 0	N = 36	36
Total	80	51	131

In order to answer the research questions, a division was made between independent key variables (the incubator support services) and independent control variables (the entrepreneur- and business characteristics). Next paragraph describes which methods were used for collecting this required data.

3.2.2 The data collection

Two databases were used for the quantitative research: the *OG registration data* and the *survey data*. The Orange Grove registration data covers characteristics of all entrepreneurs that have ever been member (N=151), such as gender, age and the business sector. Before the registration data could be used, some updates were made.

1. The doubles were removed, because few startups or entrepreneurs were double presented.
2. All team members and co-founders were removed, because otherwise it may look that there were more startups than there really are. Only the founder that signed the contract with OG remained in the registration data, this was marked in the datafile. When it was not clear which founder signed the OG contract, the first co-founder on alphabetical order remained in the database.

After these two updates, a research population of 131 tenants remained. Only demographic characteristics of the entrepreneur and business were included in the registration. A survey was conducted to complement the data that was needed to test the hypotheses, such as the extent of participation at the incubator activities. Table 3.5, below, shows which information was missing in the registration data and which data emerged from the survey. The variables are defined and operationalized in paragraph 3.4.

Table 3.5: Information included in the registration data and in the survey data

Variables	Registration data (N = 131)	Survey data (N = 53)
Gender	X	X
Age	X	X
Education	X	X
Previous experience		X
Role models		X
Entrepreneurial motivation		X
Business age		X
Business size		X
Industrial sector	X	X
Technology startup	X	X
Financial resources		X
Membership duration	X	X

The survey was developed in late August 2017. Initially, a test survey was conducted among two current tenants and one ex-tenant. The test respondents were asked to give feedback on the questions that were not clear enough. The two current tenants gave their feedback face-to-face, while the ex-tenant sent his suggestions by e-mail. The feedback led to improvements in as well the survey as in the online system to fill in the answers. Main points were the way of questioning and not having enough space to write the few open questions.

Afterwards, the official survey was put in an online server and an e-mail was send to the 131 entrepreneurs, in corporation with the Dutch Ambassador. Two reminders were sent in the first and second week of September 2017. The accessibility of the online server was closed after three weeks and the results were available in the beginning of October 2017. It was assumed that the name of the Ambassador could help in increasing the number of respondents, since it seemed an official invitation to take part at the questionnaire. The letter explained that information would be used for a research on the *"effectiveness"* of the incubator. The letter also explained that the Stavros Niarchos Foundation (lead donor of OG) had asked for an impact report of Orange Grove, in order to decide about their sponsorship.

For this reason, also questions included about how much revenue they made with their startup, but these questions were not obliged to fill out. A minor disadvantage was that the Embassy desired to conduct the surveys anonymously, which hardened the selection of the interview respondents from the prominent survey outcomes. The interviews were conducted after the survey, in order to get insight in the underlying reasons of the outcomes. Yet, respondents had the chance to write their e-mail address in the end of the survey if they were interested in participating in the interviews and in receiving the final conclusions of the study.

3.2.3 Respons and representativeness

From the 131 startups that were ever member of OG, 53 entrepreneurs completed the survey, which is a response rate of 40%. In order to draw conclusions on the survey sample, it had to be clear how well the sample reflects the population and how much the outcomes differ from the reality. According to Bryman (2012, p. 187) a representative sample reflects the population accurately, the survey should occur as micro-sample for the whole population: the 131 tenants. Figure 3.7 shows that survival rate of the OG population (61%) is nearly the same as the survival rate of the survey respondents (60%). The survey seems a representative sample for the population when looking at the division of survival and non-survival.

Figure 3.6: Division of survival and non-survival in both databases, in %

The representativeness can be checked by executing a chi-square goodness-of-fit test. The test determines if the observed distribution of the sample meets the expected distribution of the population (Vocht, 2012). The results indicate that the sample proportions were not significant (p = 0,871) and is therefore consistent with the distribution of the population.

More tests were executed on the factors that were available in both the registration and in the survey data (*gender, age, education, length of OG membership, business age, industrial sector and technology startup*), see table 3.6. Except for business age, the significance level of all factors was higher than 0.05, which means that these characteristics significantly differ from the population. In other words, the variables of the survey sample has a good fit with the OG population and, thus, the statistical outcomes on these characteristics are representative for the population of tenants of OG. Since the significance level of business age was less than 0.05, the business age of the sample did not have a good fit with the population. For this reason, statistical tests with business age can only be conducted from the registration data which consist of the whole population.

3.2.4 Pearson chi-square test

All variables were categorical - dichotomous, nominal and weak ordinal, so the Pearson chi-square test was most suitable test for rejecting, or failing to reject, the hypotheses. The Pearson chi-square test (χ^2) measures a significant association between variables in contingency tables (Vocht, 2012). The registration- and the survey data were exported to two separate SPSS datasets. Both datasets were not immediately ready for use, because multiple cases needed to be transformed and grouped together. These transformations were necessary because of the assumptions of the chi-square test (Vocht, 2012):

1. Only categorical variables.
2. No more than 20% of the expected counts are less than 5.

Especially the second assumption called for transforming and re-categorizing the variables. Multiple variables were grouped together because of having too many expected counts less than 5.

Possible relations between being involved in and the valuation of every incubator activity and survival were measured by the Pearson chi-square test. If the significant level was lower than 0.05, a significant association between the variables was found. The strength of the association was measured by the Cramers' V or Phi. In addition, the Pearson chi-square tests were executed for finding direct- and moderator effects of the individual characteristics.

It is important to note that association and causality are not the same and that the association between two variables could concern a reversed causality or it could be co-variated by another variable. Generally, this would be examined by executing a logistic regression analysis. However, the number of cases of the sample is too low (N=53) to execute a logistic regression. For this reason, the moderator effect was tested by generating three-way contingency tables, that split the tables into sub-categories, and executing the Pearson chi and Fisher's exact for finding (partial) statistical significant associations.

3.3 OPERATIONALIZATION: KEY VARIABLES

The operationalization clarifies how the independent key- and control variables were translated into measurable concepts. Because the emphasis of the study is on the impact of the Orange Grove support, the incubator's support services are characterized as key variables. All references to the survey questions are market with Q followed by the number of the question.

Orange Grove provides different business support services that were divided in the following four categories.

1. Physical infrastructure
2. Education program
3. Mentor program
4. Networking

The survey respondents were asked how many times they participated at the incubator's activities and how they rate the value of every service for their startup, with a Likert Scale ranging from terrible to excellent. In the majority of the cases, the survey answer options were too broad. This led to grouping some categories together in order to conduct the Pearson chi-square test. All original and grouped tables are presented in Appendix A.

3.3.1 Physical support

The physical support contains the working spaces of Orange Grove: OG1 and OG2. OG1 is the main co-working-space, available from 7.00 A.M. to 23.59 P.M for every tenant. The space is equipped with

tables and couches, a kitchen, a bathroom, closed meeting rooms and a stage where the presentations are given. All furniture in the space is movable which leads to a different décor every week.

The use of the physical infrastructure was measured by the hours that the respondents spend working on the startup per week in Orange Grove (Q23) divided by total sum of working hours they hours per week (Q22). This, resulted in a *rate (%) of hours worked in OG per week*. The answer options of both Q22 and Q23 were divided in five categories: "less than 10 hours, 10-20 hours, 21-30 hours, 31-40 hours and more than 40 hours". For making the calculation of the working rate in OG, the medians of the categories were taken (i.e. the median of "31-40" is 35,5). For the last category "more than 40 hours" a median of 45 was taken. All medians of the working hours spend per week in OG were divided by the medians of the total working hours per week. The outcomes were grouped into two categories: a *low (≤ 0.5) and a high (> 0.5) OG working rate*. Box 3.7 gives an example to give an accurate explanation about the calculation.

Box 3.7: Calculation of the rate of hours worked in OG per week

Respondent A works in total 30-40 hours per week on his startup. From these hours, he works 10-20 hours per week in the OG co-working space. The following calculation was made: 15 (median of hours worked from OG) / 35 (median of total hours per week) = 0.43. It is assumed that respondent A has an OG working rate of 43%, which is defined as low since it is less than half of his working time.

Respondent B works in total more than 40 hours on her startup. From these hours, she works 31-40 hours per week in the OG co-working space. The following calculation was made: 45 (median of total hours from OG) / 35 (median of total hours per week) = 0.78. It is assumed that respondent B has an OG working rate of 78%, which is defined as high since it is higher than half of her working time.

3.3.2 Knowledge support

The education program consist of an introduction bootcamp and the weekly seminars or workshops. Every week, guest speakers are invited to speak about their experiences and share their knowledge with the entrepreneurs. The table below gives an example from the event agenda of two random weeks in March 2017.

Table 3.8: Example of the agenda of two weeks in March (Orange Grove, 2017)

Date	Month	Type of event	Name of event	Institution
6	March	Networking	Working Digital in Athens	Family Goes Out
9	March	Educational	Funding by ESPA programms	VKPREMIUM Business Consultants LTD
10	March	Educational	Rails Girls preparation	Rails Girls
11	March	Educational	Rails Girls	Rails Girls
16	March	Educational	Knowledge sharing	Delft University
20	March	Networking	Visit Mr. Papadimitriou	Ministry of Development and Growth

Orange Grove organizes two types of introduction bootcamps: the general bootcamp and the agro bootcamp. Both bootcamps are organized for all new entrepreneurs after every application round for new startups. The agro bootcamp was only organized once, because during application round 4 only startups from the agricultural sector were selected. The general bootcamps are organized by the TU Delft or the University of Amsterdam and the agricultural sector was organized by the University of Wageningen. Not all entrepreneurs took part at the introduction bootcamp, since it was not obliged to participate. For this reason, the survey respondents were asked if they participated in the introduction bootcamp (Q27). This categorization, based on *whether participated in the introduction bootcamp or not* was used during the statistical analysis.

Regarding the seminars, it was asked how many times the respondents participated at seminars during their incubation period (Q24). The answer options ranged from "never, 1-3 times, 4-6 times, 7-9 times or 10 or more times". Apparently, all of the respondents participated in at least one seminar. The respondents were grouped into two groups in order to fulfill the second assumption of the chi-square test, that every case should have at least 5 counts. The respondents that filled out "1-3 times, 4-6 times and 7-9 times" were merged into "less than 10 times". This resulted in the final two groups: *participated less than 10 times in seminars and participated 10 or more times in seminars*. Furthermore, the perceived value of the seminars was asked (Q38), ranging from excellent to terrible. Again, two groups were created: *good-excellent value and terrible-average value*. The respondents that perceived the value of the seminars to their startup as good or excellent were grouped together and the respondents that perceived the value as terrible to average were merged. Table 3.9 gives an overview of the incubator activities that apply to the knowledge support, the survey questions and how the survey answers were grouped together in order to conduct the Pearson chi-square test.

Table 3.9: Operationalization knowledge support

Incubator activity	Survey question	Categorization for chi-square test
Participation at seminars	Q24	<10 times (0); ≥10 times (1)
Ranking of seminars	Q38	Terrible-Average (0); Good-Excellent (1)
Participation at introduction bootcamp	Q27	No (0); Yes (1)
Ranking introduction bootcamp	Q38	Terrible-Average (0); Good-Excellent (1)

3.3.3 Networking possibilities

According to the social capital theory, having network relations is one of the most important factors for startup survival (Aerts et al., 2007; Hansen et al., 2000; Peter et al., 2004; Rothschild &Darr, 2005). Within Orange Grove, the entrepreneurs have the possibility to meet new people for their business during events. They can network after the seminars but also during special organized networking events with investors, multinationals, other entrepreneurs and the public sector. Image 3.10 shows one of the networking events at the Ambassador's residence.

For measuring the impact of the networking possibilities of Orange Grove, the respondents were asked how many people they have met via Orange Grove that were important for their startup. The different network contacts were divided into *investors (1), the private sector (2), the Greek public sector (3) and the foreign public sector (4)* (Q39). The question was formulated as follows: *"How many of the contacts that you have met via Orange Grove were important for your startup?"*. It was opted to add "important for your startup", because this gives a clearer insight in the contribution of the networking possibilities than only asking if they met new contacts via OG. The respondents could give the following answers: "0, 1-5, 6-10, 11-15, 16-20, 21-25, >25". Apparently, these answers were too broad, because became clear a big part of the respondents did not find any new contacts via OG.

Again, the answer categories were grouped into two groups for conducting the chi-square tests. The final groups are shown in table 3.10. The respondents that did not find investors, contacts from the private sectors, the Greek public sector and the foreign public sector were grouped together and the respondents that did find these contacts via OG were grouped together. Table 3.10 below gives an overview of the final categorization.

Table 3.10: Operationalization networking possibilities

Important contacts met via OG	Survey question	Categorization for chi-square test
Investors	Q39	No (0); Yes (1)
Private sector	Q39	No (0); Yes (1)
Greek public sector	Q39	No (0); Yes (1)
Foreign public sector	Q39	No (0); Yes (1)

Furthermore, despite the co-working space and the free coffee and beers, the entrepreneurial climate within the incubator could lead to more contact between the entrepreneurs. The OG management even organizes community events where tenant entrepreneurs can meet each other in a different way than the business related activities. Examples are the Pizza Friday's, yoga courses within OG, Dutch Kingsday and celebrations of graduated startups. The community events are intended to increase the community atmosphere among the OG tenants and can also lead to meeting new interesting contacts for the startups. Nevertheless, it is important to bear in mind that the community events were not organized before 2017. Thus, only the entrepreneurs that have been member in 2017 had the chance to participate in the community events. This obviously gives bias in the results when comparing survival rate between all the respondents. This led to the decision to leave the participation to community events out of the statistical research. After all, the networking between the OG entrepreneurs was already asked in Q39: *"Did you meet other entrepreneurs via OG that were important for your startup?"*.

3.3.4 Mentoring support

All coaching services of the incubator were categorized in the mentoring support of Orange Grove. These services are: the personal mentor, the Entrepreneur In Residence (EIR) and the one-on-ones with professionals from different business fields. From the 53 respondents, 49 (ex) tenants have had a personal mentor. Since "having" a mentor does not mean that they also meet their mentor, the survey asked how many mentor meetings they had (Q31).

The respondents were divided into the *entrepreneurs that met their personal mentor less than 10 times* and *entrepreneurs that met their personal mentor 10 or more times*. Despite having a personal mentor, tenants can meet the Entrepreneur In Residence (EIR) to gain personal advice (Q33). Since 2015. The EIR is a professional in the entrepreneurial field that is available in OG every day for a period of time, at least three months. Currently, two EIR's are active in the incubator. In contrast to the previous EIR's, they are available one full week a month instead of fulltime. Startups can ask them all questions they want. However, in the past there was not always an EIR available. The respondents were grouped into entrepreneurs that have had meetings with the EIR and entrepreneurs that did not. The last service that is recognized as mentoring support are the *one-on-ones*. The finding that respondents differ a lot in the number of one-on-one meetings, lead to a grouping of respondents that did participate and respondents that did not. This, in order to have enough cases for the chi-square test. Additionally, the perceived value of the personal mentor, the EIR and the one-on-ones was asked (Q38). Table 3.11, below, shows an overview of the mentoring support and the way that the services are measured.

Table 3.11: Operationalization mentoring possibilities

Incubator activity	Survey question	Categorization for chi-square test
Number of meetings with mentor	Q31	<10 times (0); ≥10 times (1)
Ranking of mentor program	138	Terrible-Average (0); Good-Excellent (1)
Having met with the EIR	133	No (0); Yes (1)
Ranking of EIR	138	Terrible-Average (0); Good-Excellent (1)
Participation at one-on-ones	Q29	No (0); Yes (1)
Ranking of one-on-ones	Q38	Terrible-Average (0); Good-Excellent (1)

3.4 OPERATIONALIZATION OF CONTROL VARIABLES

3.4.1 Entrepreneur characteristics

The literature demonstrated that the personal characteristics of age, education and previous experience could influence the startup survival chance. Gender was added because its influence on startup survival was unclear. The data on gender, age and education level were derived from the registration data. The other human capital factors – experience and role models – and the startup motivation derived from the survey, because they were not included in the registration database.

The operationalization of *gender* does not need any further explanation since there are two genders: male and female. According to the literature, males are more likely to start a business. However, the relation between gender and startup survival is unclear. In regard to the *age* of the entrepreneurs, the study speaks of the age at the moment of entering OG. The respondents are divided in two age groups because far the majority was between 25 and 44 years old. The literature showed that young adults, in this study between *25-34 years old*, have the highest interest of starting a business, while businesses started by adults, in this study between *35-44 years old*, are most likely to survive (OECD, 2016; Cressy, 1996; Lent et al., 2000; Lussier, 1995). Furthermore, the *educational level* was divided into *less than bachelor*, *bachelor degree* and *a master degree*, although almost every entrepreneur has an university degree. Still, the division was made because Mengistae (2006) stated that every year of higher education increases the survival chance.

In addition, the survey questioned if the respondents participated in another startup before or parallel to the current one (Q7). If yes, the entrepreneurs gained entrepreneurial *experience* (1) and otherwise they did not (0). It was also asked if they have entrepreneurial friends or family that supported them to become entrepreneur (Q52). If yes, the entrepreneur has entrepreneurial *role models* (1), if not they have not (0). Another entrepreneur characteristic that was asked in the survey was the *motivation of becoming an entrepreneur*. The motivation was *necessity-driven* when respondents answered that they did not have another job opportunity, and was *opportunity-driven* when they choose to be entrepreneur (Q51). The literature made clear that startups from opportunity-driven entrepreneurs have more chance to survive than from necessity-driven entrepreneurs (Bosma & Sternberg, 2014; Block Sadner, 2009). The last entrepreneurial characteristic refers the number of *hours that entrepreneurs work on average per week* on their startup (Q22). The categories exist of l*ess than 40 hours* per week and *more than 40 hours* per week.

Table 3.12: Operationalization of entrepreneur characteristics

Entrepreneur characteristics	Survey question	Categorization for chi-square test
Gender	Q45	Male (0); Female (1)
Age	Q46	25-34 years (0); 35-44 years (1)
Educational level	Q48	Less than bachelor degree (1); at least bachelor degree (2); at least a master degree (3)
Entrepreneurial experience	Q7	No (0); Yes (1)
Entrepreneurial role models	Q52	No (0); Yes (1)
Motivation of becoming entrepreneur	Q51	Necessity-driven (0); Opportunity-driven (1)
Hours working on business per week	Q22	≤40 (0); >40 (1)

3.4.2 Business characteristics

The theoretical framework point out that business age, industrial sector, technology and the Orange Grove membership duration. The other characteristics, business size and financial resources, were available in the survey data.

The theory emphasized the influence of business age to the survival chance of new firms (Stinchcombe, 1965; Shane, 2010). Since it is assumed that all startups within this study are less than five years old, they can be considered as young and vulnerable. The moment of new business creation differs in the literature. Some studies speak about the moment of when entrepreneurs start to think about the business idea, while others speak about the official application to the chamber of commerce. For measuring the *business age*, this study takes the moment of becoming a member at Orange Grove as starting point, because all startups applied when they were in their early business stage. Table 3.13 presents how many startups from which application round apply to survival and non-survival. Because some cells have less counts than 5, a categorization is made on *respondents that started in OG in 2013, 2014, 2015 and 2016*. The application rounds 1 and two formed "2013", application rounds 3, 4 and 5 were categorized in "2014", "2015" exists of application round 6 and 7 and the 8th application rounds forms 2016. Paragraph 3.2.3 showed that the business age of the survey sample was not representative for the population. This means that statistical tests on business age can only be conducted with the registration database. This data does not contain the participation in incubator activities, so only a relationship between business age and startup survival could be tested. In other words, when controlling for individual characteristics the business age was left out.

Table 3.13: Status of startups per application round, in %

Started in	September 2013	November 2013	March 2014	July 2014	November 2014	February 2015	October 2015	December 2016	Total
Application round	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Survival	45	56	80	50	35	60	50	96	61
Non-survival	55	44	20	50	65	40	50	4	39
Total	100	100	100	100	100	100	100	100	100
Total N	11	23	10	4	17	25	18	23	131

Following the "liability of smallness", the size of the new firm can matter in predicting the survival chance. *Business size* was measured as the number of employees at moment of starting at OG and can influence the startup survival chance (Almeida et al., 2003; Astebro & Berhnhardt, 2003; Audretsch et al., 1997; Hannan & Freeman, 1977). The business size of the OG startups differ between *alone, 2 or 3 team members* and *4 or 5 team members* (Q11). Furthermore, the sector of the startup can influence the likelihood of survival in different ways, such as growth rates and competition in the specific sector. Furthermore, the Greek dept crisis plays still a role in the Greek economic sectors. Figure 1.1 already showed the GDP growth (in %) and that the GDP growth rate was slightly getting better after 2013, when OG started. The most shocking negative growth rates occurred between 2009 and 2013. In Greece, it were mainly the manufacturing and industrial sectors that were hit the hardest (Eurostat, 2018).

Table 3.14: Number of startups per business sector

Business sector	Number of startups
Agro food	17
Culture, health and sports	14
Fashion	10
Marketing and publishing	6
Online business	16
Social entrepreneurship	19
Tourism	17
Other	32
Total	131

The OG registration file categorized the startups into 14 sectors (*agro food, culture, e-commerce, e-learning, engineering & design, event management, fashion, marketing, publishing, social community, social entrepreneurship, tourism, transport & logistics and other*). Yet, it was attempted to merge the sectors into less categories in order to conduct the chi-square tests. The selection of the final *eight business sectors* was made by grouping related sectors together, for example e-learning and e-commerce were grouped into "online business". The final eight sectors are presented in table 3.14. The survival rates from the original categorization is presented in appendix A3.3.

Despite the business sector, the theory indicated that *technology* startups are more likely to grow (Cockburn & Wagner, 2007; Motohashi, 2005; Mas-Verdú et al., 2004). Hence, this study examined if the technology startups are also more likely to survive than non-tech startups. The dummy variable consist of *technology business (1) and non-technology business (0)*.

The last business characteristic measured in this study, applies to the financial resources of the entrepreneur. Because of the young age of the startups, some are not yet making profit. The most likely financial resource that is accessible for the OG entrepreneurs would be external funding. The respondents answered if their startup has been able to receive *funding* (Q18) or not. Again, it concerns a dummy variable divided in *yes (1) and no (0)*.

Table 3.15: Operationalization business characteristics

Business characteristics	Survey question	Categorization for chi-square test
Business age (started in OG)	Q1	2013 (1); 2014 (2); 2015 (3); 2016 (4)
Business size (number of team members started in OG)	Q11	Alone (1); 2-3 team members (2); 4-5 team members (3)
Business sector	Q14	Agro food (1); Culture, health & sports (2); Fashion (3); Marketing & publishing (4); Online business (5); Social entrepreneurship (6); Tourism (7); Other (8)
Technology business	Q13	Non-technology startup (0); technology startup (1)
Funding	Q18	No (0); Yes (1)

3.5 QUALITATIVE METHODS

Echoing Bryman's mixed methods description, qualitative tools were used to complement the quantitative data (2012, p.635). The main reason why interviews were conducted was for answering sub-question 2: "*What is the perceived value of the incubator activities according to the entrepreneurs?*". Even though the survey already asked the respondents to rate the incubator activities on their perceived value (Q38), the semi-structured interviews made it possible to dig deeper in the opinions of the (ex) tenants by anticipating on the answers and asking more detailed questions.

3.5.1 Respondent selection

In the first instance, it was intended to choose interview respondents from the survey sample with different entrepreneur- and business characteristics. However, the survey was conducted anonymously due to procedures of the Embassy, so it was not known which entrepreneur filled out which specific survey. However, the majority of the entrepreneurs left their e-mail address and were tracked. The characteristics that were both in the registration data as in the survey (table 3.6) were compared to get clear which entrepreneur filled out which survey. Five criteria were leading in the respondent selection:

1. **Different industrial sectors**: the perceived value of the incubator support services may differ between sectors, for instance when there are more seminars in a specific industry.
2. **Different entrepreneurial characteristics**: the perceived value of the incubator may differ between personal characteristics. Entrepreneurs with different genders and age were chosen from the registration database.
3. **Different OG membership durations**: entrepreneurs who are member at Orange Grove for a longer time have more experience with the support services than entrepreneurs who are member for a shorter time. It was opted to interview entrepreneurs with both membership durations in order to see if there are differences between their perceived value of the incubator.
4. **Different startup statuses**: the perceived value of the incubator may differ between startups that are currently active in the incubator and startups that left. Furthermore, there may be differences between startups that left Orange Grove because they were able to sustain in the market and startups that left without being able to sustain in the market.
5. **Participated to the incubator activities**: the perceived value of incubator activities is only interesting when they participated. Although, the goal was the select entrepreneurs who participated a lot and entrepreneurs who participated less, because the ones who participated less could have a lower perceived value than the entrepreneurs who participate a lot.

The purpose was to get a balanced selection between the startup statuses (5 survival and 5 non-survival), but it was hard convincing (ex) tenants to participate. Some reactions were that they *"just couldn't make it, because of their own mistakes, Orange Grove has nothing to do with it"* or they did not have time for an interview. Moreover, it seemed that they had difficulties with being direct and honest and, thus, rather avoid it. Table 3.13 that the aim of getting a balanced selection in startup statuses was not reached. In total, 10 entrepreneurs were interviewed. Seven respondents are currently tenant, from which three are sustaining in the market (R1, R2, R6). Three entrepreneurs are still member of OG and not ready for the market yet (R3, R5, R9). R4 has launched the business and *"it is going well*", but R4 is not sure for the future. Two respondents terminated the membership because the businesses could sustain and they did not need the support services anymore (R7, R10). One startups terminated the Orange Grove membership without being able to sustain in the market (R8). As shown in the table below, the length of OG membership differs between the respondents, ranging from 5 months to more than two years.

Although the quantitative research only took the startups that have been member for at least 9 months into consideration, it was opted to also add a younger member in the interview selection (respondent 5). This, in order to find out if the perceived value of the incubator activities differ between entrepreneurs that have been member for different periods of time.

Table 3.16: Characteristics interview respondents

R	Sector	Gender/age	Length of OG membership	Status OG	Status
1	E-Commerce	Male/34	More than 2 years	Tenant	Survival
2	Tourism	Female/35	More than 2 years	Tenant	Survival
3	Event management	Male/29	1 year	Tenant	Survival
4	Health-care / Tourism	Female/32	More than 2 years	Tenant	Survival
5	Social Media	Male/27	5 months	Tenant	Survival
6	Tourism	Male/36	10 months	Tenant	Survival
7	Culture	Male/30	More than 2 years	Graduated	Survival
8	Healthcare	Male/32	1 year	Paused	Non-survival
9	Agro-food	Male/38	1 year	Tenant	Survival
10	Social entrepreneurship	Male/24	9 months	Graduated	Non-survival

3.5.2 The interviews

Interviewing was the most suitable tool for obtaining the perceived value about the incubator's activities. The interviews were conducted in December 2017 and January 2018.

The interviews were guided by an interview schedule, which is a list of carefully worded questions (Hay, 2010, p. 104). This format creates better comparisons between the answers of different respondents. The order of the questions was not the same for every interview, but the conversation was guided naturally towards the discussion topics. The predetermined questions were kept as a backup when it was difficult to direct the conversation towards the next question. In this way, the schedule ensured that all important issues were covered. The interview schedule list contained the following topics, see box 3.14. The topics are related to the subjects of the survey questions, although the interviews gained more contextual knowledge about the subjects. Furthermore, the emphasis of interviews was on the perceived value of the incubator support activities to their startup and suggestions for improving the incubator support.

Directly at the moment of asking the respondents for their participation in the interviews, it was asked if they agreed to record the answers and transcribing them. All respondents agreed, a fter explaining the purpose of the research. It was proposed to show them their own transcripts before using them for the thesis, but none of the respondents found this necessary. The respondents were told that their answers would be used as anonymously in the study (R1, R2, R3 etc.), but that it might occur that readers of the full transcripts could trace them back on the basis of their business characteristics. None of the respondents found this a problem. In fact, the majority clarified that they would even participate when it was not anonymous.

Box 3.17: Topic list semi-structured interviews

Personal characteristics	**Physical infrastructure**
Motivation of becoming entrepreneur Why starting the business? Previous experience?	How much working at Orange Grove? Perceived value of the space Entrepreneurial climate within the incubator? Suggestions regarding the space?
Knowledge support	**Networking possibilities**
How much participating at seminars? Participated at the bootcamp? Perceived value of the education program Suggestions?	Met networking relations via Orange Grove? Perceived value of the networking possibilities Suggestions?
Mentoring support	**General perceived value**
Having a mentor? Perceived value of mentor program Perceived value of the EIR Suggestions?	Most valuable support service for startup Least valuable support service for startup Suggestions?

3.5.3 Analysis methods

All respondents were recorded during the interviews and transcribed afterwards. The complete transcripts are available in Appendix D. The qualitative analysis consisted of three steps.

Step 1: Reading the transcripts and coding by using NVivo.
Step 2: Retrieving a coding structure: a consistent framework with all the answers sorted per code (Hay, 2010, p. 290).
Step 3: Comparing the coded frameworks to the transcripts.

Hay (2010) describes that coding in qualitative research is important for data reduction and organizing the results. There are different coding methods. This study follows the process of *analytical coding* that reflects a theme, because analytic codes dig deeper into the context (Hay, 2010, p. 285). This coding structure makes it comfortable to find the answers per sub-question. Too many codes lead to an unstructured overview, so all subjects of every incubator activity were grouped together. For example "*using the space"* and "*hours working in the space"* were grouped, because they fit both in the physical infrastructure support. Furthermore, the unimportant parts were removed. By comparing the coded frameworks to the full transcripts it was controlled that no important parts were missing. Hay (2010, p.291) describes that researches have to bear in mind that coding is an iterative process. The process of finding new codes and grouping more codes together can keep going on (Hay, 2010, p. 291). The coding process was finished when no new information per subject was found.

3.6 VALIDITY, RELIABILITY AND REPRESENTATIVENESS

According to Bryman (2012, p. 41) validity and reliability are the most important evaluation criteria of social research.

Validity means the extent to which the results are well-found and correspond with the reality. Validity can be distinguished in external validity and internal validity. *External validity* refers to the generalizability of the research into a broader context. Since thiscase-study was specified to one specific incubator, the external validity of the study is low. *Internal validity* refers to the quality of the methods that were used for the empirical research. The internal validity of this study is twofold. On the one hand, the combination of quantitative- and qualitative methods prevents biases, because most questions that were asked during the interviews were already asked in the survey. Hence, the interviews shed light on the underlying context behind the outcomes. On the other hand, the validity of the division of the dependent variable is discussable. Due to the relative young age of Orange Grove and the young age of the (ex) tenants, it was hard to make a valid distinction between survival and non-survival. The literature referred to survival when a startup is still active after at least three years. However, in this study the survival group existed of tenants that are active for at least nine months combined with the graduated startups. Especially the current tenants may cause a bias in the results, since it is not clear if they will leave Orange Grove as “graduated” or as “terminated”. This is an important factor when determining the internal validity of the study. Although, previous (ex) enants have proven that startups could graduate or terminate before nine months. For this reason, a minimum line was drawn on six months. Tenants that were less than six month tenant of OG, counted from September 2017 were therefore not included in the study. This, to improve the “weak” point in the internal validity of the study.

Internal validity also raises the question: can we be sure that the incubator services are related to the startup survival chance? And, is this a genuine causal relationship or produced by the control variables? This was examined by controlling the relation between the participation to incubator activities and survival, for individual characteristics

Furthermore, research must be *reliable* in order to check the results. Researchers should explain their research procedures in detail for making replication possible. According to Bryman (2012, p.41), quantitative studies are more reliable than qualitative studies. This means that the quantitative results in this mixed method research are more reliable than the qualitative results. However, the interviews were semi-structured and guided by an interview schedule. Therefore, when asking the same questions to the respondents, the same results should appear. All quantitative- and qualitative outcomes are presented carefully in Appendix A and B.

Boeije (2009) describes *representativeness* or external validity as the extent to which the results of a study can be generalized to other situations. Paragraph 3.2.2 already made clear that the survey sample (N=53) was representative for the Orange Grove population (N=131). However, the results are not generalizable for other entrepreneurs in other incubators. This study covers a case study and the representativeness of a single case is not representative for other cases (Bryman, 2012, p. 65). More incubators should be studied for increasing the external validity, although the results could apply for incubators with exactly the same support services. For these reasons, the study has a low external validity.

4 RESULTS

This chapter describes the results of the empirical research. The theoretical discussion showed that many factors could influence the startup survival chance. Startup incubators can foster the startup survival chance by providing business support services. The chapter is divided into five paragraphs. The paragraphs are not structured in order of the sub-questions, but along the four incubator support services: physical support, knowledge support, networking possibilities and mentoring support. This, in order to give a clearer insight in the contribution of each specific type of incubator support. In fact, the sub-question 1, 2 and 3 are grouped together in each paragraph. Box 4.1 gives an example.

Box 4.1: Structure of the results chapter

Research sub-questions:

1. Which incubator activities are related to the startup survival chance?
2. What is the perceived value of the incubator activities according to the entrepreneurs and are these related to the startup survival chance?
3. Which individual- and business characteristics of the tenants relate to the startup survival chance?
4. To what extent does the relation between the incubator activities and startup survival hold when controlling for entrepreneur- and business characteristics?

Structure of the results chapter

§ 4.1: To what extent does the **physical support** relate to the startup survival chance of the OG tenants? What is the perceived value of the physical support? And does the relation between the physical support hold when controlling for entrepreneur- and business characteristics?

§ 4.2: To what extent does the **knowledge support** relate to the startup survival chance of the OG tenants? What is the perceived value of the knowledge support? And does the relation between the knowledge support hold when controlling for entrepreneur- and business characteristics?

§ 4.3: To what extent do the **networking possibilities** relate to the startup survival chance of the OG tenants? What is the perceived value of the networking support? And does the relation between the networking support hold when controlling for entrepreneur- and business characteristics?

§ 4.4: To what extent does the **mentoring support** relate to the startup survival chance of the OG tenants? What is the perceived value of the mentoring support? And does the relation between the mentoring support hold when controlling for entrepreneur- and business characteristics?

§ 4.5: Which individual- and business characteristics of the tenants relate to the startup survival chance?

As shown above, the paragraphs on the incubator support activities (§ 4.1 - 4.4) are all structured in three sections. The first section of each paragraph describes whether correlations were found between the incubator support activity and the startup survival chance, by presenting the chi-square results. The second sections give insight in the perceived value of the specific activity according to the tenants, by presenting the rankings from the survey (Q38) and comparing the results of the interviews with each other. In the third section of each paragraph, the relation between the incubator activity and survival is controlled for the individual characteristics.

In fact, every results paragraph answers the first three sub-questions for every support service separately. For example, paragraph 4.1 describes if significant relations were found between the physical support activities and startup survival, the perceived value of the physical support according the entrepreneurs and if the relation holds when controlling for individual- and business characteristics. This gives a clearer overview of the outcomes per type of support. Paragraph 4.5 shortly describes the findings about the perceived value of Orange Grove to the startups in general, according to the (ex) tenants. The last paragraph of the results chapter (§ 4.6) describes the personal characteristics of the OG startup entrepreneurs and whether their individual characteristics are related with startup survival (sub-question 4). Three-way contingency tables were created and tested by the Pearson chi-square test and Fisher's Exact. Except for the physical support, because no Fisher's exact was possible.

4.1 INCUBATOR SERVICES AND STARTUP SURVIVAL: DOES PHYSICAL SUPPORT MATTER?

The physical support of incubators contains of all administrative tools that are required for startups, such as a working space, meeting facilities and internet connection (Peter et al., 2004; Wanklin, 2002). The sharing of resources can also thrive knowledge transfers and network relations between tenant startups (Bergek & Norman, 2008; Böringer, 2006), which may increase the startup survival chance. It was hypothesized that "*Startups from entrepreneurs who use the incubator's physical support are more likely to survive than startups that do not use the psychical support." (H1)*

4.1.1 Physical support and the startup survival chance

Table 4.2 shows that the majority of the respondents work more than 40 hours a week on their startup. The use of the physical support was examined by the rate of working hours that entrepreneurs in OG per week during their membership, presented in table 4.3. The rate of working hours was divided into low (spent less than 50% of the working time in OG) and high (spent more than 50% of the working time in OG). No significant relationship was found between the *rate of working hours spent in the co-working space* and *survival*.

Table 4.2: Hours worked on startup per week, in %

Hours	≤40	> 40	Total
Survival	46	72	60
Non-survival	54	28	40
Total	100	100	100
Total N	24	29	53

Table 4.3 Rate of working hours spent in OG, in %

Rate	**Low**	**High**	**Total**
Survival	59	62	60
Non-survival	41	39	40
Total	100	100	100
Total N	27	26	53

Tenants are not obliged to work from Orange Grove. It is assumable that the entrepreneurs that work from another place than Orange Grove, have access to comparable physical assets that are provided by Orange Grove. Explanations might be that tenants do not have their own office where they can store their business instruments, except from the few startups that hire an OG2 space. Actually, some entrepreneurs may rather work from another place because of specific assets that they need, for example a research laboratory.

The interviews point out that the daily space use is relatively low. The average density during daytime is estimated as less than ten startups a day. The respondents explained that it is sometimes more beneficial to not work from the incubator. The association between the rate of working hours spent in OG and startup survival could not be controlled for individual characteristics with a Fisher's Exact, since the rate was categorized in three groups. Also grouping the rates together to two groups of high and low did not make sense because the relation was not significant anymore.

However, interviews indicate that especially startups that require coding work tend to avoid the co-working space when they need to do focused work (R1, R6). Another reason to work from elsewhere is the internet connection, because the Wi-Fi connection in the co-working space is sometimes slow.

"The internet connection really has to become better in Orange Grove, because we have a lot of online communications and I also have to do a lot of online presentations only. I cannot risk a internet error, so in these cases I stay home." - R1

This may imply that technology or internet-related startups work less from OG than non-tech startups. Also, entrepreneurs who have business meetings or (Skype) calls tend to find another working place, even though OG contains of specially equipped meeting rooms (R2, R1, R2 & R4).

4.1.2 Perceived value of the physical support

Respondent 6 described that the space is was the reason for joining the incubator, since a lot of interesting people visit Orange Grove whom they should not have met otherwise:

"The publicity is good. These this things will never happen when we would be in an office. You have to be near where things happen." - R6

All interview respondents reacted positive regarding the co-working space: it is clean (R1), the movable furniture is modern (R1, R2 & R4), the space is open and lightning (R4) and the free coffee and beers create a welcoming atmosphere (R2, R3 & R5). After all, the working space adds organizational value to the entrepreneurs and working from Orange Grove is cheaper than renting an office in the city of Athens (R1, R8) and it saves time.

"Otherwise you need to spend a lot of money and time to get all the things that you need" - R9

All respondents - no matter from which business sector - emphasize that the internet connection is a point for improvement. It is striking that the "older" respondents, who have more experience with OG (e.g. R3; R7), are even more critical than the "younger" respondents (R5; R9). Another suggestion is the creation of a phone-call room or just an isolated meeting box. The current meeting room is too open on top and, thus, too noisy when having formal business meetings or making important phone- and Skype calls (R2). In contrast, the entrepreneurs who renting an OG2 office are very positive about all assets from the physical infrastructure (R5 & R6). Since they are able to divide their time between the more social co-working space and the closedOG2 offices, they do not face the concentration issues while for instance detailed coding, that R1 explains. According to the entrepreneurs that have more experience with OG (R2, R3, R4, R7), the entrepreneurial vibe within the space used to be better. Before, OG had less tenants and it was easier to hang out all together after work.

"This culture was really important for us. The community feeling, the being a part of a startup community." – R7

"The strength of the co-working space is the people that you can see and meet for sure."- R5

"For example [name] here gave me his business plan and it really helped me to develop mine" - R2

Entrepreneurs were making time for helping each other and it was easier to ask another startup for help. Although, none of the current tenants argue that the actual entrepreneurial climate is bad. Even more, all of them emphasize that the entrepreneurial climate is good due to the open working environment.

4.1.3 Sub-conclusion physical support

Hypothesis 1: "*Startups from entrepreneurs who use the incubator's physical support are more likely to survive than startups that do not use the psychical support, controlled for entrepreneur- and business characteristics."*

It was assumed that respondents that spent more than 50% of their weekly working time in the OG co-working space, were more likely to survive than startups that spent less than 50% of their weekly working time in the incubator. However, no significant association was found between the rate of working hours in OG and startup survival. This means that hypotheses 1 can be rejected on basis of the empirical findings. No evidence was found that using the physical support of OG increases the survival chance of the OG startups. From the interviews, it seems that respondents that have been tenant for more than two years, and thus have more OG experience than the other respondents, and the tech-startups are more critical towards the space and physical facilities than the respondents that have been member for shorter time. The constructive criticism mainly concerns improving the internet connection and selecting more serious entrepreneurs. After all, the perceived value of the working space and the entrepreneurial climate within the incubator's space is good.

4.2 INCUBATOR SERVICES AND STARTUP SURVIVAL: THE ROLE OF KNOWLEDGE SUPPORT

4.2.1 Knowledge support and the startup survival chance

All entrepreneurs that were ever member of Orange Grove have participated to at least one seminar. Table 4.4 shows that 21 of the 53 respondents participated less than 10 times to the seminars, while they were organized on average once or twice per week. It it can be assumed that the respondents of the "less than 10 times"-group participated (far) less than once in every two weeks in the seminars. With a p-value of 0.035 and an alpha of 0.05, a significant positive association was found between the *participation at seminars* and startup survival. Startups from entrepreneurs that participated ten times or more to the OG seminars were more likely to survive (57%) than startups from entrepreneurs who participated less than 10 times (43%), with 95% confidence.

Table 4.4: Participation seminars and survival, in %

Participated	1-9	≥ 10	Total
Survival	43	72	60
Non-survival	57	28	40
Total	100	100	100
Total N	21	32	53

X^2: 4.43; p: 0.04; Phi: 0,25

Furthermore, a significant association was found for the *introduction bootcamp* with an alpha of 0.1. Startups that participate to the introduction bootcamp are more likely to survive (69%) than startups that do participate to the bootcamp (44%), with 90% of confidence.

Table 4.5: Participation bootcamp and survival, in %

Participated	1-9	≥ 10	Total
Survival	69	44	60
Non-survival	31	56	40
Total	100	100	100
Total N	35	18	53

X^2: 2.82; p: 0.09 Phi: 0,23

4.2.2 Perceived value of the knowledge support

"The quality? Bad. You won't take anything from it." - R3

The perceived value of knowledge support was asked during both the survey and the interviews. Table 4.6 shows the outcomes of the survey, that far the majority of the respondents rated the seminars and bootcamp as good or excellent. It seems that the survival rates are higher for the respondents that gave positive ratings, however, no significant associations were found. This means that no evidence was found that the *perceived value of the knowledge support* activities are related with startup survival.

Table 4.6 Perceived value of seminars and bootcamp among the survey respondents, in %

Value	Terrible-Average	Good-Excellent	Total
Seminars			
Survival	50	67	60
Non-survival	50	33	40
Total	100	100	100
Total N	20	33	53
Bootcamp			
Survival	44	77	60
Non-survival	56	23	40
Total	100	100	100
Total N	9	26	35

Striking is that the interview respondents were less positive regarding the value of the seminars for their business than that could be assumed from the survey. Especially the entrepreneurs that have been member for longer than a year argued that quality of the seminars is not good enough (R1, R3, R4 and R7). Many presentations of guest speakers are too theoretic (R3), too basic (R1) and only valuable for entrepreneurs that are in the phase of creating an idea (R2, R3, R4). Striking is that most of the negative entrepreneurs are tenant for a longer time (R1, R2, R4, R6). Despite the content of the seminars, the participating entrepreneurs share their own business challenges and experiences that may lead to more networking (R1, R3, R6, R7, R9). It was proposed to open the knowledge events also for other entrepreneurs from the startup ecosystem, from outside OG. *"In this way we can also meet other startups that are useful for us." (R1).*

Although it relates more to the network opportunities from the incubator, the seminars could in this way improve the social capital of the entrepreneurs. This may double the effect on the startup survival chance, since human capital and social capital were already suggested to be important factors for new firm survival in the theoretical framework. Listening to each other's advice can help in overcoming own struggles and it will improve the community feeling (R3, R8).

"Questions from other startups will help. Your questions will be answered by questions of the other teams. Some things like starting an app or finding your first clients are common questions for everybody." - R7

As was found in the previous paragraph, the interviews underline the low attendance at seminars. Again, the "OG experienced" respondents suggest that practical seminars, such as presentation skills and workshops, will increase the number of participators (R3, R6 & R8).. A poll in which tenants can vote for specific subjects would be helpful in attracting more participators (R2, R3, R4, R9). Strikingly, respondents who are tenant for a less long time (R5; R9) came up with no or very few suggestions of improvement.

The opinions about the introduction bootcamp, however, are very positive. Some of the respondents did not know how to set up a business when they entered the incubator. The practical assignments during the bootcamp helped them with creating a business plan and strategy (R2, R4 & R7). For this matter, the knowledge from the guest speakers should become more practical.

4.2.3 Participation at seminars and survival, controlled for individual characteristics

When controlling for *gender*, table 4.7 shows that far the majority of the females participated 10 or more to times seminars (14 out of 18), while only half of the males participated ten or more times (18 out of 35). The relation between participation to seminars and survival is not statistically significant overall. However, with a Fisher's exact of 0.011 and an alpha of 0.05, a positive significant association remains for female respondents. It concerns a moderate to strong association (Phi: 0.67). In other words, amongst female respondents there is a relationship between participation to seminars and survival, with 95% of confidence. *Females* that participated 10 or more times to seminars, were more likely to survive (79%) than females that participated less (0%), with 95% of confidence. For males, no significant association was found.

Table 4.7: Seminars and survival, controlled for gender, in %

Gender	Participation seminars	1-9 times	≥ 10 times	Total
Female	**Survival**	0	79	61
	Non-Survival	100	21	39
	Total	100	100	100
	Total N	4	14	18

Females: X^2: 8.1, Fisher's exact: 0.01, Phi: 0.67

Furthermore, a partial association was found when controlling for *age*. The survival rate among young entrepreneurs (18-35) is clearly higher for the ones that participated 10 or more times to seminars (74%), in comparison with the young entrepreneurs that participated less than 10 times to seminars (36%). The chi-square test shows a positive significant association for the respondents between 18-35 years old and startup survival, with 95% confidence and moderate strength (Phi: 0.38). For entrepreneurs between 36-55 years old, the relationship does not remain significant. The results here imply that the information from the Orange Grove seminars are more beneficial for *young entrepreneurs* rather than for older entrepreneurs.

Table 4.8: Seminars and survival, controlled for age, in %

Age	Participation seminars	1-9 times	≥ 10 times	Total
18-35 years	**Survival**	36	74	58
	Non-survival	64	26	42
	Total	100	100	100
	Total N	14	19	33

18-35: X^2: 4.76, Fisher's exact: 0.040, Phi: 0.380

When controlling for *business size* in terms of the number of team members (co-founders and employees) at the moment of joining OG, the relation between seminars and startup survival holds only for businesses that were started by more than one team member. It concerns a positive significant association. In other words, *startups started by more than one team member* that participated to 10 or more seminars are more likely to survive than startups started by more than more than one team member that participated less than 10 times to seminars, with 95% of confidence. This indicates that the seminars are most beneficial for startups that started multiple team members, including co-founders and employees.

Table 4.9: Seminars and survival, controlled for business size, in %

Team members	Participation seminars	1-9 times	≥ 10 times	Total
>1 team	Survival	35	71	55
	Non-survival	65	29	45
	Total	100	100	100
	Total N	17	21	38

Business size: X^2: 4.96, Fisher's exact: 0.048, Phi: 0.36

The positive relation between seminars and startup survival also remained partial for startups that have *received funding* with 90% of confidence. Again, it concerns a strong association (Phi: 0.48). Since the significant relation did not hold for startups that are not funded, which indicates that the seminars are most important for startups that received funding.

Table 4.10: Seminars and survival, controlled for funding, in %

Funding	Participation seminars	1-9 times	≥ 10 times	Total
Yes	Survival	50	92	79
	Non-survival	50	8	21
	Total	100	100	100
	Total N	6	13	19

Funding: X^2: 4.42, Fisher's exact: 0.07, Phi: 0.48

4.2.4 Participation at the bootcamp and survival, controlled for individual characteristics

When controlling for gender, the relation between participation in the bootcamp and startup survival only holds for female entrepreneurs. The survival rate is significantly higher for female startups that participated to the bootcamp (77%) in comparison with the *female startups* that did participate (20%), with 95% of confidence. Since, the association did not remain significant for males it implies that females stand out in both of the positive relations between the knowledge support activities and survival.

Table 4.11: Bootcamp and survival, controlled for gender in %

Gender	Participation bootcamp	No	Yes	Total
Female	Survival	20	77	61
	Non-survival	80	23	39
	Total	100	100	100
	Total N	5	13	18

Female: X^2: 4.92, Fisher's exact: 0.047, Phi: 0.52

Furthermore, the relation between participation at the bootcamp and survival holds for entrepreneurs *without entrepreneurial experience*, with a confidence level of 90%. Startups from entrepreneurs without previous entrepreneurial experience and who did not participate in the introduction bootcamp, were less likely to survive (30%) than startups who participated (67%). No significant association was found for entrepreneurs that did have previous experience before the current startup.

Table 4.12: Bootcamp and survival, controlled for entrepreneurial experience in %

Experience	Participation bootcamp	No	Yes	Total
No	Survival	30	67	56
	Non-survival	70	33	44
	Total	100	100	100
	Total N	10	24	34

No experience: X^2: 3.85, Fisher's Exact: 0.07, Phi: 0.34

4.2.5 Sub-conclusion knowledge support

Hypothesis 2: *"Startups from entrepreneurs who use the knowledge support are more likely to survive than startups that do not use the knowledge support, controlled for entrepreneur- and business characteristics."*

Significant evidence was found that startups from entrepreneurs that participate at seminars and at the introduction bootcamp are more likely to survive than startups from entrepreneurs that do not participate at these knowledge support activities. Hence, the study failed to reject the second hypothesis with 90% of confidence. However, after controlling for entrepreneur- and business characteristics, the findings showed that the participation at the seminars is only holds for female entrepreneurs, young entrepreneurs (18-35 years old), startups that started with more than one team member and startups that received funding. In addition, the introduction bootcamp seems most important for female startups and startups from entrepreneurs without previous entrepreneurial experience.

The overall perceived value of the seminars was estimated as good among the survey respondents. However, the interview respondents – especially the ones with a relative long OG membership – were less positive about the seminars. Also, startups who are not in the initial phase anymore gain less value from the seminars for their business. The seminars could be improved by making them more practical, like the introduction bootcamp, and by inviting more audience from outside Orange Grove. Entrepreneurs who participate at the introduction bootcamp get a crash course in entrepreneurship of three days. The interview results already made clear that the bootcamp brought lots of new knowledge, especially for the respondents from whom it was the first startup. To conclude, the findings indicate that the introduction bootcamp is most important for entrepreneurs without experience and for females.

4.3 INCUBATOR SERVICES AND STARTUP SURVIVAL: NETWORKING OPPORTUNITIES

Networking is essential for startup survival (Aerts et al., 2007; Hansen et al., 2000). Multiple positive relationships have been found between the number of diversified network contacts and business survival (Ozman, 2009; Gonzalez, 2018; Audretch et al., 2008). According to the social network theory, social networks contribute to the social network of the entrepreneur. Incubators play a "broker" role in meeting new network contacts (Peter et al., 2004).

4.3.1 Networking opportunities and the startup survival chance

A significant positive association was found between *having met investors* and *survival*. With a Phi of 0.27, it concerns a weak to moderate strength. Startups that met investors via Orange Grove have a higher survival chance (72%) than the startups that have not met investors via OG (46%), with 95% confidence. Nevertheless, the direction of the association is not known. It seems therefore obvious that startups that were already struggling to stay "alive" were less active in finding new contacts, especially investors.

Table 4.13: Having met investors, in %

Investors	No	Yes	Total
Survival	46	72	60
Non-survival	54	28	40
Total	100	100	100
Total N	24	29	53

Investors: X^2: 3.88, p: 0.049, Phi: 0.27

The majority of the respondents have not met important contacts from the private sector via OG. Although, the startups that did, show a far higher survival rate (70%) than the startups that did not (45%). With an alpha of 0.1, a relation was found between *having met contacts from the private sector* and *survival*, it concerns a positive association with a weak to moderate strength.

Table 4.14: Having met contacts from the private sector via OG, in %

Private sector	No	Yes	Total
Survival	45	70	60
Non-survival	55	30	40
Total	100	100	100
Total N	33	20	18

Private sector: X^2: 3.875, p: 0.08, Phi: 0.25

Furthermore, the majority of the respondents did not meet any public contacts that were important for their startup via OG. No significant association was found between having *met contacts from the public sector* and *survival*, which means that no evidence was found for a difference in the survival rate between startups that found public contacts and the ones that did not.

Table 4.15: Having met contacts from the public sector via OG, in %

Public sector	No	Yes	Total
Survival	54	72	60
Non-survival	46	28	40
Total	100	100	100
Total N	35	18	53

Public sector: X^2: 1.60, p: 0.21; Phi: 0.17

In contrast significant positive association was found between *met contacts from the foreign public sector* and survival wit 99% of confidence. The majority of the respondents did not meet contacts from the foreign public sector that were useful for their startup via OG. This is odd, as in fact the Dutch Embassy is a public foreign entity for Greek entrepreneurs. Apparently, the Embassy seems not to add value to the majority of the startups. Or, the respondents did not note that the Embassy is part of the public foreign sector. Yet, the survival rate is higher among the startups that did meet contacts from the foreign public sector (85%) than among startups that did not meet contacts from the foreign public sector (15%).

Table 4.16: Having met contacts from the foreign public sector via OG, in %

Foreign Public sector	No	Yes	Total
Survival	46	85	60
Non-survival	56	15	40
Total	100	100	100
Total N	33	20	53

Foreign public: X^2: 8.14, p: 0.004; Phi: 0.39

4.3.2 Perceived value of the networking opportunities

The networking possibilities were perceived as most important OG support by all the interview respondents, no matter what type of entrepreneur or which business sector. Although, the opportunities that emerged from the possibilities are different. For example, respondent 3 met all the startup team members via the incubator, and respondent 7 met a crucial investor via OG. In contrast, respondent 5 – who has been tenant for a relatively short time –found contacts that could be important via OG, but did take initiative to really speak with them yet. The same applies to respondent 8, although the attitude of the startup team is not pro-active towards meeting new contacts. So, although the networking possibilities are perceived as a valuable add to the new firms, it appears that also the initiative and pro-active attitudes from the entrepreneurs are required.

"I think, I personally feel that I tap into limited extent of the possibilities here. I should talk more to people."– R8

"If you do not take initiative then maybe you will have a lot of difficulties to go on with the business. It is your own responsibility. Orange Grove can help you, up to a point." – R4

According to entrepreneurs from which the business is already active in the market, the network possibilities are beneficial for meeting venture capitalists, angel investors and fundraisers at events (R1, R3, R6, R7). These financial contacts can turn contacts into important business partners (R7). This is in line with the significant positive correlation that was found between startups who have met investors via OG and startup survival.

Nevertheless, it seems that the respondents with previous entrepreneurial experience (R6; R9) point out that the incubator network of sponsors and potential clients should be more activated and linked to the startups.

"For startups, it is not only about money. It is also important to get feedback. So, within this network you can do pilots where you get feedback on." - R9

In result, tenants perceive the networking support as most valuable for their businesses. Without the incubator, they should not have the opportunity as they have now. As Peter (2004) implied, Orange Grove plays a broker role in matching the startups with the incubator's network. However, this could be done better according to the respondents that attempt to use the incubator's network (R1, R2, R3, R4, R7, R9).

"I think that Orange Grove should use the network better. They have quite "big names" in their network and in my opinion they use it too less. We do not see a lot from it" – R3

The network could be activated by providing all tenants a list of the network partners (R1, R2). Respondents without previous entrepreneurial experience explained that the network of OG was one of the reasons for their application. Striking is that the network was even more important in the decision of applying at OG for the respondents with previous entrepreneurial experience (R6, R9).

"We chose to become part of the incubator because we wanted to become directly part of the ecosystem. We believed that you can benefit from the knowledge exchange between startups, rather than try something ourselves in finding our own solutions. You can let other people know and you can ask. And of course, the opportunities for networking." – R9

4.3.3 Networking with investors via OG and survival, controlled for individual characteristics

The length of stay in OG plays an important role in the chance to meet new contacts via the incubator. Table 4.17 shows that tenants that have been member for shorter time would have had less chance to meet investors than tenants that have been member for a longer time. The majority of the first group did not find investors while the majority of the entrepreneurs that have been tenant for more than a year found investors via OG. The results show that startups that have been *tenant for less than a year* that met investors via OG were more likely to survive (83%) than startups that have been member for less than a year and did not meet investors (31%).

Table 4.17: Networking with investors and survival, controlled for length of OG membership, in %

Length of OG membership	Met investors	No	Yes	Total
<1 year	Survival	31	83	54
	Non-survival	69	17	46
	Total	100	100	100
	Total N	16	12	28

<1 year OG member: X^2: 4.92, Fisher's exact: 0.047, Phi: 0.52

More entrepreneurs with a master degree found investors via OG (34) than entrepreneurs with only a bachelor degree (19). A partial significant association was found when controlling for *bachelor degree*, with an alpha of 0.05. It concerns a moderate to strong relationship. In other words, startups from entrepreneurs that have only a bachelor degree that met investors via Orange Grove, were more likely to survive (100%) than startups from entrepreneurs that have a bachelor and did not meet investors via Orange Grove (40%), with 95% of confidence.

Table 4.18: Networking with investors and survival, controlled for educational level, in %

Education	Met investors	No	Yes	Total
Bachelor	Survival	40	100	68
	Non-survival	60	0	32
	Total	100	100	100
	Total N	10	9	19

Bachelor: X^2: 7.89, Fisher's exact: 0.01, Phi: 0.65

Furthermore, from the theory, it became clear that entrepreneurial role models can support in every startup stage, such as making a business plan and even with financial aspects. The empirical findings show that the relation between networking with investors and startup survival holds for startups *without entrepreneurial role models*, with 95% of confidence. However, the relation between investors and startup survival did not remain for startups with role models.

Table 4.19: Networking with investors and survival, controlled for entrepreneurial role models, in %

Role models	Met investors	No	Yes	Total
No	Survival	33	78	48
	Non-survival	67	22	52
	Total	100	100	100
	Total N	18	14	27

No role models: X^2: 4.75, Fisher's exact: 0.046, Phi: 0.42

It seems that the meeting investors via Orange Grove could substantiate these entrepreneurial role models for startups who do not have role models. The same applies to entrepreneurs *without previous experience*. Only a quarter of the inexperienced entrepreneurs that found investors did not survive. A significant association was found, which means that startups from inexperienced entrepreneurs that found investors via OG had more chance to survive than startups from inexperienced entrepreneurs that did not find investors via OG, with 95% of confidence.

Table 4.20: Networking with investors and survival, controlled for entrepreneurial experience, in %

Experience	Met investors	No	Yes	Total
No	Survival	33	74	56
	Non-survival	67	26	44
	Total	100	100	100
	Total N	15	19	34

No experience: X^2: 5.54, Fisher's exact: 0.036, Phi: 0.40

The majority of the startups that found investors were *technology-based* startups. However, the negative association only remained for non-tech startups. Although that tech-startups found more investors via Orange Grove, a positive association between finding investors via OG and survival for non-technology startups, with 90% of confidence.

Table 4.21: Networking with investors and survival, controlled for technology, in %

Technology	Met investors	No	Yes	Total
No	**Survival**	40	82	62
	Non-survival	60	18	38
	Total	100	100	100
	Total N	10	11	21

Non-tech: X^2: 3.88, Fisher's exact: 0.08, Phi: 0.43

4.3.4 The association between networking with the private sector and survival

A positive association was found between the respondents that met contacts from the private sector via OG and startup survival. When controlling for individual characteristics, it only remains significant for the respondents that *have been tenant for less than a year*, with 90% of confidence. Again, it indicates that entrepreneurs that were member for a short time had less chance to meet people via OG that are important for their business than entrepreneurs that are member for a long time.

Table 4.22: Networking with the private sector and non-survival, controlled for length of OG membership, in %

Length of OG membershp	Met investors	No	Yes	Total
< 1 year	**Survival**	27	71	54
	Non-survival	73	29	46
	Total	100	100	100
	Total N	11	17	28

< 1 year: X^2: 5.04, Fisher's exact: 0.05, Phi: 0.42

4.4.6 The association between networking with the foreign public sector and survival

Paragraph 4.1.4 described that the majority did not find foreign public contacts, however a significant positive association was found with survival. Following the other results regarding networking, it was assumed that a length of OG membership less than a year remained significant in this association. However, the association remained significant overall when controlling for membership duration. It also remained significant overall for the entrepreneur of all age groups and for experience. Striking is that the relation remained significant for multiple control variables, illustrated in table 4.23. For all of these types of startups it applies that the startups that found important foreign public sector contacts were more likely to survive than the startups that found these contacts.

Table 4.23: Networking with the foreign public sector and survival, significant for individual characteristics

Characteristics	Confidence level
Membership duration <1 year	90%
Membership duration >1 year	90%
Age 18-35	90%
Age 36-55	95%
Experience	95%
No experience	95%
Female entrepreneur	99%
`No funding	99%
Bachelor degree	95%
No role models	95%
Business started alone	95%
Non-tech startup	99%

4.3.5 Sub-conclusion networking possibilities

Hypothesis 3: *Startups from entrepreneurs that use the networking opportunities are more likely to survive than startups that do not use the networking opportunities, controlled for entrepreneur- and business characteristics.*

Evidence was found that startups from entrepreneurs that found investors, contacts from the private- and foreign public sector were more likely to survive than startups from entrepreneurs that did not find these contacts via the networking possibilities. The third hypothesis was failed to be rejected, with at least 90% of confidence. After controlling for entrepreneur- and business characteristics, it became clear that the length of membership in OG plays a significant role in all of the positive relations between the networking opportunities and startup survival. Obviously, entrepreneurs who stayed shorter than one year, had less chance to meet important contacts for their startup via OG than entrepreneurs who stayed tenant for more than a year. Another prominent finding is that the networking possibilities were most important for the startup survival chance from entrepreneurs that never had a business before. In contrast, the incubator's network was the main reason for applying to Orange Grove according to respondents that already had entrepreneurial experience.

In general, all of the interview respondents perceived the networking possibilities as most important OG support of all support services, no matter what type of entrepreneur or which business sector. The network opportunities could be even more improved by connecting the partners of OG more to the startups, for example by providing the tenants a list of all partners that are connected to the incubator.

4.4 INCUBATOR SERVICES AND STARTUP SURVIVAL: MENTORING SUPPORT

The last type of support is personal advice- or mentoring support. Incubators provide tutoring services for giving personal professional advice to the entrepreneurs. Peter et al. (2004) found a significant difference in the number of graduates between incubators that provided tutoring services and those that did not.

The mentoring can manifest in different forms. Orange Grove provides a personal mentor for every startup, one-on-one meetings with the guest speakers that are invited for seminars and the temporarily changing Entrepreneur In Residence (EIR). Peter et al., (2004) already found a significant difference in the number of graduates between incubators that provided coaching services and the ones who did not.

4.4.1 Mentoring support and the startup survival chance

The methodology already described that 49 from the 53 survey respondents had a personal mentor. When looking at table 4.24, it seems that the startup survival rate was higher among the entrepreneurs that met their mentor 10 times or more (75%) than the survival rate of entrepreneurs that met their mentor less than 10 times (54%), no significant association was found between *mentor meetings* and *survival*. Also, no significant association was found between *EIR meetings* and *survival*.

Table 4.24: Number of mentor meetings, in %

Meetings	<10	≥10	Total
Survival	54	75	60
Non-survival	46	25	40
Total	100	100	100
Total N	37	16	53

Another activity that applies to the mentoring support is the *one-on-ones*. The majority of the respondents participated to the one-on-ones. Again, no significant association was found between one-on-ones and startup survival. This means that no significant relationship was found between any of the mentoring support services of OG and startup survival.

Table 4.25: Participation at one-on-ones, in %

Participated	Yes	No	Total
Survival	66	50	60
Non-survival	34	50	40
Total	100	100	100
Total N	35	18	53

4.4.2 Perceived value of the mentoring support

No significant associations were found between all services of the *perceived value of the mentoring support* and *startup survival*. Table 4.26 indicates that the majority of the respondents (30) perceived the value of the personal mentor support as quite negative: terrible to average. Nevertheless, the majority of the respondents perceived the EIR and the one-on-ones as good to excellent (positive). Yet, also no significant associations were found between the EIR and the one-on-ones, and startup survival.

In addition, the interview respondents are not consistent about the value of the mentoring support of OG to their business. Most respondents who had less experience in the entrepreneurial field (when they started at OG) were interested to have a mentor for business related issues (R2, R4, R7). In contrast, respondents who already have had business skills (R5, R6, R7, R9) were more interested in gaining more inside knowledge about their business field. This is especially emphasized by entrepreneurs from startups that are already in the active in the market (R6, R7, R9). Some of the older startups also switched mentors because of their changing needs (R1, R4, R7).

Table 4.26 Perceived value of the mentoring support among the survey respondents, in %

Personal mentor	Terrible – Average	Good - Excellent	Total
Survival	57	63	59
Non-survival	43	37	41
Total	100	100	100
Total N	30	19	49
EIR	**Terrible – Average**	**Good - Excellent**	**Total**
Survival	67	71	70
Non-survival	33	29	30
Total	100	100	100
Total N	9	14	23
One-on-ones	**Terrible – Average**	**Good - Excellent**	**Total**
Survival	60	61	60
Non-survival	40	39	40
Total	100	100	100
Total N	25	28	53

"it is always good to have a mentor" (R6 & 7)

"The startups really help each other here, got more feedback of them than from my mentor." – R2

"I have my mentor, who is now also in the business."– R4

"We had a Meet & Greet in the beginning to meet your mentor, but that never happened" – R3

"I don't want to sound arrogant, but I do not need a general business person who tells me what I should and should not do" – R3

The entrepreneurs do not agree about the role that OG should play in arranging the contact. The respondents that took initiative in finding a mentor via OG, are satisfied with their mentor (R1, R4, R9). Even respondent 7 who graduated emphasizes the importance of a personal advisor. While the respondents that did not take much of initiative, do not have a mentor yet (R3, R5, R6, R8). In contrast, all respondents except from respondent 8 clarify that the EIR adds value to their startup. Especially the current entrepreneur in residence is appreciated:

"The entrepreneur in residence? Cannot become better!" – R3

"I really consider him as my mentor. He is amazing. He helps a lot. He is also very easy to contact, even in weekends." -R1

The interviews indicate that particularly entrepreneurs who take initiative in meeting their personal mentor or the EIR, will gain more personal advice. Except from respondent 8 – from who the startup idea seems not clear yet -, all respondents that gained the mentoring support profited from it. The relative less experienced entrepreneurs profit more from the entrepreneurial advices, while the more experienced respondents searched for more advice in their specific business field.

4.4.3 Sub-conclusion mentoring support

Hypothesis 4*: Startups from entrepreneurs that use the mentoring support are more likely to survive than startups that do not use the mentoring support.*

No significant evidence was found that startups from entrepreneurs that use the mentoring support (personal mentor meetings, meetings with the EIR and the one-on-ones) are more likely to survive than startups from entrepreneurs that do not use the mentoring support. With this in mind, hypotheses 4 was rejected.

The survey- and interview respondents are not consistent in the role of the personal mentor of OG for their businesses. The EIR seems the most appreciated mentoring service of the incubator, because of their availability. In contrast with the personal mentor, the EIR is easily available because of being located in the OG co-working space and tenants know exactly when they can approach the EIR.

4.5 General perceived value of Orange Grove

In general, the entrepreneurs applied for Orange Grove for different reasons. At first, the young entrepreneurs did not know how to start a business on their own (R2, R4). Some even explain that they would be in another business stage if they never joined the incubator: *"I would be out after 3 or 4 months." (R2)*. Others, argue that they wanted to be around other entrepreneurs when working on their business (R3, R4, R9). The entrepreneurs who are member for a longer time (R1, R2) explain that they see Orange Grove more as additional assistance.

"I think that whoever starts a business will do anything to succeed." … "With the membership here it is just faster to meet new people for the startup." – R1

The respondents that are currently able to sustain in the market and still tenant, state that they stay member because it is a value for money, the entrepreneurial climate is good and the working space is nice (R1, R4, R6). Respondent 7 is also sustainable and left the incubator about half a year ago. They did not terminated the membership because of unsatisfying reasons, but because it was time to expand. Furthermore, respondent 8 left while not being sustainable. They do not even have a product yet, but left because they needed to work from an office for legislative reasons. Still, his team would rather work from Orange Grove above their own office.

"It is like leaving home. It seems like being a student and you leave your parents. It felt that we were independent and our clients would appreciate it more." – R7

"I would prefer to be here at Orange Grove, because since we like to attend at these Fridays and the community events, it is a community. It was nice." – R8

After all, the results show that in particular the education program and the networking possibilities have a positive impact on the startup survival chance of specific Orange Grove tenants. An interesting notation regarding the value of the incubator was made by respondent 7. He clarified that their team learned a lot from the Dutch ethics that they saw:

"Suddenly, we realized that you can do it in a different way than the Greek, hierarchical way. The influence is great, we work like this. Believe me, we integrated a lot. Both of the Embassy and the Orange Grove." – R7

Moreover, since all four types of incubator support are discussed in the previous paragraphs, the hypothesis about the perceived value of the incubator activities can be reviewed.

Hypothesis 5: *"Tenants that perceive the incubator activities as high value for their startup are more likely to survive than startups that perceive the incubator support as low value for their startup."*

For none of the incubator support activities significant evidence was found that the perceived value of tenants play a role in the startup survival chance. Hypothesis 5 was rejected on the basis of the statistical findings.

4.6 INDIVIDUAL CHARACTERISTICS AND THE STARTUP SURVIVAL CHANCE

The theoretical framework described that the following entrepreneurial- and business characteristics can influence new firm survival: gender, age, education, entrepreneurial experience, having role models, motivation of starting the business and the number of hours worked per week. The business characteristics that were in included are: the business sector, technology-based, business size, funding and revenue.

4.6.1 Entrepreneurial characteristics

The theory is not clear about the role of *gender* to the startup survival chance. Caliendo & Kritikos (2010) argue that the startup survival chance does not differ between male and female entrepreneurs. Table 4.27 shows that there are more males (87) than females (33) within Orange Grove, however the relative distinction is the same, the survival rate for both genders is 61%. Obviously, no significant association was found.

Table 4.27: Gender and startup survival, in %

Gender	Female	Male	Total
Survival	61	31	61
Non-survival	39	39	39
Total	100	100	100
Total N	44	87	131

Lussier (2010) and Lent et al. (2000) describe that entrepreneurs between 25 and 34 years old are most likely to start a business, but startups from older entrepreneurs (>35) have higher survival chance (OECD, 2016, p. 126; Cressy, 1996). The majority of the Orange Grove (ex) tenants was between 18 and 35 years old when they became member. It seems that slightly more young entrepreneurs (18-35) did not survive in comparison with the older entrepreneurs (36-55). However, the chi-square test shows no significant association between *age* and survival.

Table 4.28: Age and startup survival, in %

Age	18-35	36-55	Total
Survival	59	64	61
Non-survival	41	36	39
Total	100	100	100
Total N	73	58	131

The level of education can influence the startup survival chance (van Gelderen et al., 2005). Almost every entrepreneur in Orange Grove has a bachelor degree (127 out of 131) and the majority also has a master degree (62%). Mengistae (2006) states that the likelihood of survival increases by every year of high education. The chi-square test does not show a significant difference between the *education level* and survival. Nevertheless, a bachelor degree already applies to high education, so apparently 97% of the Orange Grove entrepreneurs is high educated.

Table 4.29: Education and startup survival, in %

Education	< bachelor	Bachelor	Master	Total
Survival	75	65	58	61
Non-survival	25	35	42	39
Total	100	100	100	100
Total N	4	46	81	131

Having previous entrepreneurial experience can influence the startup survival chance (Mengistae, 2006; Fried & Tauer, 2015; Bosma et al., 2004). Most of the survey respondents did not run a business before the current startup (34). The survival rate among the inexperienced entrepreneurs seem higher than from experienced entrepreneurs, but no significant association was found between previous *entrepreneurial experience* is related to the survival chance of the OG startups.

Table 4.30: Experience and startup survival, in %

Experience	Yes	No	Total
Survival	68	56	60
Non-survival	32	44	40
Total	100	100	100
Total N	19	34	131

Another factor that influences the startup survival chance is having *entrepreneurial role models* (Andersson & Koster, 2010; Fritsch & Mueller, 2007, Lussier, 2010). With a p-value of 0.064 and an alpha of 0.1, a positive association was found between role models and survival. It concerns a weak to moderate strength. Startups that have entrepreneurial friends or family were more likely to survive (73%) than startups without these role models (48%), with 90% of confidence.

Table 4.31: Role models and startup survival, in %

Role models	Yes	No	Total
Survival	73	48	60
Non-survival	27	52	40
Total	100	100	100
Total N	19	34	53

Role models: X^2: 3.44; p: 0.06; Phi: 0.26

Furthermore, a positive significant association was found between the total *working hours per week* and *startup survival*. 24 from the 53 respondents work less than 40 hours per week on their startups. The significant relationship points out that entrepreneurs that work more than 40 hours per week on their business have a higher survival chance (72%) than entrepreneurs that work 40 hours or less (46%), with 95% of confidence.

Table 4.32: Hours worked on startup per week, in %

Hours	≤40	> 40	Total
Survival	46	72	60
Non-survival	54	28	40
Total	100	100	100
Total N	24	29	53

X^2: 3.88, p: 0.049, Phi: 0.27

The last personal factor that was examined is the *motivation of becoming entrepreneur*. According to the GEDI (2016, p.16) opportunity-driven entrepreneurs are better prepared and have more skills than the entrepreneurs that are necessity-driven. These startups that arose out of opportunity reasons seem to be more likely to survive (Bosma & Sternberg, 2014; Block & Sander, 2009). The survey outcomes show that only two respondents started a business of necessity reasons, the chi-square test was not possible. In addition, most interviewed entrepreneurs explain that always wanted to create their own business. Some started directly after their study (R3) or even when they were still studying (R6, R7, R10), while others first experienced to work for a boss in a Greek company (R1, R2, R5). The working atmosphere in Greek companies is considered to be bad (R1, R2, R7, R9, R10).

Table 4.33: Motivation and startup survival, in %

Motivation	Necessity	Opportunity	Total
Survival	50	61	61
Non-survival	50	39	39
Total	100	100	100
Total N	2	51	53

"I found a job, but this was terrible. So, after a while I really did not like it anymore because the hierarchy was super bad. I know this is a Greek thing, but it was super bad. I promised myself to not stay here long and to not work at a big company in Greece with this hierarchy ever again." - R2

In contrast to the survey outcomes, the interview respondents imply that is was very hard to find a job (R4, R7, R10). It is striking three of the ten interview respondents argue that they started from necessity reasons, while the survey findings show that only two respondents were necessity-driven. On the on hand, the motives of becoming entrepreneur was to be the own boss, to feel creative and to be able to schedule your own work. On the other hand, it was the best option to start for themselves because of bad experiences at Greek companies or no job opportunities due to the economic crisis.

4.6.2 Business characteristics

According to the theory, firms that started with more than one entrepreneur have more chance to survive than firms started alone (Audretsch et al., 1997; Almeida et al., 2003, Astebro & Bernhardt, 2003). New firms generally face a liability of smallness (Brüderl & Schlusser, 1990). Table 4.34 shows that the majority of the respondents started with two or three team mates. In contrast with the theory, at first sight it seems startups that were started alone showed the highest survival rate (73%). However, no significant relationship was found between *business size* and survival.

Table 4.34: Business size and startup survival, in %

Team members	Alone	2-3	4-5	Total
Survival	73	54	60	60
Non-survival	27	46	40	40
Total	100	100	100	100
Total N	15	27	11	131

It already became clear in Stinchcombe's theory that firms struggle with the liability of newness. Business age might therefore be the most important predictor for startup survival. It is no surprise that a significant positive relationship was found between *business age* and survival, because it seems obvious that the high survival rate of 2016 is caused by the tenants that are still active in OG. Although Shane (2010) stated that half of the startups will not survive after five years, table 4.35 shows that already half of the startups did not survive after two to four years. Yet, also the paused startups were included in the non-survival, so these might have (little) chance to survive in the future.

Table 4.35: Business age and startup survival, in %

Year of OG application	2013	2014	2015	2016	Total
Survival	53	52	56	96	60
Non-survival	47	48	44	4	40
Total	100	100	100	100	100
Total N	34	31	43	23	131

X^2 : 14.180 ; p: 0.003; Phi : 0.329

Furthermore, business sectors differ in the number of competitors, the entry-barriers, growth-rates and the importance of scale economy (Audretsch et al., 1991; Audretsch et al., 1997; Huyhebaert, 2000). The specific *business sector* of the startup affects the startup survival chance, for instance new firms in an industry with a lot of competitors are less likely to survive than firms that found a niche. In addition, the incubator support could be more beneficial for specific industries. Appendix A.4 shows that the highest number of startups is found in the sectors tourism (17), agro food (17) and social entrepreneurship. (19). However, no significant association was found between business sector and survival. Although this seems striking, it fits in the assumption of Shane (2008) that no matter in what context the business is, survival chances are the same.

In addition, according to Cockburn & Wagner (2007), Nerkar& Shae (2003) and Motohashi (2005) *technology* startups are more likely to survive than non-tech startups. Table 4.36 shows that the majority of the startups offer tech products. However, no evidence was found that being active in technology startups is significantly related to the startup survival chance.

Table 4.36: Technology and startup survival, in %

Technology	Tech	Non-tech	Total
Survival	66	52	60
Non-survival	34	48	40
Total	100	100	100
Total N	87	44	131

Financial resources are crucial for the firms in terms of survival (Huyhebaert, 2000). Table 4.37 reports that most startups have not received funding yet. With a p-value of 0.039 and an alpha of 0.05, a significant relationship was found between *funding* and survival. It concerns a positive association with a weak to moderate strength. Startups with funding more likely to survive (81%) than the startups that without funding (53%), with 95% of confidence.

Table 4.37: Funding and startup survival, in %

Funding	Yes	No	Total
Survival	81	53	60
Non-survival	19	47	40
Total	100	100	100
Total N	21	32	131

Funding: X^2:: 4.27; p: 0.04; Phi: 0.28

At last, a long *length of OG membership* could predict a higher startup survival chance because of receiving more external support than startups that spent less time in the incubator. Yet, this is not possible since no significant relation was found.

Table 4.38: Length of stay in OG and startup survival, in %

Lengt of OG membership	<1 year	>1 year	Total
Survival	54	68	60
Non-survival	46	32	40
Total	100	100	100
Total N	21	32	131

4.3.3 Sub-conclusion

This paragraph attempted to answer the last sub-question: *"Which entrepreneur- and business characteristics of the Orange Grove tenants are related to the startup survival chance?"*

Significant evidence that was found that startup survival is related with two entrepreneur characteristics: the number of working hours per week, entrepreneurial role models. Startups from entrepreneurs who have entrepreneurial friends or family were more likely to survive than startups that did not have role models, with 90% of confidence, and, startups from entrepreneurs that work more than 40 hours per week were more likely to survive than startups from entrepreneurs that work less than 40 hours per week, with 95% of confidence. No evidence was found that the other entrepreneur characteristics are related to startup survival. Moreover, two significant relations were found for business characteristics and startup survival: business age and funding. The relation between business age and survival is no surprise, since "survival" also contain the tenants that are still active in OG. This would obviously cause the high survival rate of the startups that started at OG in 2016. Startups that have received funding are more likely to survive than startups who did not receive funding, with 95% of confidence. To conclude, the characteristics of having role models and receiving funding are positively related to the startup survival chance.

4.7 CONCLUSION RESULTS

This chapter presented the results of the empirical research, described per type of incubator support and controlled for individual characteristics. The direct relations between the individual characteristics and startup survival were described in the last paragraph. The research questions can be answered with the findings. The first sub-question was:

"Which of the incubator support activities are related to the startup survival chance?"

Six significant correlations between incubator support services and the startup survival chance were found. It concerns activities from the physical support (use of the co-working space), the knowledge support services (seminars and the introduction bootcamp), the networking possibilities (with investors, the private sector and the foreign public sector). No evidence was found that the mentoring support influence the startup survival chance. All correlations concern positive relations and it seems that the more the participation, the higher the startup survival chance. However, it cannot just be assumed that participating to these activities leads to a higher survival chance, because it is not clear if the relations are causally related or if they concern a reversed causality. In the case of a reversed causality the survival rate would cause the extent of participation at the support activities. Table 4.39 below sums the six incubator support activities that correlate to the startup survival chance.

Table 4.39: Significant associations between independent variables and survival

Incubator activity	Confidence level	Strength
Rate of hours worked from OG	90%	Weak to moderate
Participation at seminars	95%	Moderate
Participation at bootcamp	90%	Weak
Networking with investors	95%	Weak
Networking with the private sector	95%	Weak
Networking with foreign public sector	99%	Weak to moderate

The second research question was:

"What is the perceived value of the incubator activities according to the entrepreneurs, and are these values related to the startup survival chance?"

In general, the respondents are positive about Orange Grove. Most respondents who quitted their membership left because of acquiring their own working space. The respondents who are member for a longer time (at least more than a year) seem more critical towards the incubator support activities than the respondents who have been member for shorter time (less than a year). Striking is that the perceived value of the knowledge support was positive among the survey respondents, while the interview respondents were less positive regarding the seminars. From all the incubator activities, the network possibilities are estimated as most valuable by all of the interview respondents. Furthermore, the EIR seems the most appreciated mentoring service, because of their knowledge and their availability. Tenants always know when they ask the EIR for support, while they it is – apparently - less clear when they can meet their personal mentor. At last, the working space adds value to the startups because it requires less organizational time and costs in comparison with having an own office.

The third research question was:

"Which entrepreneur- and business characteristics of the Orange Grove tenants correlate to the startup survival chance?"

Beside controlling for entrepreneur- and business characteristics, it was also tested if there exist direct relationships between the characteristics and startup survival. The entrepreneur- and business characteristics of the OG tenants that correlate to startup survival are: startups from entrepreneurs who work more than 40 hours per week on their business, startups that received funding and startups from entrepreneurs who have entrepreneurial friends or family. All of these significant relations were positive, which means that they are more likely to survive than entrepreneurs that do not work more than 40 hours per week, did not received funding and do not have entrepreneurial role models. Furthermore, a positive relationship was found for business age. However, this is not a surprising finding since the high survival rate of the startups that started at OG in 2016 seems to be caused by the tenants that are still active in OG.

Table 4.40: Moderator effects of individual characteristics on the relations between incubator activities and startup survival

Characteristics	Seminars	Bootcamp	Networking investors	Networking private sector	Networking foreign public sector
OG membership: <1 year			+	+	+
OG membership: >1 year					+
Gender: female	+	+			+
18-35 years	+				+
Experience: yes		+			+
Experience: no					
Education: bachelor			+		+
Education: master					
Role models: yes					
Role models: no			+		
Technology startup: yes					
Technology startup: no			+		+
Funding: yes					
Funding: no	+				+

Light orange: p < 0.05; Dark orange: p: < 0.1

The third research question was:

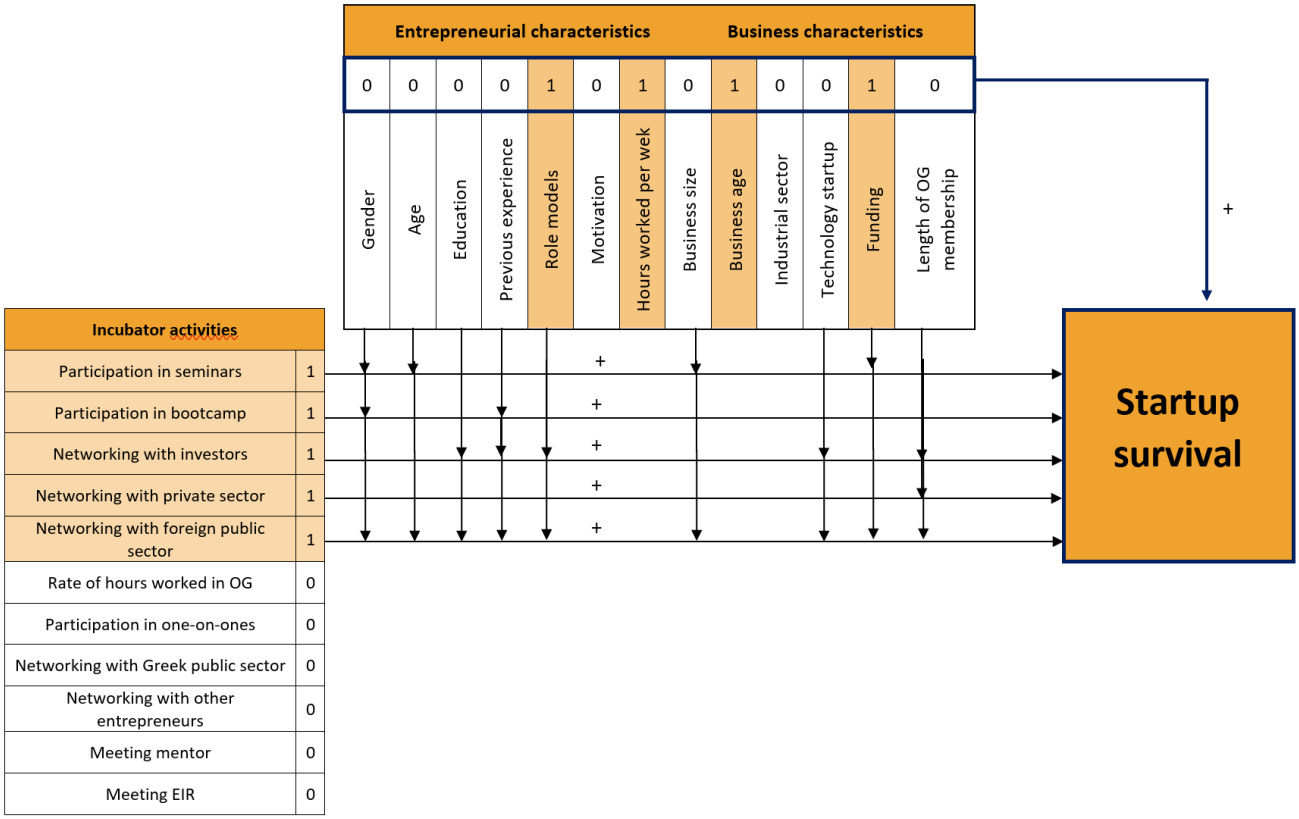
"Which correlations between incubator support activities and the startup survival chance remain when controlling for entrepreneur- and business characteristics?"

The controlling for individual characteristics pointed out that all significant relations between the incubator support activities and startup survival were moderated by individual characteristics. Most striking is that the seminars and introduction bootcamp seem most important for female entrepreneurs and entrepreneurs without previous entrepreneurial experience. The network possibilities seem most important for tenants that stay OG member for less than a year. However, this can be caused by endogeneity, as a short membership leads to less chance to meet new people than long incubator membership.

4.7.1 Final conceptual model

The final conceptual model is presented on the next page and gives an overview of the empirical outcomes of the study. All significant correlations between the incubator activities and startup survival are positively related (+). In addition, the significant relations between the individual characteristics are also positively related with startup survival. The characteristics that are related with survival are marked with "1" and the characteristics from which no significant evidence was found with "0. The moderation effect is shown by the arrows that point from the individual characteristics to the relation between the incubator activities and startup survival.

Figure 4.41: Final conceptual model



5 CONCLUSION AND DISCUSSION

5.1 CONCLUSION

It has been acknowledged that new firms have a big chance to "die" during their first years of existence. Stinchcombe (1965) defined these early business deaths as the liability of newness. Startup incubators are entities that provide business support services for (young) entrepreneurs, with the intention to improve their business performances and increase the startup survival rates. Previous researches argued that motivations for new firms to become part of a startup incubator are mainly based on minimizing initial costs, being embedded in a supportive entrepreneurial environment, building networks and improving business knowledge. However, it cannot just be assumed that all incubator support is fruitful for all tenant startups. There exist differences in types of incubators, types of firms, types of entrepreneurs and differences in the geographical context that can all affect the value of the support added to the startups. All of these contextual differences lead to the assumption that incubator studies should focus on one single incubator. This case-study was concentrated on a startup incubator in Greece which was established by the Dutch Embassy during the financial crisis. The incubator, Orange Grove (OG), aims to reduce the high unemployment rates by stimulating Greeks in setting up their own business.

"To what extent does Orange Grove influence the startup survival chance of its tenants?" was the main question of this study. The purpose was to identify if the participation at specific OG activities were related to the startup survival chance of the incubator tenants. The provided support activities were categorized in four types of support: physical support, knowledge support, networking possibilities and mentoring support. The empirical research concerned a mixed methods approach which combines qualitative- and quantitative research methods. Two databases were used for conducting the statistical tests for the empirical study. The registration data contained information of the complete population of Orange Grove, existing of 131 startups. The survey was send to all startups and resulted in a response rate of 40% (53 respondents). The survey gained information about the extent of participation in the OG support activities, about the individual characteristics of the respondents and how they perceive the value of the support activities to their business. The sample turned out to be representative for all OG (ex) tenant startups. On this basis, it was assumed that the results of the empirical research are internal valid. Moreover, ten interviews were conducted to get insight in the underlying motivations about the perceived value of the OG support services to their business.

The theoretical assumption that incubators can play a role in increasing the startup survival chance was verified by the empirical findings of this study. Nevertheless, it was shown that the influence of Orange Grove to startup survival only applied to specific support services and to startups with specific characteristics. The results reveal that the physical support (the co-working space), the knowledge supports (seminars and the introduction bootcamp) and the networking possibilities (with investors, contacts from the private sector and contacts from the foreign public sector) can influence the startup survival chance of OG tenants. The knowledge support activities of OG seemed most important for entrepreneurs that are female, young and that have no experience in being entrepreneur. The network possibilities seem most important for startups that with an OG membership of less than a year. Still, it has to be noted that even though no evidence was found for all of the incubator support activities, such as the mentoring support, it does not mean that they do not influence the startup survival chance in general.

The empirical research also showed that the interview respondents who already had entrepreneurial experience perceived the knowledge support as a "low value" for their business, while the knowledge

support of especially the bootcamp was perceived as very beneficial among the inexperienced entrepreneurs. In general, the interviews pointed out that the respondents that were tenant for a longer time were more critical towards the value of the incubator support for their business than the respondents that were tenant for a shorter time. The networking possibilities within the incubator were perceived as the strength of the incubator among all interview respondents. The findings underline previous academic literature about the crucial role of human- and social capital for new firm survival. Human capital covers the education, experience, knowledge and skills in how to run a business of an entrepreneur and social capital contains all the resources that are available through one's social network. The seminars and the introduction bootcamp contribute to human capital and are especially important for entrepreneurs that are young, female and inexperienced in the entrepreneurial field. The network possibilities with investors, the private sector and the foreign public sector contribute to social capital and are especially important for startups that have been member for less than a year.

5.2 Discussion

The theoretical framework described multiple factors that influence the survival chance of new firms. It is important to note that all the relations reflect associations and not causations. There might be a possibility that the associations are related in another way than it seems. An example of this reversed causality is the relations between the networking possibilities and startup survival that remained for respondents with a short membership duration. It could be likely that the entrepreneurs that already left the incubator, had less opportunities to meet new contacts via OG than entrepreneurs that have been tenant for more than two years. In other words, it may be likely that the non-survivors caused the less networking instead of that less networking caused non-survival.

5.2.1 Theoretical implications

The theoretical framework described that entrepreneurs can develop their business knowledge and skills via the support services of business incubators. The finding that the introduction bootcamp, the seminars and the networking possibilities can influence the startup survival chance underlines the human- and social capital theory in entrepreneurship. Davidsson & Honig stated that especially entrepreneurial education contributes to startups, because of intangible knowledge sharing and the development of new skills that foster entrepreneurial activities. It was therefore expected that the knowledge support of OG would increase the human capital of the entrepreneurs in terms of business knowledge.

However, it was not expected that the knowledge support benefits only apply for the females, young- and inexperienced entrepreneurs. Possible clarifications for these outcomes point to experience. It is obvious that inexperienced entrepreneurs profit from all the new business information that they obtain. During the interviews, the seminars were perceived as "low value", but were seen as beneficial by the inexperienced respondents. On the contrary, the relation between participation at seminars and startup survival did not remain for neither experienced nor inexperienced respondents. Still, the experience issue could be in line with the finding that knowledge support benefits only apply for females. This possible clarification is on the basis of the studies from Fairlie and Robb (2009) and Rodriguez and Santos (2009) that females tend to have less entrepreneurial knowledge than males at the start of their business. Regarding the age of the entrepreneur, it seems logical that younger entrepreneurs have less business experience than older entrepreneurs. It is therefore very striking that the direct relation between experience and startup survival was not significant, since it seems to play an indirect role. Further research should examine this underlying role of experience more explicitly. After all, the interview respondents that did not have previous experience in being entrepreneur clarified that they would not be in their current business phase if they had never joined Orange Grove.

In contrast, the entrepreneurs that had previous experience argued that the incubator functions more as a bonus for them. This indicates that incubator support services are mainly fruitful for the survival chance of startups from inexperienced entrepreneurs, at least for Orange Grove.

Furthermore, it was expected that the networking possibilities would increase the startup survival chance via contributing at the social capital of the entrepreneurs. Social capital is the sum of all resources that are available through the social structure – or networks - in which individuals are embedded. The crucial value of diversified networks for startups has been widely discussed in the social capital theory. The accessibility to a professional network, like Orange Grove, allows entrepreneurs to find new business partners or clients more easily than when not having the possibility to meet new contacts. It was assumed that the diversified network from Orange Grove could lead more easily to intangible knowledge sharing, the development of new entrepreneurial skills and investments. Indeed, the possibilities to meet investors, contacts from the private sector and contacts from the foreign public sector were important for startup survival.

A prominent finding was that all significant relations between networking possibilities and startup hold for the entrepreneurs who have been member for less than a year. On the one hand, this could indicate that the startups that were able to find important contacts via OG in the beginning of the incubation period were more able to survive than others. In this case, the role of OG as a “broker” for networking would most important in the beginning of the incubation period. On the other hand, the relation may be caused by startups that already left the incubator before having the chance to meet new contacts. After all, “having met important contacts for the business” could have been interpreted differently among the survey respondents. More research is needed on the real impact of the new contacts that entrepreneurs meet via OG. For example, the interviews leaded to the insight that some respondents found all of their team members via the OG while others “found” important contacts, but they still have to take initiative in contacting them.

No relations were found between mentoring support and startup survival. This was already partially explained by the fact that only some entrepreneurs were able to meet the entrepreneur in residence. Another explanation that suits is the way of measuring the influence of mentoring support. The empirical research used the number of mentor meetings as measuring factor. However, it may be the case that not the number of meetings indicates the influence, but the value of the mentor meetings. For example, an entrepreneur who had more than ten mentor meetings from which zero were important, gained less benefits from the mentoring program than an entrepreneur who had only two meetings, but from a very high quality. Because of the fact that the majority of the interview respondents claimed that the mentor was important for their startup, the latter clarification seems obvious.

At last, it was striking that only three out of the fourteen individual characteristics were related to startup survival, while the theory implicated that all of these characteristics would have influence. This could be clarified by the young age of the research group. All startups were less than five years old during the study, while most of the startup survival theory was built on firms that were more than five years old. It implies that the characteristics of having entrepreneurial role models, being funded and the working hours worked per week have already influence on the startup survival chance of relatively young firms. This should obviously be confirmed by further research, especially by a study that focuses on the same case-study over a few years.

5.2.2 Social implications

The results of this study are beneficial for all entrepreneurs that are currently tenant in Orange Grove and for entrepreneurs who are thinking of becoming tenant. Entrepreneurs, who have the characteristics for which the incubator support was fruitful, would – and should - be more motivated to participate at the support activities. In contrast, it does not mean that the support is not beneficial for entrepreneurs who do not fit in this picture, but no empirical evidence was found. With the findings of this study, Orange Grove can make decisions in how to improve the services and for which type of startups in particular. Specific recommendations for Orange Grove are described in paragraph 5.5. An important implication for the Greeks society is that Orange Grove apparently fosters the survival chance of particular new firms by improving entrepreneurial knowledge, skills and contacts of the tenants. Since the government announced that it attempts to stimulate the Greek startup ecosystem, the government should support initiatives as Orange Grove and comparable startup support services. These comparable startup support services could be provided by other incubators or accelerators, provided that they offer the same types of support as Orange Grove.

In sum, this study supports the contribution from incubators to improving the social- and human capital for increasing the startup survival chance. The results that the support services are most important for inexperienced entrepreneurs are not shocking. What is shocking, is that no evidence was found for the relation between previous entrepreneurial experience and startup survival. The findings therefore contradict the theory in that multiple individual characteristics would be directly related to startup survival. The only evidence was found for tenants that have entrepreneurial friends or family, that are funded and that work more than 40 hours per week on their business. Obviously, further research is required to gain insight in the underlying concepts of the empirical findings.

5.3 FURTHER RESEARCH

The first recommendation for further research was already pointed in the discussion: the underlying role of entrepreneurial experience in incubator studies. The finding that the knowledge support services were particularly important for female-, young-, and inexperienced entrepreneurs, was clarified by a lack of entrepreneurial experience. However, experience was not directly related to startup survival, inexperienced entrepreneurs apparently profit from different support services than experienced entrepreneurs. If future research can confirm this, new support policies could be developed. For this reason, future research should examine the differences between supportive needs of new firms that are established by experienced entrepreneurs and the supportive needs of new firms that are established by inexperienced entrepreneurs. When mapping these differences, the management of startup incubators will know what kind of support they should provide to which entrepreneurs and experienced entrepreneurs will know to what type of incubator they should apply. Consequently, further research should examine the relation between more individual characteristics and the use of incubator support services. When looking again at the conceptual model (figure 2.5), further research could examine if the individual characteristics are related with the use and value of the incubator support activities. No arrow was illustrated, since this was not the objective of the study. It is however interesting to what extent different types of entrepreneurs participate in the incubator activities, so as for the incubator management to create support that suits in the needs of the participators.

The second recommendation for future research is to examine the relation between the length of incubator membership and the added value from specific incubator support services to new firms again. This study found that the networking possibilities seem most important for entrepreneurs that have been in OG for less than a year, although it was not clear if it concerns causality or a reversed

causality. The most logical clarification was a reversed causality, but this requires future research as well, because if other studies confirm that the value of a specific type of support reduces after a particular moment of time, it would be wise to adopt maximum incubator membership periods. Entrepreneurs from who the support value decreases, should make place for new incubates to foster entrepreneurship more effectively.

The third recommendation is research on why and which particular type of startups or type of entrepreneurs do not benefit from incubator services. For instance, none of the relations that were found in this study remained significant for males. Research should focus on which particular startups and entrepreneurs do not benefit from being part of an incubator. Following this study, the participation could be measured with a survey among only the startups that left being "non-survived". It is also recommended to conduct interviews with as many ex tenants that did not survive as possible.

A fourth recommendation is that future research should compare the impact from external support to the same type types of businesses. Orange Grove access all type of startups from all kind of business industries. However, specialized incubators could solve the problem of providing too general support that is not beneficial for the majority of the startups. It would be interesting to apply the same research approach of this study to a specialized incubator, and compare the results afterwards. This may even lead to new incubator models. In addition, the literature study implied that business incubators provide more or less same four types of support services, on which this study based the categorization: physical support, knowledge support, networking possibilities and mentoring support. Instead of this categorisation, it would be interesting for future research to study the real impact of every service, by examining which specific support service contributed to what specific business asset in which specific business phase.

The fifth recommendation for further research suits in the field of organizational studies and is based on the interview results. At least half of the interview respondents clarified that they started their own business because they would never like to work for a Greek boss. Apparently, the working atmosphere and ethics in Greek companies differs from (i.e.) the Dutch working ethics. The respondents that have worked in Greek companies clarify that the Greek organizational structures are "very" hierarchical. One respondent emphasized that Orange Grove opened his eyes he realized that the organizational structure could be different than the "Greek way". His startup embedded the "way of working" of the Dutch Embassy and Orange Grove in his own business and that this was the biggest benefit of Orange Grove to the startup. It would be interesting to include this "way of working" as a factor in future research on startup survival. The "way of working" could be measured in many ways, for example as how the relations between the CEO and the employees are structured, as the freedom of the employees within the startup or how the overall working atmosphere inside the business is perceived by all startup team members.

The last recommendation concerns a replication of the current study. In fact, this study came too early because of the young age of Orange Grove. Startup survival was defined as new firms that are able to sustain in the market for at least three years. However, there were very few startups that existed more than three years. The next paragraph explains this issue as a research limitation. Although, it may function a starting point for longitudinal research, where the same respondents will be examined in the same manner in the future. It is recommended to repeat this study over three years, in order to see if the findings of this study still remain for all the current respondents. In three years, it would be more valid to qualify them as survived or non-survived.

5.4 RESEARCH LIMITATIONS

This study had multiple limitations, which are discussed below.

The main research limitation was already mentioned and concerns the earliness of the study. Startup survival was defined as new firms that are able to sustain in the market for at least three years. The most valid approach would be to divide the startups in two groups: all startups that exist for more than three years in the market should be grouped in the "survival" group and the terminated startups should be grouped in the "non-survival" group. However, there were far too less startups that existed for more than three years in the market. For this reason, all startups that were graduated from the incubator and still active in the market were grouped together with the startups that were tenant in OG for at least nine months (all entrepreneurs that became tenant up until the 8th application round). This group (graduates + actives) was defined as "survival". In addition, all startups that terminated or paused the business activities were grouped as "non-survival". It was assumed that the startups that were paused would not survive in the future. This limitation concerns an internal validity issue, because the "survival" startups have still chance to terminate their businesses in the future and the paused startups could have a possibility to continue and grow into a viable business. In order to confirm the results from the empirical research, it is recommended to replicate the study after at least three years.

The second limitation concerns the selection of the respondents. Ideally, the objective of the interviews was to get a deeper insight in the perceived value of the incubator activities. It has to be noted that the analysis was based on interviews with only ten entrepreneurs and is not generalizable for all (ex) tenants. Furthermore, as explained in the non-response analysis, it was hard to find participants that terminated their startup. Most of them did not like to participate to an interview about the incubator since they left due to quitting their business. This means that tenants who were less active in the activities had a minor emphasis in the study. On the one hand, the perceived value and quality of the separate activities could be examined best along the entrepreneurs that were most active in participating, because they know what they are talking about. On the other hand, the reasons behind terminating the businesses could have been interesting to this study. Furthermore, objective was to have as many survey respondents as possible. The questionnaires were sent by e-mail to all 131 entrepreneurs. After a week, a reminder was sent and after two weeks a second reminder was sent. However, ex-tenants that changed their e-mail address did not receive the survey. These effects were minimized by calling the entrepreneurs from who the e-mail returned and asking their new e-mail address. However, three ex-tenants were not reached because they were not available by phone. Furthermore, it might occurred that the (ex-)tenants that were more engaged with OG than others, felt more encouraged to fill out the survey.

The third research limitation points out some inadequacies in the survey questions. It is acknowledged that multiple factors on different levels can play a role in the startup survival chance (i.e. individual, geographical, and institutional). Other contextual factors did not yield the scope of the subject and were not taken into consideration. However, some survey questions should have been more accurate regarding the individual context. For example, the theory noted that previous experience can increase the startup survival chance. As well experiences in the entrepreneurial-, industrial- and managerial field were described as factors for startup survival. In this study, only the entrepreneurial experience was taken into account, defined as entrepreneurs that had a startup before the current one. However, entrepreneurial experience could also rise from business knowledge from an entrepreneurship study or experience from a similar job. Additionally, industrial- and managerial experience were not added in the survey, which is a limitation of the study. In particular, because entrepreneurial experience seems to play a great role in the results. The same issue applies for role models.

The survey questions covered only a part of the concept by asking if they have entrepreneurial friends or family, but not if the respondents got their entrepreneurial friends before or after starting a business.

The fifth limitation regards the fact that some startups were founded by more than one entrepreneur was partially left behind, because it would cause a bias in the results when testing the entrepreneurial characteristics. For this reason, only the characteristics of the founder who signed the contract with OG were included. The limitation of this methodological consideration is that other co-founders could contain of characteristics that the included founder does not, such as having entrepreneurial experience or entrepreneurial role models. Although, this limitation is nuanced by the assumption that the founders who signed the contract are most active in participating to the support activities. Hence, they form the most interesting target group of the study.

The last important research limitation concerns the case-study. Due to this research design, is not possible to generalize the results for all incubators. Even if another incubator provides exactly the same business support services, they would differ in quality and type of tenants. The conclusions only apply to Orange Grove and cannot be drawn upon the general influence of incubators.

After all, it is important to bear in mind that this research concerns a quite explorative character. Due to the young existence of Orange Grove and the uncertainty about the future of the active startups, it is wise to repeat this study a few years. However, the results form good basis for the OG management to improve their support services, especially for the target groups that appeared from the controlling for individual characteristics, and for creating a flourishing entrepreneurial atmosphere for its tenants.

5.5 Recommendations for Orange Grove

The conclusions of the study could contribute to improving the support services of Orange Grove. Significant evidence was found that three from the four types of incubator support are related to startup survival. However, these positive relations only hold for specific entrepreneurs and businesses. This lead to recommendations for Orange Grove to focus on specific target groups. Furthermore, the interview respondents clarified that the incubator contributed to their startup and can even contribute more if the incubator management implement their suggestions for improvement. This lead to the following recommendations for Orange Grove.

At first, the study found significant evidence that the incubator support increases the startup survival chance of specific type of startups (i.e. startups from female and inexperienced entrepreneurs). It is therefore recommended to specify the incubator selection procedure to these target groups. When only selecting the specific target groups that profit from the services, as shown in the final conceptual model (figure 4.41), the OG survival rates are likely to increase.

The second recommendation is in contrast with the first one. The type of entrepreneurs and businesses for which the support seems important could be identified during the selection procedure in order to categorize the entrepreneurs and adapt different types of support to the different categories. For example, the study concluded that the knowledge support is most important for startups from entrepreneurs that do not have entrepreneurial experience. The experienced- and inexperienced entrepreneurs can be identified during the application interviews. After the selection procedure, two groups of tenants could be created in the registration database that categorize the entrepreneurs with and without entrepreneurial experience. The knowledge support should apply to the demands of these two groups by asking them what kind of seminars they would like to participate.

This results in two types of seminars: seminars with “expert” business knowledge and seminars with the “basic” business knowledge. In this manner, the more experienced entrepreneurs could also profit from the knowledge support services. The demands of the entrepreneurs could be measured by making online polls where they can vote of where they can send there preferences. Above all, the seminars should become more practical, like the bootcamp. It is recommended to split the seminars into a theoretical part (the presentation) and a practical part (a workshop) for turning the knowledge immediately into practice.

Third, the interview respondents are positive about the incubator’s network, but suggested to make more clear which organizations and people are connected to the incubator and the Embassy. The results also pointed out that networking is related to the startup survival chance for tenants who stayed less than a year. Obviously, especially entrepreneurs that stayed shorter time in OG had less chance to meet new contacts. The incubator management should bring the potential contacts better in contact with specific startups to foster and speed up the networking process. Suggestions are to provide lists with all the contacts that are connected with Orange Grove so that the entrepreneurs know who they can. The OG management should also organize more networking events, for example meet and greet evenings. A more simple recommendation for connecting the network more with the entrepreneurs is to send invitations for the weekly events to the whole network, instead of to only the tenant startups.

The fourth recommendation is to think about maximum membership durations for tenants. There are OG tenants within the incubator that are already sustainable in the market and member for more than two years. Basically, this is not a problem. However, OG could lose its image as startup incubator when it keeps startups for a long time, especially when they are able to sustain in the market for a relative long time.

The fifth suggestion concerns the issue of the low daily occupation of the co-working space. This can be improved by implementing stricter attendance rules, such as: entrepreneurs should work at least 10 hours per week from the co-working space in order to participate to the Squeeze. This can be checked by the personal “magnets” that every entrepreneur has to open the OG door. A second reason to attract entrepreneurs more to work from the co-working space is for increasing the entrepreneurial atmosphere and internal network possibilities.

After all, the study has proven that Orange Grove can be a positive addition for (nascent) entrepreneurs that want to prevent their startups from an early “death” and flourish instead. It was especially recommended for young, inexperienced and female entrepreneurs to apply and join the startup incubator. Tenants should participate as much as possible in the support activities, because Orange Grove provides a set of “vitamins” that can improve the survival chance of startups, In this way, the Orange Grove can give them the energy to grow towards sustainable and healthy firms in the market.

LITERATURE AND SOURCES

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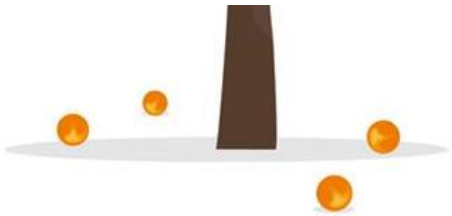
ORANGE GROVE: THE VITAMIN C FOR GREEK STARTUPS?



Appendix'

Contents:

APPENDIX A: OVERVIEW STATISTICS

The tables below define the variable names that were used for the statistical tests in SPSS and for conducting the statistical tests. The variables that were both available in the administration file (N=131) and in the survey file (N=53) are marked with a *. The other variables are only available in the survey data.

Table A.1: Definitions of the personal variables

Name	***Definition***
*Non_Survivor**	*=1 left Orange Grove because of terminating/pausing the activities, else 0*
*Gender**	*Male, Female*
*Age**	*18-24 years, 25-34 years, 35-44 years, 45-54 years*
*Edu_bach**	*Proportion of owners who have a bachelor degree*
*Edu_mast**	*Proportion of owners who have a master degree*
Experience	*=1 if the entrepreneur has participated in another startup before the current one, else 0*
Motivation	*Opportunity-driven (I choose to be entrepreneur) / Necessity-driven (No other job opportunity than starting my own business*
Role_models	*=1 if the entrepreneur has entrepreneurial role models, else 0*

Table A.2: Definitions of the business variables

Name	***Definition***
*Categories**	*The sector of the startup;*
*Tech**	*=1 if the startup is technology-based, else 0*
*Service**	*=1 if the startup provides a service, else 0*
Fina_fund	*=1 if the startup has been able to get funding, else 0*
Size_firm_start	*The proportion of people working in the startup at the moment of entering OG; alone, 2-3, 4-5, 6-10, more than 10*

Table A.3: Definitions of the incubator activity variables

Name	***Definition***
*In_OG**	*=1 currently part of Orange Grove, else 0*
Membership_dur	*Membership duration in months; less than 6 months, 6-12 months, 12-18 months, 18-24 months, more than 24 months*
Participation_seminar	*The proportion of times that the entrepreneurs participated on the seminars; never, 1-3 times, 4-6 times, 7-9 times, 10 or more times*
Participation_bootcamp	*The proportion of times that the entrepreneurs participated on the bootcamps; never, 1-3 times, 4-6 times, 7-9 times, 10 or more times*
Participation_oneonones	*The proportion of times that the entrepreneurs participated on the one-on-ones; never, 1-3 times, 4-6 times, 7-9 times, 10 or more times*
Participation_mentor	*The proportion of times that the entrepreneurs contacted the mentor; never, 1-3 times, 4-6 times, 7-9 times, 10 or more times*
Participation_residence	*The proportion of times that the entrepreneurs contacted the entrepreneur in residence; never, 1-3 times, 4-6 times, 7-9 times, 10 or more times*
Value_seminar	*The value of the seminars according to the entrepreneurs; excellent, good, average, poor, terrible*

Value_bootcamp	*The value of the bootcamps according to the entrepreneurs; excellent, good, average, poor, terrible*
Value_oneonones	*The value of the one-on-ones according to the entrepreneurs; excellent, good, average, poor, terrible*
Value_mentor	*The value of the mentoring program according to the entrepreneurs; excellent, good, average, poor, terrible*
Value_residence	*The value of the entrepreneur in residence according to the entrepreneurs; excellent, good, average, poor, terrible*
Netw_Inv	*Proportion of investors met via Orange Grove that are important for your network*
Netw_Mult	*Proportion of contacts of multinationals met via Orange Grove that are important for your network*
Netw_For	*Proportion of foreign startuppers met via Orange Grove that are important for your network*
Netw_Gre	*Proportion of contacts of the Greek Public sector met via Orange Grove that are important for your network*
Netw_Priv	*Proportion of the private sector met via Orange Grove that are important for your network*

A.1 METHODOLOGY: RESULTS GOODNESS-OF-FIT TEST

Table A1.1: Status of startups per application round

Application round	1) September 2013*	2) November 2013*	3) March 2014*	4) July 2014*	5) November 2014	6) February 2015	7) October 2015	8) December 2016	Total
Active in OG	0	1	1	0	0	6	9	19	36
Graduated	5	12	7	2	6	9	0	3	44
Paused startup	5	8	1	1	6	6	8	1	36
Terminated startup	1	2	1	1	5	4	1	1	15
Total	11	23	10	4	17	25	18	23	131

** Three or more years from September 2017*

Table A1.2: Results chi-square goodness of fit test

Variable	*Chi-square*	*P-value*
Non-survival	*0.026*	*0.87*
Gender	*0,03*	*0.95*
Age	*0.919*	*0.34*
Education	*0.03*	*0.96*
Tech / non-tech	*0,865*	*0.35*
*Business sector**	-	-
Length of OG membership	*1.028*	*0.31*

** Two cells have counts less than 5*

Table A1.3: Cramers' V and Phi

Value	*Strength*
-1.0 to 0.7	*Strong negative*
-0.7 to -0.3	*Weak negative*
-0.3 to 0.3	*Little correlation*
0.3 to 0.7	*Weak positive*
0.8 to 1.0	*Strong positive correlation*

A2: ENTREPRENEUR CHARACTERISTICS OUTCOMES CHI-SQUARE TEST

Table A2.1: Entrepreneur characteristics, in %

Characteristic		Active	Non-survival	Total	Total N
Gender	Female	61	39	100	44
	Male	61	39	100	87
	Total	61	39	100	131
Age	Age 18-35	59	41	100	73
	Age 36-55	64	36	100	58
	Total	61	39	100	131
Education	< Bachelor	75	25	100	4
	Bachelor	65	35	100	46
	Master	58	42	100	81
	Total	61	39	100	131
Experience	Experience	68	32	100	19
	No experience	56	44	100	34
Role models	Role models	48	52	100	27
	No role models	73	27	100	26
	Total	60	40	100	53
Motivation	Necessity-driven	50	50	100	2
	Opportunity-driven	61	39	100	51
	Total	60	40	100	53
Hours worked per week	≤40 hours	46	54	100	24
	40 hours	72	28	100	29
	Total	60	40		52

Gender X^2: 0.002; p: 0.961;
Age X^2 : 0.325; p: 0.569
Education X^2 : 0.827; p: 0.363;
Experience X^2: 0.801; p: 0.371;
Role models X^2: 3.441; p: 0.064; Phi: 0.255
X^2: 3.878, p: 0.049, Phi: 0.271

A3: BUSINESS CHARACTERISTICS OUTCOMES CHI-SQUARE TEST

Table A3.1: Entrepreneur characteristics, in %

Characteristic		Active	Non-survival	Total	Total N
Team members at business start	Alone	73	27	100	15
	2-3	54	46	100	27
	4-5	60	40	100	11
	Total	60	40	100	53
Technology startup	No	52	48	100	44
	Yes	66	35	100	87
	Total	60	40	100	131
Received funding	No	53	47	100	32
	Yes	81	19	100	21
	Total	60	40	100	53
Length of OG membership	< 1 year	54	68	100	28
	> 1 year	46	32	100	25
	Total	60	40	100	53

Gender X^2: 0.002; p: 0.961;
Age X^2 : 0.325; p: 0.569
Education X^2 : 0.827; p: 0.363;
Experience X^2: 0.801; p: 0.371;
Role models X^2: 3.441; p: 0.064; Phi: 0.255

Table A3.2: Business sectors (originally categories)

Sector	Survival	Non-survival	Total	Total N
Agro-food	65	25	100	17
Culture	75	25	100	4
E-commerce	60	40	100	10
E-learning	50	50	100	6
Engineering & design	75	25	100	8
Event management	25	75	100	4
Fashion	50	50	100	10
Health, sports & wellness	60	40	100	10
Marketing	67	33	100	6
Publishing	50	50	100	2
Social entrepreneurship	59	41	100	17
Tourism	65	35	100	17
Transport & logistics	50	50	100	4
Other	64	36	100	14

Table A3.3: Business sector and non-survival (transformed sectors)

Sector	Active	Non-survival	Total	Total N
Agro food	65	35	100	17
Online business	56	44	100	16
Fashion	50	50	100	10
Social entrepreneurship	63	37	100	19
Tourism	65	35	100	17
Culture, health & sports	64	36	100	14
Marketing & publishing	67	33	100	6
Other	59	41	100	32

A4: INCUBATOR ACTIVITIES OUTCOMES CHI-SQUARE TEST

Table A4.1: Hours worked on startup per week, in %

Hours	≤40	> 40	Total
Survival	46	72	60
Non-survival	54	28	40
Total	100	100	100
Total N	24	29	53

X^2: 3.878, p: 0.049, Phi: 0.271

Table A4.2 Hours worked in OG per week, in %

Hours	≤ 40	> 40	Total
Survival	63	50	60
Non-survival	37	50	40
Total	100	100	100
Total N	43	10	53

X^2: 0.555, p: 0.456

Table A4.3: Participation seminars

Times	<10	≥10	Total
Active	43	72	60
Non-survival	57	28	40
Total	100	100	100
Total N	32	21	53

X^2: 4.463; p: 0.035; Phi: 0,.48

Table A4.4 : Participation bootcamp

Participated	Yes	No	Total
Active	69	44	60
Non-survival	31	56	40
Total	100	100	100
Total N	35	18	53

X^2: 2.892; p: 0.089; Phi: 0.234

Table A4.5: Number of mentor meetings, in %

Meetings	<10	≥10	Total
Active	54	75	60
Non-survival	46	25	40
Total	100	100	100

Table A4.6: Participation at one-on-ones, in %

Times	**Yes**	**No**	**Total**
Survival	66	50	60
Non-survival	34	50	40
Total	100	100	100
Total N	35	18	53

X^2: 1.227; p: 0.268

Table A4.7: Type of contacts met via OG, in %

Type of contact	Active	Non-survival	Total	Total N
0-5 Other entrepreneurs	61	39	100	33
> 5 Other entrepreneurs	60	40	100	20
Investors	72	28	100	29
No investors	46	54	100	24
Multinationals	70	30	100	20
No multinationals	45	55	100	33
Public sector	72	28	100	18
No public sector	54	46	100	35
Foreign public	85	15	100	20
No foreign public	46	56	100	33
Total	60	40	100	53

Investors: X^2: 3.878, p: 0.049, Phi: 0.271
Multinationals: X^2: 3.175, p: 0.075, Phi: 0.245
Public sector: X^2: 1.599, p: 0.206, Phi: 0.174
Foreign public sector: X^2: 8.140, p: 0.004; Phi: 0.392

Perceived value of the incubator activities, in %

Table A4.8: Value of the seminars, in %

Value	Terrible	Poor	Average	Good	Excellent	Total
Active	3	9	19	69	0	100
Non-survival	0	10	38	48	5	100
Total	2	9	26	60	2	100
Total N	1	5	14	32	1	53

Table A4.9: Value of the introduction bootcamp, in %

Value	Terrible	Poor	Average	Good	Excellent	Total
Active	3	9	22	44	22	100
Non-survival	0	10	33	48	10	100
Total	2	9	26	45	17	100
Total N	1	5	14	24	9	53

Table A4.10: Value of the mentor program, in %

Value	Terrible	Poor	Average	Good	Excellent	Total
Active	3	22	38	22	15	100
Non-survival	5	24	29	29	14	100
Total	4	23	34	25	15	100
Total N	2	12	18	13	8	53

Table A4.11: Value of the Entrepreneur In Residence, in %

Value	Terrible	Poor	Average	Good	Excellent	Total
Active	3	13	50	31	3	100
Non-survival	0	14	48	33	5	100
Total	2	13	49	32	4	100
Total N	1	7	26	17	2	53

Table A4.12: Value of the one-on-ones, in %

Value	Terrible	Poor	Average	Good	Excellent	Total
Active	3	13	31	38	16	100
Non-survival	0	5	43	48	5	100
Total	2	9	36	42	11	100
Total N	1	5	19	22	6	53

A5: INCUBATOR AND STARTUP SURVIVAL, CONTROLLED FOR INDIVIDUAL CHARACTERISTICS

Table A5.1: Partial relationship gender with participation to the bootcamp and non-survival, in %

Gender	Participation bootcamp	No	Yes	Total
Female	**Active**	20	77	61
	Non-survival	80	23	39
	Total	100	100	100
	Total N	5	13	18
Male	**Active**	54	64	60
	Non-survival	46	36	40
	Total	100	100	100
	Total N	13	22	35

Female: X^2: 4.923, Fisher's exact: 0.047, Phi: 0.523
Male: X^2: 0.326, Fisher's exact: 0.724: Phi: 0.097

Table A5.2: Partial relationship gender with participation to seminars and non-survival, in %

Gender	Participation seminars	1-6 times	> 6 times	Total
Female	**Active**	0	79	61
	Non-survival	100	21	39
	Total	100	100	100
	Total N	4	14	18
Male	**Active**	53	67	60
	Non-survival	47	33	40
	Total	100	100	100
	Total N	17	18	35

Females: X^2: 8.082, Fisher's exact: 0.011, Phi: 0.670
Males: X^2: 0.686, Fisher's exact: 0.500: Phi: 0.140

Table 5.3: Partial relationship funding with participation to seminars and non-survival, in %

Funding	Participation seminars	1-6 times	> 6 times	Total
No	**Active**	40	58	50
	Non-survival	60	42	50
	Total	100	100	100
	Total N	15	19	34
Yes	**Active**	50	92	79
	Non-survival	50	8	21
	Total	100	100	100
	Total N	6	13	19

No: X^2: 1.074, Fisher's exact: 0.491, Phi: 0.178
Yes: X^2: 4.421, Fisher's exact: 0.071, Phi: 0.482

Table A5.4: Seminars and non-survival, controlled for business size, in %

Team members	Participation seminars	1-9 times	≥ 10 times	Total
>1 team	**Survival**	35	71	55
	Non-survival	65	29	45
	Total	100	100	100
	Total N	17	21	38

Business size: X^2: 4.96, Fisher's exact: 0.048, Phi: 0.36

Table A5.5: Partial relationship experience with participation to the bootcamp and non-survival, in %

Experience	Participation bootcamp	No	Yes	Total
No	**Active**	30	67	56
	Non-survival	70	33	44
	Total	100	100	100
	Total N	10	24	34
Yes	**Active**	63	73	68
	Non-survival	37	27	322
	Total	100	100	100
	Total N	8	11	19

No: X^2: 3.849, Fisher's exact: 0.068, Phi: 0.336
Yes: X^2: 0.224, Fisher's exact: 1.00: Phi: 0.109

Table A5.6: Partial relationship membership duration with participation to community events and non-survival, in %

Duration	Participation at community events	0	1-3 times	Total
< 1 year	**Active**	27	71	54
	Non-survival	73	29	46
	Total	100	100	100
	Total N	11	17	28
> 1 year	**Active**	54	83	68
	Non-survival	46	17	32
	Total	100	100	100
	Total N	13	12	25

< 1 year: X^2: 5.038, Fisher's exact: 0.051, Phi: 0.424
> 1 year: X^2: 2.493, Fisher's exact: 0.202: Phi: 0.316

Table A5.7: Partial relationship gender with participation to community events and non-survival, in %

Gender	Participation at community events	No	Yes	Total
Female	**Active**	42	100	61
	Non-survival	58	0	39
	Total	100	100	100
	Total N	12	6	18
Male	**Active**	42	70	60
	Non-survival	58	30	40
	Total	100	100	100
	Total N	14	7	21

No: X^2: 5.727, Fisher's exact: 0.038, Phi: 0.564
Yes: X^2: 2.557, Fisher's exact: 0.153: Phi: 0.270

Table A5.8: Partial relationship age with participation to community events and non-survival, in %

Age	Participation at community events	0	1-3 times	Total
18-35	**Active**	40	72	58
	Non-survival	60	28	42
	Total	100	100	100
	Total N	15	18	33
36-55	**Active**	44	82	65
	Non-survival	56	18	35
	Total	100	100	100
	Total N	9	11	20

18-35: X^2: 3.478, Fisher's exact: 0.0.62, Phi: 0.325
36-55: X^2: 3.039, Fisher's exact: 0.160: Phi: 0.390

Table A5.9: Partial relationship education level with participation to community events and non-survival, in %

Education	Participation at community events	No	Yes	Total
Bachelor	**Active**	60	78	68
	Non-survival	40	22	2
	Total	100	100	100
	Total N	10	9	19
Master	**Active**	29	75	56
	Non-survival	71	25	44
	Total	100	100	100
	Total N	14	20	34

Bachelor: X^2: 0.693, Fisher's exact: 0.628, Phi: 0.191
Master: X^2: 7.201, Fisher's exact: 0.013: Phi: 0.460

Table A5.10: Partial relationship role models with participation to community events and non-survival, in %

Role models	Participation at community events	No	Yes	Total
No	**Active**	33	60	48
	Non-survival	67	40	52
	Total	100	100	100
	Total N	12	15	27
Yes	**Active**	50	93	73
	Non-survival	50	7	27
	Total	100	100	100
	Total N	12	14	26

No: X^2: 1.899, Fisher's exact: 0.252: Phi: 0.265
Yes: X^2: 6.032, Fisher's exact: 0.026, Phi: 0.482

Table A5.11: Partial relationship technology startup with participation to community events and non-survival, in %

Technology	Participation at community events	0	1-3 times	Total
Non-tech	**Active**	50	73	62
	Non-survival	50	27	38
	Total	100	100	100
	Total N	10	11	21
Tech	**Active**	36	78	59
	Non-survival	64	22	41
	Total	100	100	100
	Total N	10	22	32

Non-tech: X^2: 1.147, Fisher's exact: 0.387, Phi: 0.234
Tech: X^2: 5.776, Fisher's exact: 0.028: Phi: 0.425

Table A5.12: Partial relationship funding with participation to community events and non-survival, in %

Funding	Participation at community events	0	1-3 times	Total
No	**Active**	39	63	50
	Non-survival	61	37	50
	Total	100	100	100
	Total N	18	16	34
Yes	**Active**	50	92	79
	Non-survival	50	8	21
	Total	100	100	100
	Total N	6	13	19

Yes: X^2: 4.421, Fisher's exact: 0.071, Phi: 0.482
No: X^2: 1.889, Fisher's exact: 0.303: Phi: 0.236

Table A5.13: Partial relationship membership duration with networking with investors and non-survival, in %

Membership duration	Met investors	No	Yes	Total
< 1 year	**Active**	31	83	54
	Non-survival	69	17	46
	Total	100	100	100
	Total N	16	12	28
> 1 year	**Active**	75	65	68
	Non-survival	25	35	32
	Total	100	100	100
	Total N	11	21	32

< 1 year: X^2: 4.923, Fisher's exact: 0.047, Phi: 0.523
> 1 year: X^2: 0.336, Fisher's exact: 0.724, Phi: 0.097

Table A5.14: Partial relationship education with networking with investors and non-survival, in %

Education	Met investors	No	Yes	Total
Bachelor	**Active**	40	100	68
	Non-survival	60	0	32
	Total	100	100	100
	Total N	10	9	19
Master	**Active**	50	60	56
	Non-survival	50	40	44
	Total	100	100	100
	Total N	14	20	34

Bachelor: X^2: 7.892, Fisher's exact: 0.011, Phi: 0.645
Master: X^2: 0.334, Fisher's exact: 0.728: Phi: 0.099

Table A5.15: Partial relationship role models with networking with investors and non-survival, in %

Role models	Met investors	No	Yes	Total
No	**Active**	33	78	48
	Non-survival	67	22	52
	Total	100	100	100
	Total N	18	14	27
Yes	**Active**	83	70	73
	Non-survival	17	30	27
	Total	100	100	100
	Total N	6	20	26

No: X^2: 4.747, Fisher's exact: 0.046, Phi: 0.419
Yes: X^2: 0.417, Fisher's exact: 1.00: Phi: 0.419

Table A5.16: Partial relationship experience with networking with investors and non-survival, in %

Experience	Met investors	No	Yes	Total
No	**Active**	33	74	56
	Non-survival	67	26	44
	Total	100	100	100
	Total N	15	19	34
Yes	**Active**	67	70	68
	Non-survival	33	30	32
	Total	100	100	100
	Total N	9	10	19

No: X^2: 5.536, Fisher's exact: 0.036, Phi: 0.404
Yes: X^2: 0.024, Fisher's exact: 1.000: Phi: 0.036

Table A5.17: Partial relationship technology startup with networking with investors and non-survival, in %

Technology	Met investors	No	Yes	Total
Non-tech	**Active**	40	82	62
	Non-survival	60	18	38
	Total	100	100	100
	Total N	10	11	21
Tech	**Active**	50	67	59
	Non-survival	50	33	41
	Total	100	100	100
	Total N	11	21	32

Non-tech: X^2: 3.884, Fisher's exact: 0.080, Phi: 0.430
Tech: X^2: 0.907, Fisher's exact: 0.473: Phi: 0.168

Table A5.18: Partial relationship membership duration with networking with the private sector and non-survival, in %

Membership duration	Met investors	No	Yes	Total
< 1 year	**Active**	27	71	54
	Non-survival	73	29	46
	Total	100	100	100
	Total N	11	17	28
> 1 year	**Active**	67	69	68
	Non-survival	33	31	32
	Total	100	100	100
	Total N	9	16	25

< 1 year: X^2: 5.038, Fisher's exact: 0.051, Phi: 0.424; > 1 year: X^2: 0.011, Fisher's exact: 1.000: Phi: 0.021

Table A5.19: Partial relationship gender with networking with the foreign public sector and non-survival, in %

Gender	Met investors	No	Yes	Total
Female	**Active**	30	100	61
	Non-survival	70	0	39
	Total	100	100	100
	Total N	10	8	18
Male	**Active**	52	75	60
	Non-survival	48	25	40
	Total	100	100	100
	Total N	23	12	35

No: X^2: 4.368, Fisher's exact: 0.055, Phi: 0.395
Yes: X^2: 3.707, Fisher's exact: 0.088: Phi: 0.385

Table A5.20: Partial relationship membership duration with networking with the foreign public sector and non-survival, in %

Membership duration	Met investors	No	Yes	Total
< 1 year	**Active**	39	80	54
	Non-survival	61	20	46
	Total	100	100	100
	Total N	18	10	28
> 1 year	**Active**	53	90	68
	Non-survival	47	10	32
	Total	100	100	100
	Total N	15	17	32

No: X^2: 4.368, Fisher's exact: 0.055, Phi: 0.395
Yes: X^2: 3.707, Fisher's exact: 0.088: Phi: 0.385

Table A5.21: Partial relationship age with networking with the foreign public sector and non-survival, in %

Age	Met investors	No	Yes	Total
18-35	**Active**	45	77	58
	Non-survival	55	23	42
	Total	100	100	100
	Total N	20	13	33
46-55	**Active**	46	100	65
	Non-survival	54	0	35
	Total	100	100	100
	Total N	13	7	20

No: X^2: 3.287, Fisher's exact: 0.087, Phi: 0.316
Yes: X^2: 5.799, Fisher's exact: 0.044: Phi: 0.528

Table A5.22: Partial relationship education with networking with the foreign public sector and non-survival, in %

Education	Met investors	No	Yes	Total
Bachelor	**Active**	46	100	68
	Non-survival	54	0	32
	Total	100	100	100
	Total N	11	8	19
Master	**Active**	46	75	56
	Non-survival	54	25	44
	Total	100	100	100
	Total N	22	12	34

Bachelor: X^2: 6.378, Fisher's exact: 0.018, Phi: 0.579
Master: X^2: 2.749, Fisher's exact: 0.152: Phi: 0.284

Table A5.23: Partial relationship role models with networking with the foreign public sector and non-survival, in %

Role models	Met investors	No	Yes	Total
No	**Active**	40	71	48
	Non-survival	60	29	52
	Total	100	100	100
	Total N	20	7	27
Yes	**Active**	54	92	73
	Non-survival	46	8	27
	Total	100	100	100
	Total N	13	13	26

No: X^2: 2.051, Fisher's exact: 0.073, Phi: 0.276
Yes: X^2: 4.887, Fisher's exact: 0.209: Phi: 0.434

Table A5.24: Partial relationship revenue with networking with the foreign public sector and non-survival, in %

Revenue	Met investors	No	Yes	Total
No	**Active**	50	86	67
	Non-survival	50	14	33
	Total	100	100	100
	Total N	16	14	30
Yes	**Active**	41	83	52
	Non-survival	59	17	48
	Total	100	100	100
	Total N	17	6	23

No: X^2: 4.286, Fisher's exact: 0.058: Phi: 0.378
Yes: X^2: 3.159, Fisher's exact: 0.155, Phi: 0.371

Table 5.25: Partial relationship experience with networking with the foreign public sector and non-survival, in %

Role models	Met investors	No	Yes	Total
No	**Active**	40	79	56
	Non-survival	60	21	44
	Total	100	100	100
	Total N	20	14	34
Yes	**Active**	54	100	69
	Non-survival	46	0	31
	Total	100	100	100
	Total N	13	6	19

No: X^2: 4.970, Fisher's exact: 0.038: Phi: 0.382
Yes: X^2: 4.047, Fisher's exact: 0.109, Phi: 0.462

Table A5.26: Partial relationship funding with networking with the foreign public sector and non-survival, in %

Funding	Met foreign public sector	No	Yes	Total
No	**Active**	32	100	50
	Non-survival	68	0	50
	Total	100	100	100
	Total N	25	9	34
Yes	**Active**	88	73	79
	Non-survival	12	27	21
	Total	100	100	100
	Total N	9	10	19

No: X^2: 12.240, Fisher's exact: 0.001, Phi: 0.600

Yes: X^2: 0.608, Fisher's exact: 0.603: Phi: 0.179

Table A5.27: Seminars and survival, controlling for characteristics

Membership duration	X^2	Fisher's	Phi
Membership < 1 year	2.392	0.151	0.292
Membership ≥ 1 year	2.307	0.344	0.217
Gender			
Female	8.082	0.011	0.670
Male	0.686	0.500	0.140
Age			
18-35	4.758	0.040	0.380
36-55	0.292	0.651	0.121
Education			
Bachelor	2.170	0.319	0.338
Master	2.591	0.160	0.276
Role models			
Yes	0.657	0.635	0.335
No	3.033	0.128	0.159
Experience			
Yes	3.352	0.129	0.219
No	1.638	0.296	0.420
Hours worked per week			
<40	1.386	0.408	0.240
>40	1.077	0.357	0.193
Business size			
1 team member	0.008	1.000	-0.023
>1 team member	4.962	0.048	0.361
Core business			
Non-tech	0.505	0.631	0.070
Tech	4.394		
Funding			
Yes	4.421	0.071	0.482
No	1.074	0.491	0.178
Total	4.379	0.35*	0.290

Table A5.28: Introduction bootcamp, controlling for characteristics

Membership duration	X^2	Fisher's	Phi
Membership < 1 year	3.458	0.125	-0.351
Membership ≥ 1 year	0.006	1.000	0.016
Gender			
Female	4.923	0.047	0.523
Male	0.326	0.724	0.097
Age			
18-35	1.954	0.273	0.243
36-55	0.848	0.613	0.206
Education			
Bachelor	0.652	0.617	0.185
Master	2.51	0.151	0.272
Role models			
Yes	0.657	0.635	0.159
No	2.095	0.236	0.279
Experience			
Yes	0.224	1.000	0.109
No	3.849	0.068	0.336
Hours worked per week			
<40	1.731	0.240	0.269
>40	0.544	0.646	0.137
Business size			
1 team member	0.085	1.000	0.075
>1 team member	2.335	0.185	0.248
Core business			
Non-tech	0.297	0.618	0.119
Tech	2.815	0.149	0.297
Funding			
Yes	2.248	0.262	0.258
No	2.267	0.259	0.344
Total	2.838	0.89*	0.234

Table A5.29: Networking with investors, controlling for characteristics

Membership duration	X^2	Fisher's	Phi
Membership < 1 year	7.479	0.009	0.517
Membership ≥ 1 year	0.265	1.000	0.103
Gender			
Female	3.378	0.145	0.433
Male	1.228	0.317	0.187
Age			
18-35	4.758	0.40	0.380
36-55	0.220	1.000	0.105
Education			
Bachelor	7.892	0.011	0.645
Master	0.334	0.728	0.099
Role models			
Yes	0.417	1.000	0.127
No	4.747	0.046	0.419
Experience			
Yes	0.024	1.000	0.036
No	5.536	0.036	0.404
Hours worked per week			
<40	0.621	0.682	0.161
>40	2.833	0.197	0.313
Business size			
1 team member	0.682	0.460	0.213
>1 team member	2.661	0.191	0.265
Core business			
Non-tech	3.884	0.080	0.430
Tech	0.907	0.473	0.168
Funding			
Yes	1.466	0.272	0.178
No	1.074	0.491	0.278
Total	3.878	0.089	0.271

Table A5.30: Networking with private sector, controlling for characteristics

Membership duration	X^2	Fisher's	Phi
Membership < 1 year	5.038	0.051	0.424
Membership ≥ 1 year	0.011	1.000	0.021
Gender			
Female	2.822	0.245	0.396
Male	1.228	0.317	0.187
Age			
18-35	1.954	0.273	0.243
36-55	1.319	0.356	0.257
Education			
Bachelor	3.316	0.141	0.418
Master	1.449	0.276	0.206
Role models			
Yes	0.013	1.000	0.023
No	3.033	0.128	0.335
Experience			
Yes	3.316	0.141	0.418
No	1.449	0.276	0.206
Core business			
Non-tech	1.615	0.346	0.277
Tech	1.587	0.281	0.223
Hours worked per week			
<40	0.168	1.000	0.084
>40	2.778	0.164	0.310
Business size			
1 team member	0.008	1.000	-0.023
>1 team member	3.527	0.099	0.305
Funding			
Yes	0.596	0.440	0.177
No	1.889	0.303	0.236
Total	3.175	0.090	0.245

Table A5.31: Networking with foreign public sector, controlling for characteristics

Membership duration	X^2	P	P*	Phi
Membership < 1 year	4.368		0.055	0.395
Membership ≥ 1 year	3.707		0.088	0.385
Gender				
Female	9.164		0.004	0.714
Male	1.712		0.282	-,221
Age				
18-35	3.287		0.087	0.316
36-55	5.799		0.044	0.528
Education				
Bachelor	6.378		0.018	0.579
Master	2.749		0.152	0.284
Role models				
Yes	4.887		0.209	0.434
No	2.051		0.073	0.276
Experience				
Yes	4.047		0.044	0.462
No	4.970		0.026	0.382
Core business				
Non-tech	11.748		0.001	0.748
Tech	0.681		0.467	0.146
Hours worked per week				
<40	2.970		0.142	0.352
>40	3.160		0.109	0.352
Business size				
1 team member	6.234		0.026	0.645
>1 team member	2.763		0.161	0.270
Funding				
Yes	0.608		0.603	0.179
No	12.240		0.001	0.600
Total	8.140	0.004	0.008	0.392

APPENDIX B

B1: INTERVIEW SCHEDULE

Personal characteristics

1. Why did you become an entrepreneur? Why did you start your own business?
2. Did you have previous experience as an entrepreneur before starting your current startup? How many years?

Physical infrastructure

1. How much time a week are you working at Orange Grove? Are you also working on your startup outside Orange Grove?
2. How important is the working space for your startup?
3. Do you think Orange Grove has a positive entrepreneurial climate? Why?
4. What is your general opinion about the Orange Grove working space?
5. What could Orange Grove do better regarding the working space according to you? Suggestions?

Networking

1. Did you meet any network relations via Orange Grove? If yes, what kind of? (social network / professional network / linking multinationals / politics)
2. How important are the networking events for your startup?
3. What could OG do better regarding networking for your business? Suggestions?

Education

3. How much time do you spend on participating at Orange Grove events?
4. What is your opinion about the seminars Orange Grove?
5. Did you participated to the introduction bootcamp? Was it helpful for you?
6. Which kind of seminars do value as most useful for you? And what as less useful?
7. In what way is Orange Grove improving your entrepreneurial skills? For example, business plan?
8. Do you have any suggestions to make the seminars more valuable for you?

Mentoring

9. Do you have a mentor? What is your opinion about the mentoring program of OG? In what ways is your mentor helping you?
10. What is your opinion about the Entrepreneur in Residence? Is it useful for you? In what way is he helping you?
11. What are the strongest and the less strongest points of the mentoring program according to you?
12. Do you have any suggestions to make the mentoring program more valuable for you?

Membership duration

13. How long have you been in Orange Grove?
14. Why did you decide to become member at Orange Grove?
15. Why are still member of Orange Grove?

16. Do you think that your startup would be the same if you never entered Orange Grove? Why?
17. Is your startup currently able to sustain in the market on the long term?
18. Do you think that Orange Grove startups have more chance to survive than startups who were never part of OG? Why?

Other suggestions

19. What do you consider as most valuable service from OG for your startup? (programs, the Squeeze, publicity, the working space)
20. What do you consider as less service from OG for your startup? (programs, the Squeeze, publicity, the working space)

Thank you for your participance!

B2: SURVEY QUESTIONS (CONDUCTED ONLINE IN SEPTEMBER 2017, IN COORPORATION WITH THE DUTCH EMBASSY IN ATHENS)

1. When did you join OG?*

- (•) 1th Application Round (September 2013)
- ( ) 2th Application Round (November 2013)
- ( ) 3th Application Round (March 2014)
- ( ) 4th Application Round (July 2014)
- ( ) 5th Application Round (November 2014)
- ( ) 6th Application Round (February 2015)
- ( ) 7th Application Round (October 2015)
- ( ) 8th Application Round (December 2016)
- ( ) Other, not via an Application Round
- ( ) Other, via an award
- ( ) Other, renting an OG2 space

2. Are you currently part of OG?*

- ( ) No
- ( ) Yes

3. Why did you leave OG?

- ( ) Graduated: able to sustain in the market
- ( ) Paused startup activities
- ( ) Terminated startup activities
- ( ) Lost interest (I didn't need the services anymore)
- ( ) Different expectations (not large and strong enough to continue on my own)

4. How long have you been part of OG:*

- ( ) Less than 6 months
- ( ) 6 - 12 months
- ( ) 1 year - 1,5 years
- ( ) 1,5 years - 2 years
- ( ) More than 2 years

5. Are you part of another startup incubator/accelerator in Greece or abroad?*

- ○ No
- ○ Yes, a Greek incubator
- ○ Yes, a foreign incubator

6. The name of the other startup incubator/accelerator is:*

7. Have you participated in any other startup prior or parallel to the current one?*

- ○ Yes, parallel to the current one
- ○ Yes, prior
- ○ No, this is my first startup

8. How many startups have you participated in?*

9. How many startups are you currently involved in?*

10. Has your startup team been changed?*

- ◉ Yes
- ○ No

11. How many team members were working on your startup when you joined OG?*

- ◉ Alone
- ○ 2 – 3
- ○ 4 – 5
- ○ More than 5

12. How many team members are currently working on your startup?

- ○ Alone
- ○ 2 – 3
- ○ 4 – 5
- ○ 6 – 10
- ○ 11 – 15
- ○ 16 – 20
- ○ More than 20
- ○ Terminated activities

13. What is your core business?*

- ◉ Tech (producing and selling technological products)

- Non-tech

14. In which sector would you classify your startup? Select only the one sector which relates the most with your business.*

- Agro food
- E-commerce and marketing
- Social entrepreneurship
- Tourism
- Engineering & design
- Transport & logistics
- E-learning
- Event management
- Health, sports & wellness
- Publishing
- Fashion
- Culture
- Sustainability (renewable energy, recycling)
- Analytics
- Other (go to question 15)

15. In which other sector would you classify your startup?*

16. Has your startup been able to generate a revenue stream?*

- Yes, enough to pay infrastructure expenses or other company costs
- Yes, enough to pay infrastructure (or other company costs) and salary to founders
- Yes, enough profit to pay good salaries for the whole team (founders and employees)
- Yes, we are making a good profit
- No revenue generated

17. What is the amount of revenue (in euros) that your startup has generated ?

18. Has your startup been able to find funding?*

- Yes, public funding/subsidy (EU Horizon/ESPA etc.)
- Yes, private funding (angel/venture capital)
- No

19. What is the amount funding (in euros) that you have obtained?

20. Is your startup incorporated?

- ○ Yes, in Greece
- ○ Yes, abroad
- ○ No

22. How many hours per week do/did you spend working on your startup?*

- ○ Less than 10 hours
- ○ 10-20 hours
- ○ 21-30 hours
- ○ 31-40 hours
- ○ More than 40 hours
- ○ Terminated startup activities

23. How many hours per week do/did you spend working at the OG co-working space?*

- ○ Less than 10 hours
- ○ 10-20 hours
- ○ 21-30 hours
- ◉ 31-40 hours
- ○ More than 40 hours

24. How many times did you participate to the seminars/workshops of OG?*

- ○ Never
- ○ 1-3 times
- ○ 4-6 times
- ○ 7-9 times
- ○ 10 or more times

25. To what kind of seminars/workshops of OG did you participate? You can select more than one.*

- ☐ Agro food
- ☐ E-commerce and marketing
- ☐ Social entrepreneurship
- ☐ Tourism
- ☐ Engineering & design
- ☐ Transport & logistics

- [ ] E-learning
- [ ] Event management
- [ ] Health, sports & wellness
- [ ] Publishing
- [ ] Fashion
- [ ] Culture
- [ ] Sustainability (renewable energy, recycling)
- [ ] Analytics
- [ ] Other
- [ ] I didn't participate to a seminar/workshop

26. What kind of seminars/workshops do you prefer more in the future?*

27. Did participate to the introduction bootcamp of OG?*

- ○ Yes
- ○ No

28. To which bootcamp did you participate?*

- ○ The agro bootcamp (Wageningen)
- ○ The general bootcamp (Amsterdam/Delft)
- ○ I didn't participate to the bootcamp

29. How many times did you participate to the one-on-ones of OG?*

- ◉ Never
- ○ 1-3 times
- ○ 4-6 times
- ○ 7-9 times
- ○ 10 or more times

30. To which one-on-ones did you participate?*

31. Did/do you have a mentor of OG?*

- ○ Yes
- ○ No

32. How many times did you have contact with your mentor of OG?*

Never 1-3 times 4-6 times 7-9 times 10 or more times

33. How many times did you have contact with the Entrepreneur in Residence of OG?*

Never 1-3 times 4-6 times 7-9 times 10 or more times

34. Which Entrepreneur in Residence did you have contact with?*

35. How many times did you participate to the community building events of OG (i.e. Orange Fridays)?*

Never 1-3 times 4-6 times 7-9 times 10 or more times

36. At which community building events of OG did you participate?*

37. What kind of community building events would you like to happen in the future:*

38. How would you rate the level of the events organized at Orange Grove? Select your choice by putting an X in the box.

Seminars/workshops*

Terrible Poor Average Good Excellent

Bootcamps*

Terrible Poor Average Good Excellent

One-on-ones*

Terrible Poor Average Good Excellent

Mentoring*

Terrible Poor Average Good Excellent

Entrepreneur in Residence*

Terrible Poor Average Good Excellent

Community building events*

Terrible Poor Average Good Excellent

39. How many of the contacts that you have met through Orange Grove were important for your startup?

Other start-uppers*

○ 0 ○ 1-5 ○ 6-10 ○ 11-15 ○ 16-20 ○ 21-25 ○ >25

Investors

○ 0 ○ 1-5 ○ 6-10 ○ 11-15 ○ 16-20 ○ 21-25 ○ >25

Private*

○ 0 ○ 1-5 ○ 6-10 ○ 11-15 ○ 16-20 ○ 21-25 ○ >25

Greek public sector*

○ 0 ○ 1-5 ○ 6-10 ○ 11-15 ○ 16-20 ○ 21-25 ○ >25

Foreign public sector*

○ 0 ○ 1-5 ○ 6-10 ○ 11-15 ○ 16-20 ○ 21-25 ○ >25

40. Did you meet other important contacts for your startup through Orange Grove?*

○ No
○ Yes

41. Have you gained publicity through Orange Grove?*

○ Yes
◉ No

43. Have you ever offered your knowledge and services to Orange Grove?*

○ Yes
○ No

Personal characteristics

45. What is your gender?*

- ○ Male
- ○ Female

46. What is your age?*

- ○ 18-25
- ○ 26-35
- ○ 36 – 45
- ○ 45+

47. What is your nationality?*

- ○ Greek
- ○ Non-Greek / European
- ○ Non-Greek / Non-European
- ○ Half-Greek

48. What is your educational background?*

- ○ High school
- ○ Greek TEI
- ○ Greek AEI
- ○ University Bachelor degree
- ◉ University Master degree
- ○ PhD

49. Have you studied abroad (out of Greece)?*

- ○ Yes
- ○ No

50. What is your professional situation:*

- ☐ Full-time start-up
- ☐ Part-time start-up
- ☐ Full-time job
- ☐ Part-time job
- ☐ Freelancer
- ☐ Student

☐ Unemployed

51. Why did you become an entrepreneur?*

○ Necessity-driven (no other job opportunity than starting my own business)
◉ Opportunity-driven (I choose to be entrepreneur/part of a startup)

52. Do you have entrepreneurial friends or family in your surrounding who stimulated you to become an entrepreneur?*

○ Yes ○ No

53. Do you have a connection with the Netherlands*

○ Yes, I already did before OG
○ Yes, I have a connection since I joined OG
○ Yes, I have the Dutch nationality
○ No

54. What is your connection with the Netherlands?*

55. How far do you live from Orange Grove?*

○ Within 10 km
○ Within 20 km
○ Within 30 km
○ Within 50 km
○ More than 50 km

56. How long does it take for you to travel to Orange Grove?*

○ 15 minutes
○ 30 minutes
○ 45 minutes
○ 1 hour
○ More than 1 hour

57. Do you have any suggestions to help improve our community and services