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# ANALYSIS OF THE IMPACT OF SUPPORT ORGANISATIONS ON START-UP DEVELOPMENT

**Master Thesis**

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# PARAMOS ORGANIZACIJŲ ĮTAKOS STARTUOLIŲ VYSTYMUISI TYRIMAS

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# CONTENT

# INTRODUCTION

Nowadays, a lot of young people tend to choose a conventional job rather than creating their own business. This phenomenon arises because of the low unemployment rates, which let youngsters to choose between various offers from different employers. Another thing which has a massive impact and provokes a lot of doubts before starting to create a business is the risk of many sanctions and bureaucracy. Also, young people do not like to deal with stress and try to isolate themselves from it as much as possible, which makes it easier to work for somebody and do not think about the work after working hours. The biggest change happened in the perception of work - now people work to live, but they do not live to work (Pavlak, Petru, 2018).

In the 1990s, the situation was totally different. As nowadays there is a lack of motivation between students to start their own business, earlier people had higher intent to start their own business. Why did this happened and what changed? The conducted survey by Pavlak, in 2014, revealed that the environment has the huge impact on establishing small and medium sized companies. One of the reasons is the globalization. It is becoming one of the biggest threats for some companies, also, the competitive pressures of foreign companies, their technological advantages and possessed capital (Pavlak, Petru, 2018).

The main obstacle in the process of creating a start-up is the laziness of youngsters. The current generation got spoilt by the welfare of nowadays society and this feeling of safety and certainty does not encourage them to take any personal effort in creating something by themselves. Of course, for the brave ones, who want to take care of their faith by their own hands, there is a way to start their own business - by start building a start-up.

Start-up has a lot of different definitions and meanings. One of the most precise and common criteria is the phase of business development. Start-up mostly is defined as a new, yet-to-be established business grounded by innovative business model and financed by start-up capital (Hathaway, 2016). Other determinations do not take growth phase into account and identify the start-up as a scalable and repeatable business model (Blank, 2010). Another very important characteristic of every start-up business is a very high degree of risks associated with instability of the environment and entrepreneurial spirit. These factors are mainly connected with continuous growth of industry and business environment (Kupec, 2018).

The business model of prosperous start-up is based on scalability, repeatability and innovation. These three key parts of successful working of star-up systems is very important. Scalability means that a business pattern is able to operate with growing volume of inputs. Repeatability means that a business

is able to apply fundamental strengths and advantages of an organisation in fresh conditions in order to grow and expand further. And innovation if formed from prosperous production, adjustments and the usage of progress in social and economic sectors (Pavlak, Petru, 2018). The recommendation of experts is to construct a reliable foundation, scalable enterprise solutions, strategical planning and reliable core strengths, most importantly - to have a unique competitive advantage and to be patient (LeBlanc, 2018).

The phenomenon of a start-up is becoming more and more popular and well-known by the public. The key to a successful start-up is a good idea. What else is very important? The energy, courage, patience, passion, a lot of persistence, ability to count and build something practical and big starting from those little thoughts in the head. There are a lot of elements in start-up environment and ecosystem, which can help to accelerate the business to the next level, such as: co-working, networking, crowdsourcing, consulting, incubators, crowdfunding, banking, accelerators, investing and etc. The only thing that a person needs to do - to start using them (Panuška, 2018).

## Topic – THE IMPACT OF SUPPORT ORGANISATIONS ON START-UP DEVELOPMENT

**Topicality of the research.** Every country's market place has different problems and needs. When each problem rises the first taken actions are "solving the problem". The same pro-type is used in start-up environment. First of all, newly emerged start-up business models aim to create a viable business model in order to meet the problems and needs of a marketplace. As all things in life have stages, subparts, components and etc., the same structure can be adapted to start-ups. In order to systemize, create and scale new start-up companies the start-up ecosystem model should be applied.

With an allusion to numerous scientists such as Pavlak and Petru (2018), Lee and Kim (2017), Gstraunthaler and Cramer (2012), it can be concluded that various authors analyze and find different aspects of support organisations importance on different start-up businesses. Nevertheless, scientific literature a bit lacks the information about how each subpart of support organisations help for building a start-up. Also, most scientific research recognizes financial help as the most important part and making the biggest influence on start-up ecosystem, while other type of help, such as incubators, co-working spaces and etc., are forgotten. As David Millar, the Techx director, said about start-up incubator: "We're taking what would normally take them two to three years and cramming into sixteen weeks. We're here to set the companies up for success and future investment." (2018).

**The scientific problem** is how to define the model of support organisations in start-up ecosystem environment and evaluate the impact of support organisations on start-up ecosystem, stat-up atmosphere and development.

**The aim of the research** is to understand how different support organisations impact star-up ecosystems environment, how it can help in building and developing start-ups. Also, to evaluate the significance of each support organisation and identify the opportunities for future improvement of efficient start-up building environment.

**The object of the research** is the analysis of the support organisations importance and impact on start-up ecosystem and possibilities for improvement.

**The objectives of the research:**

1) To analyse the scientific literature on the topic of support organisations impact on start-up development and define the model of an efficient usage of support organisations in start-up environment;
2) To carry out the competitive analysis of the main indicators of support organisations impact on start-up development;
3) To prepare methodological part in accordance to the reviewed literature, in order to manage upcoming research;
4) To carry out the research in order to understand the impact support organisations on start-up development;
5) To analyse the received results of this research, compare them with information provided in the theoretical part and discuss aspects of support organisations importance in star-up development.

***The methodology of the research*** **-** Theoretical analysis was done by reviewing scientific articles and literature. This research was accomplished by using descriptive statistics research design. The quantitative research method was used, as the aim the research was to explore the influence of different relationships and factors. Data was analysed and investigated by using IBM SPSS software. All data was collected by using online survey method, which means that non–probability sampling method and convenient sampling was used/ applied. Unfortunately, not all respondents of the survey were included while the analysis of gathered data was made. Some respondents completed the questionnaire partially or have not used any stat-up support help or services, so their answers were not used in the further research.

***Research results*** **–** All constructs of the survey – performance, effectiveness and importance were affected by start-up support organisations help. There are a lot of factors which positively influence start-up growth and development. One of the key determinants is start-up support organisations, providing the opportunity to get various help and advices. The research revealed some interesting insights showing differences between younger and older people's perception regarding how helpful start-up support organisations are. Research also highlighted differences between men and women evaluation of factors which influence the start-up development and growth. The main conclusions can be made, that start-up support organisations have positive impact on start-up development and growth.

***Research limitations*** **-** This research refers on a limited quantity of literature sources and it might not be enough to truly validate the findings. Also, only a few start-up development factors were chosen for this research, of course there can be more elements influencing the start-up growth and development. Not all existing elements were discussed in this Master thesis and not all elements were tested in the questionnaire (as the survey would become too long and there would be too many questions for a respondent to answer which would require more time to fill in and nowadays people are not really motivated to give their time for surveys). Another very significant limitation of this research – none of the findings can be generalized for all the people on earth, as the sample of respondents cannot be adapted for all population. According to the population size formula, which is required the sample size was not sufficient for it to accordingly represent all population. The number of respondents was reliable and large enough in the case of comparison with similar questionnaires and their average number of respondents used in the research. Also, it can be true that some of the respondents kept their true opinions in secret and have not revealed it openly and it is also possible that some respondents might even lied in the survey. For example, they might have marked that support organisations helped more than they did for real or they did not know the true numbers about employees, sales and etc., so they just guessed. As the questionnaire was mostly distributed through Lithuanian channels, and survey questions were in English language it might happen that some respondents did not understand the questions correctly or had some misunderstandings or inaccuracies.

***Structure of the paper*** **-** This Master thesis consists of three main parts. The first part covers theoretical assumptions, which are analysed and reviewed. The explored literature is provided in such order which helps to understand theoretical roots about start-ups and their environment from very beginning, the nature of start-up creation, start-up environment, start-up ecosystem and start-up development. It helps to more deeply understand the main aspirations, motives, perceptions and demographic differences. The description of how different variables affect start-up development and growth are provided in this research. The second part of this Master thesis covers methodological section, it provides theoretical framework and suggests hypotheses for the empirical research. Also, it determines detailed techniques for research design. Third part of this Master thesis represents the results of statistical analysis. It provides the collected information whether suggested hypotheses were confirmed or rejected and provides some conclusions. Conclusions are formed in correspondence with research limitations. The list of used literature and annexes are provided in the end of this Master thesis.

# 1. LITERATURE REVIEW

## 1.1 Business ecosystem

The ecosystem business theory appeals to an economic surrounding sustained by the co-operation of individuals and stakeholders. Nowadays, it is also broadly adopted by the industry of high-tech (Moore, 1996; Zahra & Nambisan, 2012). The idea behind this ecosystem tool is to offer new business opportunities and perspectives to companies which would help to convert their strategies in order to assist better in the emphasizing their own interests and endorsing their business environment (Li, 2009; Bharadwaj, El Sawy, Pavlou and Venkatraman, 2013). Also, Moore (1993) has emphasized that in a business ecosystem firms develop innovating abilities with other businesses, create new products and deliver various services to consumers in order to drive innovation.

Nowadays, the start-ups of high-tech are emerging all over the world. Most importantly they empower the national economies. In order to develop a sustainable environment for a start-up, business ecosystems play a valid role (Lee & Lee, 2010). As the technology based start-ups grew enormously it became the core driving force for new information economy (Herrmann, Marmer, Dogrultan, & Holtschke, 2012). Also, sharp growth of the start-up ecosystems carried a huge impact for global economy (Kim, 2014). This is why it is very important and crucial to understand start-up business ecosystem (Han, 2003). Start-up ecosystem consists of various stakeholders, like inventors, founders, end users, content providers, venture capitalists, angel investors, marketers, planners. All stakeholders co-operate as a system in order to set up new start-up businesses (Lee, 2012).

According to Beer (1964) business systems can be compared to biological systems, it underlines that industrial institution turn out to be an entity that react to business environment. From the ecological perspective economy is not understood as a machine, according to the Rothschild (2004) economy is the best described as a living, developing and evolving ecosystem. The concept of the ecosystem which emerged from a biological concept started to be used in social science and business fields from 1980s (Kilduff & Tsai, 2003) and gradually it emerged as a key determinant in start-up companies' environment (Schwab, Porter, & Martin, 2007).

The first proposition of strategic concept of a "business ecosystem" was proposed by Moore in 1993. This concept recently was broadly adopted in the ICT (Information and Communications Technology) industry especially. The definition of business ecosystem by Moore sounded like this - "an economic community supported by a foundation of interacting organisations and individuals — the organisms of the business world" (Moore, 1996). This definition expresses the idea that it is very important for companies to develop and maintain mutual relationships with stakeholders, such as

demanders, suppliers and even competitors. The main logic and key idea of the business ecosystem is the study of mutual relationships in between surrounding industry environment and company, like in biological environment (Bharadwaj et al., 2013; Han, Lee & Kim, 2007).

"Business ecology" according to the Townsend (2009) represents the relationship between business and the environment it is in. The crucial aim of business ecology is to be consistent within ecological synchronization and ability to integrate the business with the position that it uses and impacts (Lee, M. Lee and Kim, 2017). In modern business ecosystem, companies tend to hold on the right position, like an ecological species make through a natural ecosystem. The same with a variety of stakeholders, as the ecosystem develops - they try to adjust themselves and synchronize with evolving ecosystem (Gobble, 2014).

## 1.2 Start-up ecosystem

Business ecosystems operate as a powerful sponsor of new ventures (for the companies that exist six years or less) (Zahra, 2007). In the business ecosystem environment, a lot of new start-ups are created by well entrenched firms. Mostly all created start-ups, which are sponsored by the company are initiated in order to analyze or examine possibilities within ecosystem (Zahra & Nambisan, 2012). In particular, within technological and experimental support (Keil, McGrath, & Tukiainen, 2009). Especially, the ecosystems of businesses for entrepreneurs face a unique collection of challenges in order to balance between priorities and goals of a new venture (Nambisan & Baron, 2013).

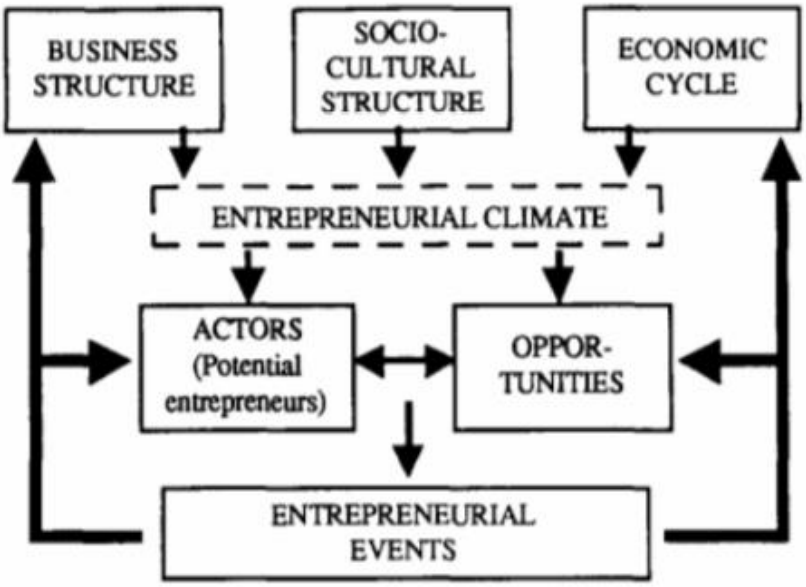
Bahrami and Evans (2000) declare that the ultimate dimensions of the he Silicon Valley ecosystem are as follows: "1. Venture capital; 2. A talent pool of knowledgeable professionals; 3. Universities and research institutions; 4. professional service infrastructure, and 5. customers and lead users of innovation". Bahrami and Evans (2000) proposed model of ecosystem adopt all the key factors that Mathews (1997) considers to be of a great importance, but they also include the receptive customers.

Business ecosystem research has been underway for several years. Since start-ups are related to many stakeholders, their nature requires research and analysis of each factor and relationship. As an existing business ecosystem creates an environment that fosters most entrepreneurial efforts of star-ups, it may limit others' aspirations (Lee, M. Lee and Kim, 2017).

Spilling's proposed model (1996) starts with an explication of the conceptual structure in order to analyse the economic procedures that clearly show the interrelation between entrepreneurial events and environmental factors (illustrated in Figure 1). In the article Spilling presents the conception of an entrepreneurial business system with a complex system of roles, actors and environmental elements that

interact in order to identify entrepreneurial outcomes. Business activity is based on knowledge, competence and role models that are embedded in these structures. Business activity is based on competence knowledge and role patterns that are introduced in these structures. In the short term, the elements of the environment are constant, and in the long run, these factors may change partially due to the entrepreneurial events in the region. The entrepreneurial system consists of different factors, such as: roles, actors, various organisations and elements of the environment (Lee, M. Lee and Kim, 2017).

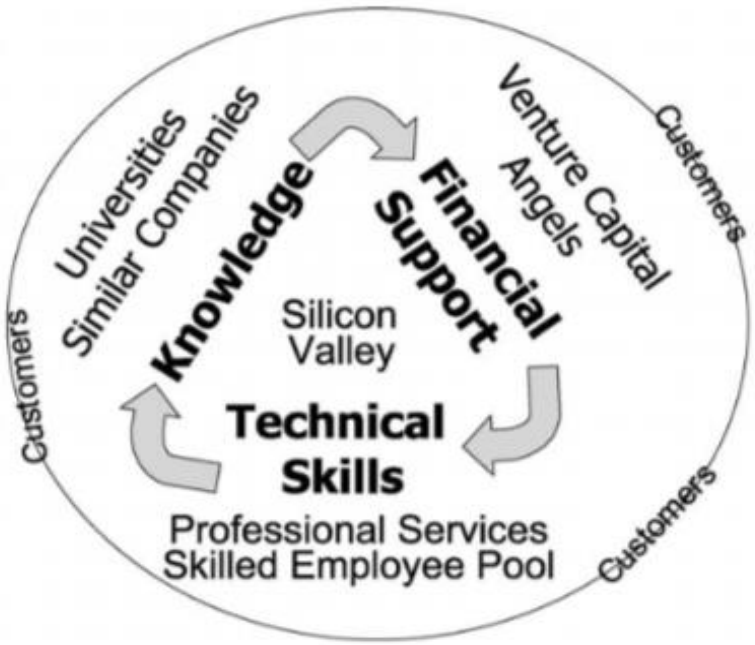
*Figure 1*. Model of interactions among environmental factors and entrepreneurial events.




*Source: Spilling (1996)*

The proposition of Zacharakis et al. (2003) - an "ecosystem perspective" to explore the progress and development of the Internet industry. This perspective of ecosystem helps to understand where other future technological innovations will emerge (Lee, M. Lee and Kim, 2017). Zacharakis and his colleagues say that Internet technologies are being developed by progress in Internet software companies, Internet service providers, Internet infrastructure, hardware and also, even e-commerce enterprises (Zacharakis et al., 2003).

*Figure 2.* Ecosystem perspective.




*Source: Zacharakis et al. (2003)*

Another start-up ecosystem idea is presented by Isenberg. He stipulates six key areas of entrepreneurship ecosystems (Isenberg, 2011): "1. Policy reform and incentive planning; 2. Venture capital funds and angel investment at the outset; 3. Social norms becoming pro-entrepreneurship; 4. Strong support mechanisms strengthening the infrastructure; 5. Entrepreneurship education being accelerated and 6. Access to regional markets and multinationals". The entrepreneurship ecosystem project by Babson is designed to develop an innovative method for applying entrepreneurship as an effective methodology and strategy for results-oriented economic development (Isenberg, 2011).

*Figure 3.* Domains of the entrepreneurship ecosystem.


*Source: Isenberg (2011)*

### 1.1.3 Limitations of start-up ecosystem models

As discussed before, there are many different definitions of business ecosystems and models that aspire to explain the environment. Nevertheless, while these present models have explained the ecosystem based on different factors and areas, they are limited while analysing and investigating the whole business ecosystem of start-ups. Most of available and present studies analyse the elements using a static method rather than a dynamic approach. So, time series data analysis empowers one to discover the critical path, it is difficult to do while using the existing model and the SLC (start-up life cycle) description. It is inadequate, especially for each country's business ecosystem comparison, when analysed business cycle is essential. Beyond the SLC perspective, using a dynamic attitude, it makes it difficult to draw up a future business plan and policy of a start-up (McGrath, 2010).

In addition, there is no explication of the period of danger, which is one of the most important portion of information related to survival of the start-up business. If businesses, especially new businesses like start-ups do not control these risks, they can go bankrupt, despite other elements (Van Gelderen, Thurik and Bosma, 2005). Consequently, the purpose of this study is to investigate the initial start-up business ecosystem using a dynamic approach to better compare the initial ecosystems of each nation. This study accordingly constructs the SLC composition, which involve a technology optimization (R&D) phase, a fundraising phase and an exit phase, based on overcoming challenges at

each stage of development, including the Valley of Death and the Darwin Sea, to take into account the macroscopic dynamic flow and quantitative business start-up ecosystems comparisons (Lee, M. Lee and Kim, 2017).

## 1.2 SUPPORT ORGANISATIONS OF START-UP ECOSYSTEM

### 1.2.1 Universities

Entrepreneurship allows significant professional opportunities, giving possibility to appreciate autonomy, improve various competences, obtain economical gain and play a part in economic progress (Shirokova, Tsukanova, 2017). From their perspective, higher education institutions around the world have substantially developed their curricular and co-curricular contributions in entrepreneurship (Dickson et al., 2008; Morris et al., 2013). Still, the quantity of college students launching different businesses has not shown proportional growth. (Sieger et al., 2014). Comparably small numbers of new student start-ups have been associated with the lack of economical means, enterprise related competences and understanding, reinforcement systems, advisership and relations to specialists' chains (Kew et al., 2013). Furthermore, there is proof, maybe because of these tendencies that universities are starting to revise the efficiency of their conventional viewpoints to entrepreneurialism (Duval-Couetil, 2013; Hoskisson et al., 2011).

Indications also shows that determination to seek entrepreneurial direction can be simplified by favourable surroundings (Lee and Peterson, 2000; Toledano and Urbano, 2008). These entrepreneurial ecosystems occur in different layers - national, regional, and communities' whereas latest studies have also analysed university-level ecosystems (Fetters et al., 2010). These educational institutions proceed in two levels. They act as one of the most important aspects within regional ecosystems and function as their own inner ecosystems (Isenberg, 2011). In that kind of internal level, the essence of the academic setting, its common valuations and standards, its management and the inner structure incorporating training programs would appear like relevant contributors in elevating and cultivating student entrepreneurial possibilities (Rideout, Gray, 2013). Simultaneously contemporary educational institutions differ in the scope to witch entrepreneurship has been included as a collegiate subject or fundamental field of exploration, and in their comparative financing in expanding educational atmosphere that promotes the pursuance of entrepreneurial practice (Matlay, 2008; Morris et al., 2013).

The university context would look like a numerous prospective source of the information and practice, opportunities to find, create contracts, possibilities for responsible practice, and even economic

assets that are important to entrepreneurial successfulness (Guenther and Wagner, 2008; Zhao et al., 2005). When adjusted in a university context, central elements can involve entrepreneurship class and degree contributions, commitment of alumni entrepreneurs, student incubators, resources for prototype elaboration, spread financing for to university start-ups, technical hand over resources, and academic examination, testing (Rideout and Gray, 2013).

### 1.2.2 Incubators

As Baum et al. (2000) state that only less than one third of start-ups pass their early stages and develop into companies. This stage of start-ups collapse can be called a "valley of death" (Hudson and Khazragui, 2013). As a young and starting company have a knowledge gap, lack of awareness about their resources. It can be declared as "unconscious incompetents" to survive (van Weele, van Rijnsoever and Nauta, 2017). Moreover, there are many other reasons which can cause start-up failure, such as lack of reputation, networks and connections, reliability and credibility, intentions to innovate or marketing of products. This kind of knowledge shortage can be described as "the liability of newness" and "the smallness effects" (J. A. C. Baum et al., 2000; Lasrado et al., 2016). Also, another very important and essential factor for star-up survivability became environmental conditions which are surrounding the start-up environment (Ayatse, Kwahar and Lyortsuun, 2017).

In order to survive in the market most of the start-ups join support systems, such as business incubators or business accelerators (van Weele et al., 2017). Business incubator can be described as an institution which was created in order to help to start-ups development (Bruneel, Ratinho, Clarysse and Groen, 2012; Mas-Verdú, Ribeiro-Soriano and Roig-Tierno, 2015; Pettersson & Götsén, 2016). Generally, business incubators grant some facilities and support, like coaching, consultation, office space, trainings, networking access and funding (Bruneel et al., 2012; Hansen, Chesbrough, Nohria, and Sull, 2000; Lasrado et al., 2016). This kind of services and facilities are created in order to encourage start-ups in each of their development stages and create a more stable path for them to develop and survive in the future, when they will graduate from the business incubation programs.

Business incubators are not only helping the country in economic development, but also their main contribution is the improvement of start-up industry and development of the ecosystem (Ayatse et al., 2017). Business incubators stimulate the economic growth of a country by assisting and encouraging new businesses and ventures creation, like start-ups. Nevertheless, how much an incubator can help to reach company goals depends on the amount of star-up that are willing to join and attend in business incubation programs.

Incubators settle a longer duration of programs, like from one year to five years. It also starts from the early start-up stage till their late stage of ventures. Over some period of time, there were developed several business incubators archetypes (or models). The most common incubators archetypes are regional business incubators, virtual business incubators, company- internal incubators, university incubators and independent commercial business incubators (Barbero, Casillas, Ramos and Guitar, 2012).

Some researches have been done in order to comprehend the impacts of business incubators on start-up execution, its performance and how it could be measured (Ayatse et al., 2017; Kohler, 2016; Lasrado et al., 2016; Mas-Verdú et al., 2015). Researchers are still discussing about the positive influence of business incubators, while it is proved that activities of business incubation and support helps for start-ups in some stages of their evolution (Ayatse et al., 2017). Business incubators should help in the start-up performance and ecosystem improvement processes.

There are a lot of factors which can influence how a start-up perceives and reacts to incubation programs. As a start-up is suffering from being small and new in the market, start-up background and characteristics can help to determine how a star-up company will behave in incubation program. Some of the attributes that can be related in defining start-up characteristics are experience in an industry, ability to work in a team, skills in the field of the star-up, network access and the strategy of a start-up (Davidsson, Steffens and Gordon, 2011; Schwartz, 2011). Also, environmental factors play an important role in start-up incubation program implementation and the characteristic of a start-up itself (Cooper, 1993).

The behaviour of a start-up while participating in business incubation programs affects its performance during the attendance in business incubator programs and after it. It depends on how strongly start-ups participate in the activities provided by business incubation programs, how strongly they apply the knowledge to the needs and conditions of their start-up and how strongly they comprehend the satisfaction within the program (Albort-Morant and Oghazi, 2016). The inner characteristic, like the realization of effectiveness, usefulness and understanding the importance of incubator activities plays a valid role in how a star-up engages in incubator program. These factors will have an impact on performance of a start-up itself (Cheng & Schaeffer, 2011).

### 1.2.3 Accelerators

In the last decade, various business acceleration programs have appeared as a new tool in order to support start-ups ecosystems and propose a broad scope of possibilities for innovation in the market

(Miller and Bond, 2011). YCombinator - the first accelerator created by Paul Graham began to work in the US, in 2005. Later, in 2007, David Cohen and Brad Feld founded 'TechStars', with the idea in mind of changing and transforming the ecosystems of new businesses through the acceleration model. In recent years, based on the example of these two programs, many other programs have emerged.

Business accelerators are programs that last 3-6 months and their main goal is to help new businesses in early development stage and to bring their products to the market place (S. Dempwolf, J. Auer, and M. D'Ippolito, 2014). These programs provide support services for new ventures, like office spaces, small amounts of financial support, mentoring and coaching, setting right and thoughtful education plans and programs. One of the main reasons and a crucial factor of participating in a business acceleration program is the mentorship, which is granted by really high-quality mentors.

Another very important opportunity, which also inspires start-up teams to participate in such programs, is the opportunity of networking. It is provided by various events organized in acceleration programs, for example - "Demo Day", which is designed in order to connect possible investors with start-ups (S. Dempwolf, J. Auer, and M. D'Ippolito, 2014). Another feature of acceleration programs that it supports a group of companies at the same time. The creation of valuable networks, successful entrepreneurship techniques created by business accelerators have a positive effect on start-up teams (Miller and Bond, 2011).

As business accelerators are becoming more and more popular and the number of business acceleration programs is increasing, it is becoming harder to distinguish business incubators and business accelerators. The analysis of NBIA (National Business Incubation Association) obtained a helpful list about the shared characteristics of accelerators and incubators. The analysis specifies that some of their differences lie in the intensity, in the nature of characteristics, rather than their absence or participation in the program (Cohen and Hochberg, 2013). NBIA describes accelerators as being concentrated on Web-based technologies and designed to quickly upgrade start-ups from one stage to another one. While the main purpose of incubators is to move enterprises towards mature and self-sustaining business. Also, another very important factor is that accelerator programs most often grant the funding in exchange for some part of equity (of future start-up profit) while incubator programs rarely directly invest to their star-ups (S. Dempwolf, J. Auer and M. D'Ippolito, 2014). The main differences are provided in the 16 below.

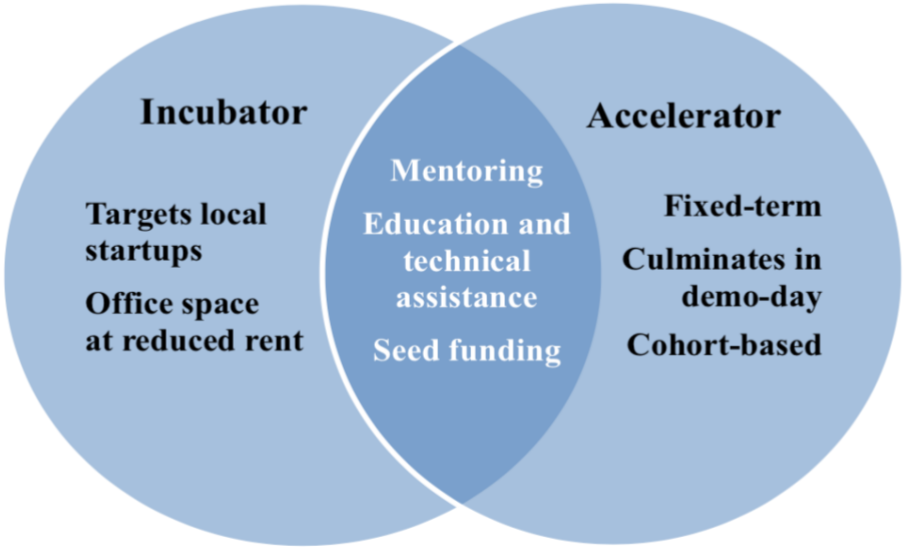
*Figure 4.* What are the new seed or venture accelerators

| Characteristics | Incubators | Accelerators |
|---|---|---|
| **Clients** | All kinds, including science-based businesses (biotech, medical devices, nanotechnology, clean energy, etc.) and nontechnology; all ages and genders; includes those with previous experience in an industry or sector. | Web-based, mobile apps, social networking, gaming, cloud-based, software, etc.; firms that do not require significant immediate investment or proof of concept; primarily youthful, often male technology enthusiasts, gamers, and hackers. |
| **Selection Process** | Competitive selection, mostly from the local community. | Competitive selection of firms from wide regions or even nationally (or globally). |
| **Terms of Assistance** | 1 to 5 or more years (33 months on average) | Generally 1- to 3-month boot camps |
| **Services** | Offers access to management and other consulting, specialized intellectual property and networks of experienced entrepreneurs; helps businesses mature to self-sustaining or high-growth stage; helps entrepreneurs round out skills, develop a management team, and, often, obtain external financing. | "Fast-test" validation of ideas; opportunities to create a functioning beta and find initial customers; linkage of entrepreneurs to business consulting and experienced entrepreneurs in the Web or mobile apps space; assistance in preparing pitches to try to obtain follow-up investment. |
| **Investment** | Usually does not have funds to invest directly in the company; more frequently than not, does not take equity. | Invests $18,000 to $25,000 in teams of co-founders; takes equity in every investee (usually 4 to 8 percent). |

*Source: Excepts from Atkins, D. (2011 )*

Another determination which is also helping in excluding which dimensions of incubator and accelerator programs are different and more typical for one or another and which aspects they have in common. The diagram of Venn explains the overlapping and unique characteristics of these two programs. It can be concluded that accelerator programs tend to be for profit, and the incubator program tendency is to be non-profit (S. Dempwolf, J. Auer, and M. D'Ippolito, 2014).

*Figure 5*. Venn diagram of incubator and accelerator characteristics




*Source: S. Dempwolf, J. Auer, and M. D'Ippolito, 2014*

The value proposition defines the overall package of services, costs, products and requirements which are associated with the seed capital provided to start-ups. Value proposition explains business aspects that produce value for customer, explains how customers experience that value and what kind of choices and alternatives that customer has in the marketplace. Value proposition can be divided into five parts - "(1) customer market, (2) activities, (3) rewards, (4) value experience, and (5) alternatives and differentiation."(S. Dempwolf, J. Auer, and M. D'Ippolito, 2014).

**1.** In customer market part accelerators focus on new product evolution and progress which occurs at the shift from an invention to a final, commercial product.

**2.** In activity part accelerator programs propose a bundle of services (like brokerage services, technical assistance and mentoring and etc.) for the start-ups in exchange for their stake of equity.

**3.** In rewards part accelerator programs propose some awards for start-ups, like the ability to acquire some specialized knowledge, initial public offering, additional capital to continue to grow to the next stage of the development.

**4.** In value experience part accelerator programs introduce various value experiences to different markets.

**5.** In alternatives and differentiation part accelerator programs offers relatively few alternatives as they are operating in specialized niche (S. Dempwolf, J. Auer, and M. D'Ippolito, 2014).

The business model of acceleration program describes how accelerator is shaped in order to achieve its goals, pricing and income (profit) strategies. Mostly all accelerators up until today are operating in software, mobile applications area or in in other words in an industry which is described as having relatively low capital enforcement and short duration of prototyping (S. Dempwolf, J. Auer, and M. D'Ippolito, 2014). Concentration on technology is a key element which have an impact on business model of accelerator. It distinguishes the accelerator programs from incubators and another start-up assistance organisation. Technology focus term indicates that the focus of accelerator programs on start-ups is relatively narrow in comparison with others and related technologies (Voisey et al. 2006).

### 1.2.4 Management accounting

Management accounting consists of various practices which encourage and support managers of large and well-established enterprises. It helps them to make right decisions, plans, choose proper organizing techniques and deal with control issues (Chapman, Hopwood and Shields, 2007). Most typically star-up companies can be perceived as an absolute opposite of a large and well-established organisation. Start-ups can be described as unstructured, dynamic and even chaotic organisations. This kind of companies can be defined as aspired for high growth and fast in decision making. Therefore, formal and static Management accounting methods most typically are not associated with fastly changing, unstructured and dynamic start-ups. Also, it can be concluded that management accounting is not the primary goal of start-ups entrepreneurs who want to grow and manage their start-ups (Davila, Foster, & Jia, 2010).

Management accounting is essential to well established, large corporations because it can help to take care of all complex things of big organisations. Management accounting can be divided into two main parts, because it has two main roles in a large and well-established company's coordination: 1. Decisions lightening and 2. Making influence on decisions (van Veen-Dirks, 2010). The role of the first part is significant in providing the information for managers which will help them to decide (Burns and Scapens, 2000). The methods of management accounting capture data about different activities in the company and gather it on division level or business unit level. So, management accounting empowers managers in various fields to take reasoned decisions based on topical facts (van Veen-Dirks, 2010).

The first role of management accounting seems not extremely relevant in start-up environment. In start-ups most commonly, there are only few employees, but definitely not a huge number. As start-ups are formed only from few team members and founders, the business is not divided into departments or business units. All start-up team typically are working in one shared space, all together in common environment.

The second role of behaviour guidance in large and hierarchical organisation also seems to be not particularly relevant in start-ups environment. Management accounting is mostly used to measure the accomplishments of organisations. In regard to this evaluation, the management accounting is then used to produce inducements which will encourage employees to do what supervisor expects from them. Management accounting also supports managers in creating large and complex systems of key performance indicators (KPIs), which will later on stimulate employees to seek more and motivate them in order to attain the goals of an organisation. It enables the possibility of managers to estimate the activities and analyse accomplished goals within the range of responsibility (Bisbe and Otley, 2004; M. Wouters and Wilderom, 2008). Also, budgeting systems are a significant factor second marketing accounting role. The objective of budgeting systems can be described and noticed in planning, performance management, and stimulation (Merchant, 1981). This role of management accounting also looks not very topical for start-up companies. Start-ups do not use detailed budgeting systems in order to communicate the goals of their organisation. Also, there is no need of complicated KPIs systems to motivate start-ups employees. The key motivator in start-ups is inspiring founder which motivate their employees by face-to-face communication, meaningful conversations and the feeling of being a part of innovative and fastly growing business.

After the investigation of management account roles, it seems that it is not really related with start-ups. However, there is some literature which states the opposite thing. It was discovered that adjusting management accounting methods can be valuable and can help in improvement processes and that they are valid in start-up growth processes (Davila and Foster, 2007; Davila et al., 2010). Also, some studies showed that planning techniques can help and have some valuable benefits for the start-up entrepreneurs (Delmar, 2015; Delmar & Shane, 2003).

It can be concluded that marketing accounting can be helpful in start-ups environment in different ways. It can be useful for start-ups because marketing accounting support and encourage founders with provided tools to help them to handle the managerial challenges associated with the growth of a company. As well, management accounting can help as a tool in reducing the information gap between the start-up and its external partners, such as investors. It can be helpful for founders to handle different organisational challenges which are related to fast growth of a company (Greene and Hopp, 2017).

### 1.2.5 Funding organisations

There are various options of star-ups funding. It is very important to understand the diversifying financial resources and the approachable, reasonable financial funding options in order to find the most suitable decision for start-up venture. One of the essential decisions an entrepreneur should make is to select the right and suitable financial sources option in order to fulfil particular start-up needs (Davila, Foster, & Jia, 2010).

Each start-up position is different, some start-up founders start their businesses with the money they collected and saved during the years, others select and option of using the reinvested capital from another business ventures, some entrepreneurs decide to use the money from their families, friends or to use bank loans (Wouters and Wilderom, 2008).

The easiest to get and first money a start-up founder could think about is receiving them from FFF (friends, family and fools). It can be explained pretty naturally. As most probably the first people who will hear the idea of a start-up will be persons' family and friends. From the empirical research it can be concluded that people who believe in a start-up idea and encourage a founder start a business are the ones that are closest for them (van Veen-Dirks, 2010). Thus, it would be a good idea to borrow money from them in the beginning. As in every situation researcher could discover a negative side of borrowing money from close people - the combination of personal relationships and money. This is why the term and conditions of financial commitments should be very clear.

Another reasonable option could be crowdfunding. Crowdfunding platforms are devoted for entrepreneurs which already have an existing and running start-up with some revenue streams or start-ups which require some extra capital in order to test or release new products. Crowdfunding platforms work in a way that an. entrepreneur creates a campaign in chosen crowdfunding platform and sets a funding goal, and then other people start donating the money. Later on, when the collected amount of money reaches the goal fixed by entrepreneur the money can be used (Delmar, 2015). There are two options of crowdfunding usage - reward-based, when a start-up should offer some incentives for contributors or equity-driven, when a start-up grants a part of equity in exchange for funding.

As an alternative to bank loans there is another option P2P loan (person-to-person or peer-to-peer). P2P loans most often are more personal and entrepreneurs can use them for various purposes. The model of social lending directly connects investors with borrowers in order to make the arrangements and loan application which would be suitable for both parts. In this case of P2P loans, it is easier for start-ups, because they do not have to have a running business already or a lot of capital. Only thing an entrepreneur

of a start-up should do is to take full responsibility for repayments and he/she should be willing to put private assets in exchange for the loan (Davila, Foster, & Jia, 2010).

If an entrepreneur is ready to give away a stake of a start-up in exchange for a significant amount of capital from investors - an entrepreneur should consider Angel Investors possibility. Most of the time Angel Investors are wealthy people who want to help in starting a business and make it running smoothly. Most often Angel Investors are interested not only in the start-up as a business itself, but also in the owner of a new venture. As researchers indicated, one of the most valuable parts of making a partnership with Angel Investors is valuable recommendations and advices which lead to creation of new growth opportunities (Wouters and Wilderom, 2008).

Another option to get financing is Venture Capital (VC). In Venture Capital is a group of investors which are giving money without a debt, but a start-up owner has to exchange it for a stake of start-up equity. Hands-on approach in business running processes is another liability of Venture Capital investors (Greene and Hopp, 2017). As it can be noticed from various researches start-ups that already have running businesses have a greater opportunity to get a deal from Venture Capital investors.

Of course, there are many other options to fund a start-up, like government grants (loans for small businesses), equipment financing (special investment into machinery and other equipment needed for a start-up), micro-loans (small amount of money in order to start the start-up running) and etc. Most importantly all start-up entrepreneurs should consider and rethink all possible funding opportunities before getting involved in any funding opportunity (Wouters and Wilderom, 2008).

### 1.2.6 Support networks

*Social Networks*

Networks are a very important part which helps and accelerates business creation in start-ups (Prevezer, 2001). The role of regional and community networks for green start-ups may be even more crucial. Green start-ups must trust on a circle of interested parties (e.g. community-based groups, personnel, clients) that have a sympathy and awareness of sustainability difficulties and the special constraints they face (Isaak, 2002). Green start-ups may also encounter more expenses than a common start-up (e.g. sooner enforcement of an energy management system) and can consequently take advantage significantly from the usage of networks to exchange information and costs (Ammenberg and Hjelm, 2003). Neck et al. (2004), divided the social network into formal networks (university, authorities, specialist and assistance services, capital funds, talent and major enterprises) and informal networks (friends, family members, colleagues and unofficial relations with similar contacts).

*Informal Networks*

A lot of recently created start-ups resort to informal networks for guidance, mentorship and encouragement. In the Boulder research, 67 percent of founding entrepreneurs defined the informal network as an essential part of the start-up ecosystem. Studies in industrial ecology have determined the crucial impact that persons play through their influence on physical systems and through their conduct and philosophy towards the environment (Korhonen et al., 2004).

*Formal Networks*

The formal network is supported by the existence of an academic environment involved in a research, local authority organisations, expert and assistance services (e.g. attorneys, bookkeepers, advisors, suppliers), capital sources (e.g. investors, banks), high-potential employees and big companies. In the Neck et al. study (2004), each of these components of the formal network varied in comprehended significance from 73 percent for both the university and for specialist and assistant services to only 47 percent for major companies. Altogether, the elements of the formal network are essential for the development and expansion of an entrepreneurial system.

Government provided the position that entrepreneurship is hoped to take in regional and international economies, authorities have become progressively engaged in encouraging a positive environment for entrepreneurship through levels of taxation and inducements, giving other types of favorable financial assistance (e.g. funding and grants) and minimizing the governmental bureaucracy frequently related with asking for permissions and licenses (Siegel et al., 2003). Moreover, the part that government may take in supporting an environment instrumental to the formation of a sustainable entrepreneurial system may be even more important. Advanced legislation and government collaboration (at regional and local degree) may be needed to adapt markets when market power is not enough to enforce companies to pioneer for sustainability. Governments can have a vital part in persuading innovation through agendas such as green business program competitions, remunerating companies that accomplish innovations resulting to resource preservation and endorsing the initiation of sustainable high-technology development hubs (Isaak, 2002).

Professional and support services contain entrepreneurial tax and juridical assistance, and advisors, also the presence of provider organisations that supply accesses that may go into the completed result. Professional and support services were recognized by 73 percent of the interviewees in the Boulder research as a significant element of the entrepreneurial ecosystem. Regular business start-ups ask for opinion from different specialists throughout the incubation and start-up stage and normally do not

experience too many complications seeking mentors with proficiency in their industries. Nevertheless, consultants to sustainable ventures can make obstacles for productive start-up if they do not realize the difficulties faced by these ventures (Schick et al., 2002). In addition, consultants to start-ups frequently comprehend environmental orientating to be a disadvantage to the company's possibility of development and durability due to the perceived added financial pressure (Schick et al., 2002).

## 1.3 Support systems role in start-ups environment

The study performed by Brooksbank (2008) reached the conclusion that in the environment of a start-up ecosystem, the most meaningful player, which promotes the successful path of a start-up business, is government. The declaration of Curran and Storey (2002) presented that support services of government also incorporate the direct advisory services, formal support services, like identification of new business activities, establishment of market researches, creation of innovative technologies, training and advertising techniques, also plays a valid role for successful start-up ecosystem (Bennet & Robson, 2003).

Kee et al. (2011) stated that the main reason why some start-ups fail is not lack of support from government, but hard accessibility to use the support programs. Also, researchers stated that most of the start-ups count on self-funding or private sponsorship, because of too complicated financial applications procedures and complex processes of penetration into new markets (Kee et al., 2011).

There are many reasons why financial support is very important for starting and setting up the new business, it can enlarge the production and help to recruit the best employees (Haron et al., 2013). Beck and Demirguc-Kunt (2006) state that start-up companies experience more complex and complicated barriers than more established and larger businesses. Finance related services invoke to the support that can help in accessing external source of financing, like direct financial support, venture capital and a lot more (Dwivedi and Mishra, 2013; Heydebreck et al., 2000). Finance-related services can be defined as monetary support for the start-up. This governmental and institutionally owned support like mediation with financiers, support schemes and direct support in financing innovative projects can be used by start-up entrepreneurs for starting or reinforcing the businesses (Alfredsson, 2003; Dwivedi & Mishra, 2013). The key task of the government is to improve services related to financing by strengthening them and making it easier to access it for start-up companies, to get financial help in order to contribute to their growth and development.

Ahmad and Seet (2009) have identified that the major part of start-ups that fail was caused by incapability to identify and respond to high-value market opportunities and inability to fastly take some actions when opportunities were recognized, because start-ups were not prepared for that. Also, researchers Temtime and Pansiri (2004) indicated that poor customer service, shortage of eligible marketing process studies and inappropriate demand and supply analysis also have some impact on start-up failure. In order to commercialize and sell new start-up products or services company should have at least basic marketing and business management knowledge (McKelvey and Lassen, 2013). This is why newly established start-ups often need to use consultancy services in the field of marketing, research, analysis and analytics of the potential market and of course to find some business partners in order to protect from these kinds of failures in the future (Heydebreck et al., 2000). Heydebreck et al. (2000) state that start-up ventures need more knowledge about market related services, like consultancy in marketing sphere, assistance in products and technologies marketing, network of suppliers, market opportunities, maintenance and provision of customer, distribution and commercialization management knowledge (Heydebreck et al. 2000; Kaufmann & Tödtling, 2002).

Another very important start-up support service playing a meaningful role in successful start-up development is technology related services. Intarakumnerd and Ueki (2009) state that such services like technological transfer can improve integration of technology-related services into start-up ventures. Through the collaboration with private and public agencies, universities and industries technology-related services will be able to help to increase operational business performance of start-ups and make business activities more thoughtful (SME Corp., 2014).

Technology- related services involve promotion of technological collaboration in order to form research and development which is concentrated on promotional business networking activities, knowledge commercialization, financial stimulus in development and the promotions of technology distribution (Gill and Kharas, 2015). The study of Akinruwa et al. (2013) determine technology-related services like technological consultancy, search of cooperation partners for research and development and “availability of providing infrastructure to create a conducive environment for the growth of the start-up business” (Heydebreck et al., 2000).

Heydebreck et al. (2000) study revealed that key area of support provided by government to start-ups is soft services. Therefore, soft-related support services like mentoring, networking, education, consultancy, raising awareness, training, acquiring learning capabilities and problem-solving skills are significant elements for successful start-up (Falk, 2007; Heydebreck et al., 2000). The study of Bosma, Van Praag, Thurik, and De Wit (2004) identified that when start-ups will invest more in soft skills improvement, like trainings and acquirement of information from various consulting and networking events, then starting the business, start-ups will be more successful. In Heydebreck et al. (2000) study,

soft-related services are defined as general type of support, like provision of information, comprising seminars, consulting and educational and teaching programs. Those kinds of services typically help in developing networks and enlarging know-how for start-up businesses.

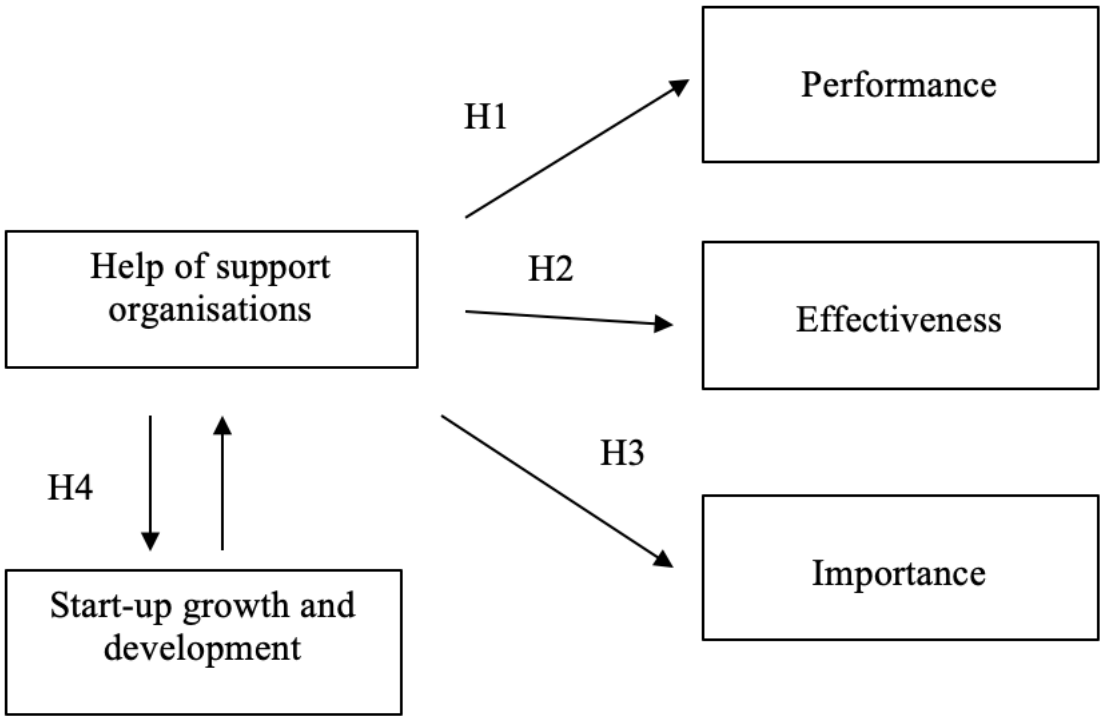
# 2. METHODOLOGICAL PART

## 2.1 Model and hypotheses

The main goal of this research is to evaluate support organisations importance and comprehension of help on start-up development.

In this section of the paper work, research model and hypotheses will be presented. Also, the explanations of the hypotheses will be granted. In compliance with the theoretical part of this paper work the model of upcoming research will be provided.

*Figure 6.* Research model.



After analysis of theoretical part and selection of appropriate hypotheses, research model was created. In the research model, which is presented above there are seven discern hypotheses. The model of hypotheses clarifies the relationship between independent and dependent variables.

The first relationship is constructed with independent variable – Help of support organisations and its influence on dependent variable Performance. Second relationship is constructed with independent variable – Help of support organisations and its influence on dependent variable Importance. Third relationship is constructed with independent variable – Help of support organisations and its influence on dependent variable Effectiveness. The fourth relationship is constructed with independent variable – Performance and its influence on dependent variable Start-up development. The fifth relationship is constructed with independent variable – Importance and its influence on dependent variable Start-up development. The sixth relationship is constructed with independent variable – Effectiveness and its influence on dependent variable Start-up development. Seventh relationship is constructed with discovering if there is a correlation between the help of support organisations and dependent variable - Start-up growth. From these considered relationships, hypotheses will be created, which will be granted and explained below.

## 2.2 Hypotheses

Hypotheses of this research can be separated into two main parts – influence of independent variables on Start-up development (hypotheses H1, H2, H3) and correlation of relationships between actual Start-up growth and usage of Support organisations (hypothesis H4).

**H1:** The help of support organisations has a positive impact on start-up performance.

Moore (1986) indicates that start-up success can be measured in many ways. Performance growth is one of the most common measures (Carland, Hoy, Boulton and Carland, 1984). The performance growth indicates the specific changes that the company feel when joining support organisations programs. As Ayatse et al. (2017) states - the measurements of performance vary: from financially related measurements to non-financial measurements. As financial indicators are not always possible due to the nature of a start-up, some non-financial factors can become an important indicators of start-up support organisations impact on start-up performance.

Performance growth effects are one of the most crucial environmental factors in new ventures life cycle and it can have a huge impact on success of a start-up (Rothaermel and Thursby, 2005; Chrisman et al., 1998). Von Zedtwitz and Grimaldi (2006) states that performance comparison is very important

in order to show various levels of competitive advantages of a start-up which used support organisations services. If competitive advantages of a start-up are lower, the possibility of a start-up to be successful is less likely. Therefore, it is very important to fully understand the possibilities a start-up have while using support organisations services. The researchers state that an industry with higher rates of opportunities to use support organisations services and resources will influence the chance of a better start-up performance which later on will have a positive impact on start-up development (Aldrich and Ruef, 2006; Churchill and Bygrave, 1989).

**H2:** The help of support organisations has a positive impact on start-up effectiveness.

The process of support organisations programs focuses on start-up participation in the process, the understanding of attendance importance, and understanding of effectiveness a support organisations programs can provide for a start-up (Rothaermel and Thursby, 2005).

Cooper (1993) model states that, support organisations will have a positive impact on start-up development in terms of start-up participation, the perception of importance, and perception of effectiveness. Also, it should have a positive impact on start-up performance. While looking to this case, the construct of start-up characteristics will be created from various variables which have influence on start-up effectiveness and it will be tested in this research.

According to the research made by Afriana (2018) - "In the effectiveness construct, it seems that the effectiveness of infrastructure services has a similar impact on the effectiveness of business support". In accordance to this case, it can be concluded that the effectiveness of business support has greater effect on start-up development. Start-up effectiveness is expected to positively influence the behaviour of a start-up in support organisations programs and the start-up eco-system (Soetanto and Jack, 2013). All items of start-up characteristics, like skill, experience, business strategy and network, seems to have a positive impact on start-up effectiveness and performance. Later on, the same effects are also expected to happen to start-up development (Rothaermel and Thursby, 2005). The objectives of this research are to test the positive impact of effectiveness as mediating element on start-up development.

**H3:** The help of support organisations has a positive impact on start-up importance.

Abduh et al. (2007) underline the start-up perspective over importance, effectiveness, and satisfaction to start-up support organisations programs and services. In this research various aspects will be estimated in order to better understand the impacts of support organisations on start-up importance. Start-up creators perception over support organisations programs are substantial, as more satisfied start-up is, it is able to find more benefits and receive more positive impact to the company. Abduh et al. (2007) states that the more the start-up feel the advantages of support organisations help, the more likely

a start-up company will participate in the events organised by support organisations and will feel the impact on start-up importance.

There are many factors which make start-up creation process easier and have a positive impact on start-up development. According to Gatewood et al. (1995), there are many other factors which determine start-up success than knowledge and the personal skills. The researchers highlight the importance of growing networks of the company and the start-up phase progress as the key part in order to determine start-up success and define importance on start-up performance and developemnt (Ayatse et al., 2017; Soetanto and Jack, 2013). By improving the most important factors of success and collaboration of the start-ups, the opportunity of star-up success will also grow.

**H4:** There is a positive correlation between help of support organisations and start-up growth and development.

Some research has been implemented in order to evaluate support organisations impact on start-up performance and growth (Bull & Willard, 1993; Chrisman et al., 1998; Karabag and Berggren, 2014; Sandberg and Hofer, 1987). Most of the research supported the fact that start-up support organisations have some influence on start-up performance and growth. Support organisations are created as intermediary instruments in start-up development phase (Sandberg and Hofer, 1987). Of course, there can be other environmental factors which will have some influence on start-up performance and growth, but support organisations programs will affect it more positively.

## 2.3 Research instrument

The main aim of this research was to understand if support organisations have some impact on start-up development. In order to understand these insights English speaking people were asked to fill in a questionnaire. The survey about support organisations impact on start-up development was published online and it was spread out broadly through different groups, start-up communities, Internet channels, start-up companies and posts of various people. After filling all the main part questions, respondents were asked to provide some demographic characteristics – age and gender.

The first part of the questions was chosen to find out if a person used the help of support organisations at all, and if the respondent has used these services or were using it at the moment of filling the questionnaire – which support organisations services they used and if they were confident that these services will help for the start-up to be more successful. The likelihood of using support organisations and preference towards it was measured by using two constructs. The first one allowed respondents to identify with which support organisations they were collaborating with. This question was divided into 6 options, as in this research 6 support organisations were investigated. A person could choose from -

“universities”; “incubators”; “accelerators”; “management accounting”; “funding organisations”; “support networks”. The third question allowed to identify if a person was confident that support organisation will have a positive impact on a start-up and that it will be more successful after using these services. In this case respondent should choose “yes” or “no”. And if a person responded “yes” to this question, in the fourth question of the questionnaire, a person had to choose about which support organisation(s) they were confident about - “universities”; “incubators”; “accelerators”; “management accounting”; “funding organisations” or “support networks”. These questions helped to determine the usage of support organisations. These questions were selected in order to also find out which support organisations are used more often and which ones are more preferred by respondents.

The second part of the questions was selected in order to examine what kind of impact a support organisation creates to respondents’ company in the field of performance. The support organisation impacts were measured with five items by 7- point Likert scale (from 1- completely false, to 7- completely true). The concept of the 5 questions was selected from Hair Jr et al. (2016) and Hair Jr et al. (2017). The internal consistency reliability value of the constructs represented by Cronbach Alpha value in Hair Jr et al. (2016) research have higher value than 0.6 with the highest is on the effectiveness construct with 0.845. The scale of support organisations impact on start-up performance and development was arranged from 5 statements, which sounded like this “There is increase in company sales turnover (revenue generation) after using support organisation(s) help”, “Our employee number is increasing after working with support organisation(s)”, “There is increasing number of investments and fundings after using the services of support organisation(s)”, “I see that our product potential profit has increased after participating in support organisation(s) programs” and “Our employee average wage has increased after using the help of support organisation(s)”.

The third part of the questions was selected to evaluate the Effectiveness of support organisations for start-up development. It was measured with six items by 7- point Likert scale (from 1- completely false, to 7- completely true). All criteria used in the reliability and validity testing refer to Hair Jr et al. (2016) study where Cronbach alpha of the construct was $\alpha = 0{,}845$. The effectiveness of support organisations on start-up development was arranged from 6 questions, which sounded like this, for example, “I think, we improve our business knowledge and skill while working with support organisation(s)”, “After using the services of support organisation(s), our company team has become more professional”, “I think, we have established productive networking with other tenants while working with support organisation(s)”, “Our company reputation and credibility in the market has increased after using the services of support organisation(s)” “Our company team become more productive after working with support organisation(s)” and “Our product development time to market has become faster after using support organisation(s) help”.

The fourth part of the questions was selected to investigate the support organisations and Importance role for start-up development. Importance approach was measured with four items by 7-point Likert scale (from 1- completely false, to 7- completely true) and in the last question of this construct the respondent had to choose which support organisation helped the most. The concept of the questions was selected for support organisations importance scale from Hair Jr et al. (2016) study where Cronbach alpha of the construct was $\alpha = 0,79$. The support organisations Importance scale was arranged from 4 statements, which sounded like this "Our company competitiveness in the market has increased after participating in support organisation(s) programs", "In my opinion, we have faster access to critical stakeholders (supplier, customer, professional support, etc). after working with support organisation(s)", "The information received from support organisations was valuable and helped our business to evolve". In the last question "Which one of these support organisations helped the most for new venture establishment: (mark one)" the respondent had to choose from 6 options – "universities"; "incubators"; "accelerators"; "management accounting services"; "funding organisations" and "support networks".

The last questions of the survey were dedicated to demographics. In this section respondents, had only two questions which were concentrated with respondents' age and gender. This type of questions was selected in order to examine if demographic characteristics have an impact on different variables and if it will provide separate results when the decision to use support organisations is made.

**Survey questions:** All questions from the surveys and constructs were in English, the questionnaire was distributed for respondents in English language even though the selected sample for this survey was mostly Lithuanian speaking people or people who were working in Lithuanian star-ups. The questionnaire was not translated in order to avoid any misunderstandings and discrepancy which could be created by translating the questionnaire. Also, nowadays in almost each start-up there are some foreign people working in Lithuanian environment. The English version of the survey is provided in the Annexes.

***Table 1.*** **Elements of questionnaire**

| Objects of examination | Factors | Questions | Source |
|---|---|---|---|
| Control question | Usage of support organisations help | 1 | Developed by the author |
| Preference | Likelihood of using support organisations help | 2-4 | Ayatse et al. (2017) |
| Performance | Performance changes after using support organisations help | 5-9 | Cooper, A. C. (1993) |
| Effectiveness | Companies effectiveness changes after using support organisations help | 10-15 | Hair Jr et al. (2016) |
| Importance | Importance of support organisations for a start-up | 16-19 | Hair Jr et al. (2016) |
| Demographic characteristics | Age, gender | 20-21 | Developed by the author |

**Research reliability.** In order to investigate the reliability of different constructs of this research Cronbach's α was calculated by using IBM SPSS Software. The necessary value (for a construct to be concluded as reliable) of Cronbach's α a little bit varies in different articles. According to Loewenthal (2001), Cronbach's α should be at least 0,7 for reliability to be considered as adequate. The reliability of all constructs of this research are provided in the Table 2.

***Table 2.*** **Cronbach's α reliability for each construct used in this survey.**

| | **Cronbach's α** | **N of items** |
|---|---|---|
| **Performance** | 0,731 | 5 |
| **Effectiveness** | 0,799 | 6 |
| **Importance** | 0,747 | 3 |

It can be concluded, that all constructs were reliable as the score of Cronbach's α was higher than 0,7.

## 2.4 Sampling and data collection

For this research investigation, the non- probability sampling method – the convenience sampling was used. This sampling method is suitable and least expensive in terms of utilized time and used money. In accordance with N. Malhotra (2008) the fundamental aspect of a convenience sample meaning is that the respondents (people) who filled in the questionnaire were at appropriate place and on accurate time. When the appropriate sampling method is chosen, it is very significant to determine the needed sample size. There are two possibilities how to examine the accurate sample size. One of them is to calculate it with formula and another one is - to check the sample sizes of previous topical researches, how many respondents were participating in them. The results of previous researches are presented in the Table 3.

***Table 3.*** **Sample sizes of recent studies**

| Authors of the study | Sample size | Sampling type |
|---|---|---|
| Ayatse et al. (2017) | 243 | Convenience |
| Cooper, A. C. (1993) | 251 | Convenience |
| Hair Jr et al. (2016) | 158 | Convenience |

The average sample size could be 218 respondents in comparison with other relevant research studies.

Another alternative is to calculate needed sample size by using the formula. According to Lithuanian statistics department in the beginning of 2019 there was 2 794 184 habitants in Lithuania. Of course, not all Lithuanian residents could be a part of this research, as according to the laws only people from 16 years old can work (part time) and people from 18 years old can work full time. This research is concentrated on a large number of population (as it is known that in Lithuania there was around 2 346 660 habitants from 16 years old and older, in the beginning of 2019, according to Lithuanian statistics department), then this formula should be used:

$$n = z2\ p(1-p)/\ e2$$

This formula could be explained like this: *n* express the needed size of the population, *z* express standard error associated with the chosen level of confidence, *p* expresses the estimated percent in the population and *e* express acceptable sample error (Malhotra, 2008).

Already known meanings of the elements in the formula:

*n* – already known sample sizes (the average from previous researches – 218, and respondents collected in this survey - 290);

*z* – the confidence level can be chosen between 95% or 99%. Most of the time marketing specialists

and researchers are using confidence level of 95% and it indicates that 95% of the answers are collected at this confidence level. If the confidence level is 95%, then z is equal to 1,96.
*p* – is equal to 50.

Based on this formula there is a possibility to calculate sample error (by using the formula backwards), because all other numbers are already known. In the first case (using the average population from previous researches) the sample error is 6,57% as there was 218 respondents. For this questionnaire sample error is 5,69% as 290 respondent answers were gathered.

**Data collection method:** the questionnaire/survey was published online; the quantitative research method was used. The convenient sampling, online survey method was used as the most appropriate form, as it is the least time-consuming method for respondents and for the researcher and as it is the easiest way to reach the biggest number of respondents. Nowadays most of the people are using electronic devices each day, so this method allowed to easily and comfortably answer the questionnaire by phone, computer, tablet or etc., from any location where the Internet connection was working. Data were collected in the period from the beginning till the end of November, 2019.

**Data analysis method:** calculated frequencies of respondents; reliability check of all the questions; T – test were performed to see if there are differences between gender; crosstabs were used to see gender and age differences by various intentions of using support organisations; linear regression was used to test hypothesis; correlation was performed for examination if there is a connection between start-up growth and help of support organisations; One Way ANOVA was used to test if there is a difference of using help of support organisation between various age groups.

**Sample distribution.** Overall 293 respondents participated in the survey, 29 of them have not used any help from support organisations, so they were excluded from the survey, 4 of the respondents have completed the survey partially, so their answers were not used in any calculations. So, after subtracting not suitable answers for this survey, there were 290 respondents who completed the survey fully. From these respondents 162 (62,3%) were women and 98 (37,7%) were men. The respondents age varied from less than 26 to 55 years. The biggest part of participants was from 26 to 35 years old (108 respondents; 41,5%). In this survey overall, there was 5 age groups from less than 26 years old till more than 55 years old. From the people who answered the survey respondents distributed into 4 age groups – first age group <26 years old – 4 (1.5%) people, from 26 till 35 years old – 108 (41,5%) respondents, from 36 till 45 years old – 94 (36,2%) people, from 46 till 55 years old – 54 (20,8) respondents. The conclusion can be made that there were no respondents older than 55 years old in this research.

## 2.5 Demographic characteristics of respondents

In order to comprehend the demographic data clearer, the last two questions of the questionnaire were created to find out the age and gender of the respondents. One of the most interesting elements of demographic characteristics was to find out if age or gender have some influence for decision to use the help of support organisations or not.

By using the Crosstabs method, demographics characteristics - gender was compared in terms of the 3rd questionnaire question "Are you confident that your company will be/is more successful after using the help of our chosen start-up support organisation(s)?". In total 255 (98,1%) respondents answered that they are confident that their company will be/is more successful after using the help of chosen start-up support system. It means that only 5 (1,9%) people from all respondents have not believed in the success of start-up support organisations. From all the respondents 96 men and 159 women believed in the greater company success with the help of support organisations and 2 men and 3 women have not believed in it. So, from those who answered "yes" it can be concluded that women tend to have more favourable opinions towards start-up support organisations.

By using the Crosstabs method, 3rd questionnaire question "Are you confident that your company will be/is more successful after using the help of our chosen start-up support organisation(s)?" was also compared in terms of the demographic characteristics - age. In total 255 (98,1%) respondents answered that they are confident that their company will be/is more successful after using the help of chosen start-up support system. It means that only 5 (1,9%) people from all respondents have not believed in the success of start-up support organisations. There were 4 respondents from the first age group "younger than 26 years old" and all of them believed that company will be more successful after using start-up support organisations services. From the age group "26-35 years old" there was 108 responses in total – 106 answered that they are confident that the company will be/is more successful after using the help of support organisations and 2 of them did not believe in it. From the age group "36-45 years old" of total 94 respondents, 93 believed in the success of using support organisations help and 1 was not confident about it. From the age group "46-55 years old" of 54 people in total, 52 were confident that support organisations help will make the company more successful and 2 people were not confident about it. All information is provided in the Table 4 below.

***Table 4.*** **Crosstabs. "Are you confident that your company will be/is more successful after using the help of our chosen start-up support organisation(s)?"**

| Age | Yes | No | Total |
|---|---|---|---|
| **<26** | 4 | 0 | 4 |
| **26-35** | 106 | 2 | 108 |
| **36-45** | 93 | 1 | 94 |
| **46-55** | 52 | 2 | 54 |
| **>55** | 0 | 0 | 0 |
| **Total** | 255 | 5 | 260 |

By using the Frequency method second question of the survey was investigated – "If you answered 'yes' to the first question, which type(s) of support organisations you were collaborating with: (mark one or more)". In total there was 51 (19,6%) vote for universities, 94 (36,2%) votes for incubators, 82 (31,5%) votes for accelerators, 43 (16,5%) votes for management accounting services, 85 (32,7%) votes for funding organisations, 57 (21,9%) votes for support networks. So, the conclusion can be made that funding organisations was the most widely used start-up support organisation service and the least used service was management accounting.

Frequency method also helped to determine one very important question- "Which one of these support organisations helped the most for new venture establishment: (mark one)":

- 17 (6,5%) of the respondents answered that most valuable help was received from universities;
- 64 (24,6%) of the respondents indicated that most valuable information was received from incubator programs;
- 49 (18,8%) of the respondents answered that accelerators helped the most in start-up establishment process;

- 22 (8,5%) respondents indicated that most valuable help was received from management accounting services;
- 60 (23,1%) of the respondents answered that funding organisations created the greatest value for new venture establishment;
- 48 (18,5%) of the respondents indicated that the most valuable help they got was received from support networks.

The conclusion can be made that incubators helped the most for new venture establishment and the least valuable help was received from universities. All information is provided in the Table 5 below.

***Table 5.*** **Frequency. Which one of these support organisations helped the most for new venture establishment: (mark one)"?**

| | Frequency | Percent |
|---|---|---|
| Universities | 17 | 6,5 |
| Incubators | 64 | 24,6 |
| Accelerators | 49 | 18,8 |
| Management accounting services | 22 | 8,5 |
| Funding organisations | 60 | 23,1 |
| Support networks | 48 | 18,5 |

Another very important question was investigated by using crosstabs method - "The information received from the support organisation(s) was valuable and helped our business to evolve?" in order to find out either men or women hold more favourable opinion towards information received from support organisations. The answers of this question were represented by 7-point Likert scale from "1-Completely False" to "7 Completely True". None of the respondents answered "1-Completely false", which means that people tend to have at least some favourable views about support organisations. The answers to this question distributed like this:

- "2 - Somewhat False" – 4 (1,5%) answers in total – 3 Men; 1 Woman

- “3 - Slightly False” – 18 (6.9%) answers in total – 3 Men; 15 Woman
- “4 – Neither True or False” – 80 (30,8%) answers in total – 25 Men; 55 Women
- “5 – Slightly True” – 96 (36,9%) answers in total – 42 Men; 54 Women
- “6 - Somewhat True” – 56 (21,5%) answers in total – 25 Men; 31 Women
- “7 – Completely True” – 6 (2,3%) answers in total – 6 Women

From these answers the conclusion can be made that people (men and women) indicated the information received from support organisations as valuable and helping to evolve the business. All information provided in the Table 6 below.

***Table 6.*** **Frequency. “The information received from the support organisation(s) was valuable and helped our business to evolve?”**

| | **Frequency** | **Percent** |
|---|---|---|
| Completely False | 0 | 0 |
| Somewhat False | 4 | 1,5 |
| Slightly False | 18 | 6,9 |
| Neither true or False | 80 | 30,8 |
| Slightly True | 96 | 36,9 |
| Somewhat True | 56 | 21,5 |
| Completely True | 6 | 2,3 |

With the help of the Independent Sample T test (referred to Univariate Statistical tests table and it was used, because gender was divided into two groups) the significance of each construct and gender groups was checked. The level of significance is provided in the Table 4. The construct is considered as significant if sig. is 0,05 or less.

***Table 7.*** **Significance between gender groups and constructs of the survey.**

| | **Sig.** | |
|---|---|---|
| Performance | 0,870 | Not significant |
| Effectiveness | 0,538 | Not significant |
| Importance | 0,866 | Not significant |

According to this table the conclusion can be made that none of the constructs had a significant meaning between different gender.

# 3. ANALYSIS OF EMPYRICAL RESULTS

## 3.1 Testing of hypotheses

Start-ups indisputably are becoming one of the key drivers in the country economy. The development and growth of a start-up depends on how well the ecosystem provides the support which is needed for the progress of a start-up. As others recently created companies, start-ups have greater failure rates due to lack of networks, credibility, reputation, resources, networks, innovation, or marketing knowledge for developing and selling the products. In order to survive, bigger part of start-ups decides to collaborate and join business some kind of business support organisations programs in order to maintain and improve their performance.

In previous researches several factors have been identified as having some influence on start-up performance growth while using the help of one support organisation. Nevertheless, the influence of several start-up support organisations on start-up growth and performance has not been validated quantitatively by including all possible elements known from other researches.

Therefore, this research focuses on evaluating the impact of start-up support organisations for start-up performance and growth and whether these support organisations are useful for start-up performance based on quantitative approach.

All performance measurement criteria were selected based on previous business start-up support organisations and adjusted based on start-up ecosystem. The practical and academical gap on start-up support organisations and their implications for start-up performance are as well addressed by doing this survey and raising these hypotheses. The expected result of these hypotheses will provide some insights of business support organisations impact for start-up performance, and will reveal which support organisation influenced start-up development the most.

These are the main reasons why such hypotheses were chosen to be tested in this research. In reviewed articles the main and mostly described aspects of start-ups that are affected by support organisations were– Performance (H1), Effectiveness (H2), Importance (H3) and also checking, if help of support organisation have some influence on start-up development and start-up growth (H4). In order to have a clearer view on hypotheses relationships and significance – multiple regression method was applied (Table 8). Results of these hypotheses will provide the answer which factors are influencing start-up development and start-up growth.

***Table 8.*** **Multiple regression analysis of hypotheses (H1 – H3).**

| **N$^{o}$ of H** | **Dependent variable** | **Potential predictor** | **Beta** | **t** | **Sig.** | **Hypothesis** |
|---|---|---|---|---|---|---|
| H1 | Help of support organisations on start-up growth and development, $R^2$= 0,532 F = 97,051 p =0,000 | Performance | 0,163 | 2,356 | 0,019 | Accepted |
| H2 | | Effectiveness | 0,264 | 3,615 | 0,000 | Accepted |
| H3 | | Importance | 0,397 | 6,972 | 0,000 | Accepted |

Multiple regression analysis indicated that all constructs of the survey – performance, effectiveness and importance had a significant meaning while influencing the start-up growth and development. All these variables had a significant meaning on start-up growth and development because in all of the cases *p* value was lower than 0,05.

Overall, analysis showed that all three variables (H1 – H3) explains 52,2% (R2 = 0,532) of start-up growth and development. R2 score is twice higher than the one used by various sociologists in their studies (as usually R in their researches is equal to 20% or more). So, as this research had different variables and constructs to see if support organisations somehow helps for start-up growth and

development the result of R is tolerable, but there is space where to improve the research - by including more factors which could affect start-up growth and development.

In all researches Beta results indicates the strength – how much influence and affection one or another element has on dependent variable. According to the Table 5, the conclusion can be made that importance has the highest (0,397) influence on start-up growth and development. Also, effectiveness (0,264) has a higher influence than performance (0,163), which means that performance stays the least influential for start-up growth and development.

The provided table indicates how the investigated constructs and variables affects start-up growth and development and each other. As all variables (H1 – H3) are interconnected (the table of multiple regression is provided in Annex 3), there is a possibility that they could influence start-up growth and development while investigated separately. The results of multiple regression analysis can always be controversial as one or another variable can affect the meaning and significance of other variables. All regression analysis of hypotheses was tested once more – individually, in order to see if the influence of separately tested variables is stronger or lower. All the results are provided below.

**H1** states, that the help of support organisations has a positive impact on start-up performance.

All respondents of the survey had to evaluate their apprehension of start-up performance over 7-point Likert scale by answering to 5 statements. All of the statements were concentrated with each respondents' understanding about company's performance (improvement or decline) after using the help of support organisations. The main purpose was to understand better how support organisations can help for start-up performance and what influence it has on it. Also, if it is true, that support organisations actually help for start-up development and growth. The Linear regression analysis
method was used in order to test this hypothesis. The results are provided below in the Table 9.

***Table 9.*** **Relationship between support organisations and start-up performance.**

| | Unstandardized coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| **Support organisations help** | 1,163 | 0,300 | | 3,871 | 0,000 |
| **Performance** | 0,771 | 0,063 | 0,604 | 12,169 | 0,000 |

The regression analysis of this relationship indicated that significant is at 0,000 level. It means that there is the significant relationship between start-up support organisations and performance. These received results confirm the hypothesis **H1**. The score of Beta of performance in table 5 was 0,163 (when all constructs and variables of the research was counted in) and if other variables of the questionnaire would not be included in the research start-up organisations would create a lot higher influence on start-up performance (as beta score of this construct separately is = 0,604). Also, as the score of Beta is positive, it means that when start-up is getting more help from support organisations the level of performance is rising and start-up is showing greater results.

**H2** states, the help of support organisations has a positive impact on start-up effectiveness.

All participants of the survey had to evaluate their apprehension of start-up effectiveness after using support organisations services over 7- point Likert scale by answering to 6 statements. The main purpose was to understand better how support organisations can help for start-up effectiveness and what influence it has on it. Also, if it is true, that support organisations actually help for start-up development and growth. The Linear regression analysis method was used in order to test this hypothesis. The results are provided below in the Table 10.

***Table 10.*** **Relationship between start-up support organisations and start-up effectiveness.**

| | Unstandardized coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | **Beta** | | |
| **Support organisations help** | 0,677 | 0,305 | | 2,223 | 0,027 |
| **Effectiveness** | 0,844 | 0,062 | 0,646 | 13,595 | 0,000 |

Regression of this hypothesis is significant at level 0,000. This result represents that there is a significant relationship between support organisations help and effectiveness of a start-up. These results approve the hypothesis **H2**. Beta score of start-up effectiveness in table 5 was 0,264 (when all variables of the construct of the research was used), if other research variables would not be included in the research start-up support organisations would have even higher influence on start-up effectiveness (as Beta score of this construct separately is = 0,646). The start-up support organisations influence on start-up effectiveness is quite similar to start-up support organisations influence on start-up performance, just a little bit bigger (as Beta score of performance is 0,604 and Beta score of effectiveness is 0,646). Also, as the score of Beta is positive, it means that when start-up is getting more help from support organisations the level of effectiveness is rising and start-up is showing greater results.

**H3** states, the help of support organisations has a positive impact on start-up importance.

All respondents of the questionnaire had to evaluate their perception of start-up importance after using support organisations services over 7- point Likert scale. Overall, 4 statements were used to measure this construct. As the fourth question asked to identify which support organisation made the greatest impact on a start-up, this question was not used in Linear regression analysis of this construct. The main purpose of this construct was to more deeply understand how support organisations can help for start-up importance growth and what influence it has on it. Also, if it is true, that support

organisations actually help for start-up development and growth. The Linear regression analysis method was used in order to test this hypothesis. The results are provided below in the Table 11.

***Table 11.*** **Relationship between start-up support organisations and start-up importance.**

| | **Unstandardized coefficients** | | **Standardized coefficients** | **t** | **Sig.** |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | **Beta** | | |
| **Support organisations help** | 0,928 | 0,274 | | 3,389 | 0,001 |
| **Importance** | 0,851 | 0,060 | 0,663 | 14,323 | 0,000 |

Regression of this hypothesis is significant at level 0,000. This result shows that there is a significant relationship between support organisations help and importance of a start-up. These results approve the hypothesis **H3**. Beta score of start-up importance in table 5 was 0,397 (when all variables of the construct of the research was used), if other research variables would not be a part of this research, start-up support organisations would have even higher influence on start-up importance (as Beta score of this construct separately is = 0,663). The start-up support organisations influence on start-up importance is quite similar to start-up support organisations influence on start-up performance and start-up effectiveness, just a little bit bigger (as Beta score of performance is 0,604 and Beta score of effectiveness is 0,646). Also, as the score of Beta is positive, it means that when start-up is getting more help and more knowledge from support organisations the level of importance is rising and start-up is showing greater results.

**H4** states, that there is a positive correlation between start-up support organisations help on start-up performance, effectiveness, importance and start-up growth and development.

The last hypothesis was concentrated with correlation of start-up support organisations help and start-up growth and actual start-up performance (growth and development). For this analysis, the 3 constructs of the survey were used – performance, effectiveness and importance (from 5th to 19th question). These questions indicated the importance of start-up support organisations and actual growth and development after using these services. The main aspect of this hypothesis was to find out if support organisations help on start-up performance, effectiveness, importance correlates with start-up growth and development.

The hypothesis (**H4**) was confirmed, as there was a correlation between all 3 constructs - support organisations help on start-up performance, effectiveness, importance and start-up growth and development. Correlation scores were equal to performance – 0,604; effectiveness – 0,646; importance - 0,663 (correlation table is provided in Annex 2). It means that if one of the variables changes by one unit, the influence of another one changes a little bit more than a half. The correlation is very strong and addictive.

### 3.2 Additional analysis of responses based on demographics

The results of the research revealed some interesting insights. By using demographic variables, all constructs were tested in accordance with the gender of the respondent. From performed T-Test analysis it can be seen that men appreciated and evaluated start-up support organisations help on start-up performance a little bit higher than women. So, it can be concluded that men see higher rates of start-up performance after using the help of support organisations than women.

After performing the T-Test analysis on the next construct of the survey – effectiveness, it can be seen that women tend to evaluate the help of support organisations on start-up effectiveness a little bit higher rate than men. So, the conclusion can be made that women see the greater impacts on start-up effectiveness after using the help of support organisations than men.

Lastly, the T-Test analysis was performed on the third construct of the survey – importance. From this analysis it can be seen that there is not huge difference between men and women once more. In this case women evaluated the support organisations help on start-up importance a little bit higher than men. Even though the difference is very small, it means that women see a bigger change in start-up importance after using support organisations help than men.

Also, all of these three constructs were investigated by using Oneway ANOVA analysis in order to see if there is a difference between different age groups. These differences are represented in the table below.

***Table 12.*** **Oneway ANOVA, differences between survey constructs and demographic variable - age.**

| | | Mean | Std. Deviation | Std. Error |
|---|---|---|---|---|
| **Performance** | <26 | 5,1500 | 0,57446 | 0,28723 |
| | 26-35 | 4,7426 | 0,73576 | 0,7080 |
| | 36-45 | 4,8149 | 0,82449 | 0,08504 |
| | 46-55 | 4,2667 | 0,63603 | 0,08655 |
| **Effectiveness** | <26 | 4,8750 | 0,64370 | 0,32185 |
| | 26-35 | 4,9676 | 0,72825 | 0,7008 |
| | 36-45 | 4,9309 | 0,81555 | 0,8412 |
| | 46-55 | 4,4568 | 0,59097 | 0,08042 |
| **Importance** | <26 | 4,2500 | 0,50000 | 0,25000 |
| | 26-35 | 4,6134 | 0,75997 | 0,07313 |
| | 36-45 | 4,5745 | 0,72199 | 0,07447 |
| | 46-55 | 4,2315 | 0,83955 | 0,11425 |

From the results provided in the table, the conclusion can be made that younger people tend to appreciate the help of support organisation on start-up performance more. The highest score of start-up performance after using the help of support organisation can be seen in the age group "<26" and the lowest from the age group "46-55" years old.

On another construct – effectiveness, the distribution of scores is a little different than in the performance construct. It can be seen that the highest score in accordance to start-up support organisation help on start-up effectiveness is showed by the age group "26-35" years old and the lowest from the age group "46-55" years old.

From the last construct – importance, different insights and distribution can be seen too. The highest rates in accordance with start-up support organisations help on start-up importance is reflected at the age group “26-35” years old and the least satisfied age group was “46-55” years old. And an interesting thing that while evaluating the importance of start-up support organisation help on a start-up, the youngest group was really close to the last group. Although the differences and the gaps between all the groups are really minor.

The conclusion can be made that the most satisfied age group with the help of support organisations in two cases was “26-35” years old and the least satisfied groups in all the cases and constructs was the oldest – “46-55” years old. These fluctuations can be happening because nowadays the help of support organisations creates a bigger value, there is more options from which a person or a start-up can choose and of course the help is provided by more sophisticated people (true professionals in their field) and maybe older people used the help of support organisations some time ago.

Another important factor which was tested by using Oneway ANOVA was the differences between age groups in evaluating the success of support organisations help, how helpful and useful it was. For this testing this question of the survey was used – “The information received from support organisations was valuable and helped our business to evolve” and compared in accordance with different age groups. All results are provided in the table below.

***Table 13.*** **Oneway ANOVA, differences between evaluating the help of support organisations and demographic variable - age.**

| | Mean | Std. Deviation | Std. Error |
|---|---|---|---|
| **<26** | 4,50 | 1,000 | 0,500 |
| **26-35** | 4,88 | 1,030 | 0,099 |
| **36-45** | 4,87 | 0,942 | 0,097 |
| **46-55** | 4,39 | 0,920 | 0,125 |

The results of this Oneway ANOVA analysis indicated that the highest rates of start-up evolve and growth after using the help of support organisations was indicated by the age group “26-35” years old.

It seems that this age group was really satisfied with the help of support organisations in all the cases. Also, really close was the “36-45” years old group, and the least happy was the oldest age group “46-55” years old. And this time the youngest groups was really close to the oldest group by the score given to start-up support organisations help on start-up growth. Overall, the results show that there is a nice impact of the help provided by support organisation ant the gaps between highest and lowest scores are really small. People tend to preferably evaluate the help of support organisations.

One of the really important aspects of this research was to determine if there is a difference between female and male participants and their attitudes towards support organisations help on start-up development. In order to find the answers if there are some differences, multiple regression method was applied. The results provided below will introduce the investigated aspects of start-up support organisations help for start-up development and its importance for female and male participants.

***Table 14.*** **Influence of variables on female perception on support organisations help.**

| **N$^{o}$ of H** | **Dependent variable** | **Potential predictor** | **Beta** | **t** | **Sig.** | **Hypothesis** |
|---|---|---|---|---|---|---|
| **H1** | Help of support organisations on start-up growth and development, $R^2$= 0,640 F = 93,710 p = 0,000 | Performance | 0,124 | 1,602 | 0,111 | Rejected |
| **H2** | | Effectiveness | 0,273 | 3,476 | 0,001 | Accepted |
| **H3** | | Importance | 0,513 | 8,506 | 0,000 | Accepted |

Performed multiple regression analysis showed that start-up support organisations (F= 93,710, p= 0,000) was a significant factor on female participants’ belief that start-up support organisations actually

were useful for start-up development and growth. The understating of start-up support help on start-up effectiveness (H2) and importance (H3) were accepted, while the influence on start-up performance (H1) was rejected (regression analysis – Annex 4).

Overall, analysis showed that all five three (H1 – H3) explains 64,0% (R2 = 0,640) of start-up growth and development. R2 score is more than twice higher than the one used in sociologists' studies and researches (as in their studies R is usually equal to 20% or more), as in this research only three constructs of start-up development were used and investigated, the result of R is tolerable.

The Beta score indicates the strength – how much influence one or another factor has on dependent variable. According to the Table 11, the conclusion can be made that importance had almost twice bigger influence on start-up development and growth than other factors – performance and effectiveness. Another interesting fact, that Beta results showed that importance (beta = 0,426) influence on start-up development and growth for female participants was even higher than for all participants, as it is presented in table 5 (importance Beta = 0,397). It means that importance approach, for female participants is very important factor while decision about how helpful was support organisation and if they provided the right help for start-up growth and development. Beta results of perfectionism is 0,426 and even negative -0,183 of body surveillance.

Male respondents' answers indicated quite different opinions and results which are provided in the Table 15.

***Table 15.*** **Influence of variables on male perception on support organisations help.**

| **N$^0$ of H** | **Dependent variable** | **Potential predictor** | **Beta** | **t** | **Sig.** | **Hypothesis** |
|---|---|---|---|---|---|---|
| **H1** | Help of support organisations on start-up growth and development, $R^2$= 0,411 F = 21,876 p = 0,000 | Performance | 0,163 | 1,245 | 0,216 | Rejected |
| **H2** | | Effectiveness | 0,419 | 2,682 | 0,009 | Accepted |
| **H3** | | Importance | 0,105 | 0,847 | 0,399 | Rejected |

Performed multiple regression analysis showed that start-up support organisations (F= 21,876, p= 0,000) was a significant factor on male participants' belief that start-up support organisations actually were useful for start-up development and growth. Performed regression analysis also indicated that in accordance to male participants belief only effectiveness (p= 0,009) had a significant influence on start-up growth and development while H1 and H3 were rejected (regression analysis – Annex 5).

Overall, analysis showed that all three variables (H1 – H3) explains 41,1% (R2 = 0,411) of start-up growth and development. R2 score is even twice higher than the one used by sociologists in their researches (usually R is equal to 20% or more), so the conclusion can be made that investigated constructs are highly reliable.

Beta results indicates the strength – how much influence one or another factor has on dependent variable. According to the Table 12, the conclusion can be made that effectiveness has a moderately high influence on start-up development and growth according to the male perspective. As Beta results

of effectiveness is 0,419. Also, Beta results indicated that effectiveness influence on start-up growth and development (beta = 0,419) for male participants was a lot higher than for all participants in the survey (Beta of all participants = 0,264, results provided in table 5).

After completing the analysis, the conclusion can be made that there are some meaningful differences between men and women. The factors which influence the start-up development and growth and the importance of support organisations for a start-up are a little bit varying. For female participants of this survey, effectiveness and importance had a significant influence on start-up growth and development and for male participant only effectiveness of a start-up seems to have meaningful relationship with start-up growth and performance. For both genders' variables, which changes the perception towards start-up growth and development, are different. It is interesting that importance had the highest score for female participants and for male participants it was rejected. It means that the perception of female and male participants towards the same support organisation and their help for start-up growth and development are quite different. So, the conclusion can be made that women and men are going see the different result why start-up grew or expanded, therefore the start-up support organisations should provide different information for male and female as both genders reflect different viewpoints. Also, it is interesting to find out if there is a difference between understanding start-up support organisations help on start-up growth and development between different age groups.

***Table 16.*** **Influence of start-up support organisations help on start-up growth and development according to the age group 1 (26-35).**

| N$^{o}$ of H | Dependent variable | Potential predictor | Beta | t | Sig. | Hypothesis |
|---|---|---|---|---|---|---|
| **H1** | Help of support organisations on start-up growth and development, $R^2$= 0,472 F = 30,942 p = 0,000 | Performance | 0,107 | 0,953 | 0,343 | Rejected |
| **H2** | | Effectiveness | 0,403 | 3,500 | 0,001 | Accepted |
| **H3** | | Importance | 0,251 | 2,483 | 0,015 | Accepted |

Performed regression analysis indicated that start-up support organisations help (F= 30,942, p= 0,000) had a significant influence on start-up growth and development in regard to the opinion of age group 1 (from 26 years old till 35 years old). Hypotheses H2 and H3 were accepted and hypothesis H1 was rejected. The younger part of respondents had a stronger opinion that start-up support organisation helps for start-up effectiveness and importance, but not for performance.

Overall, analysis showed that all five three (H1 – H3) explains 47,2% (R2 = 0,472) of overall start-up support organisations help for start-up development and growth. R2 score is twice higher than the one used by sociologists in their studies (as in sociologist sturdies R is usually equal to 20% or more), so as in this research only three aspects were used and investigated, then the result of R is highly tolerable (regression analysis – Annex 6).

***Table 17.*** **Influence of start-up support organisations help on start-up growth and development according to the age group 2 (36-45).**

| **N$^{o}$ of H** | **Dependent variable** | **Potential predictor** | **Beta** | **t** | **Sig.** | **Hypothesis** |
|---|---|---|---|---|---|---|
| **H1** | Help of support organisations on start-up growth and development, $R^2$= 0,603 F = 45,486 p = 0,000 | Performance | 0,332 | 3,103 | 0,003 | Accepted |
| **H2** | | Effectiveness | 0,220 | 1,745 | 0,084 | Rejected |
| **H3** | | Importance | 0,344 | 3,843 | 0,000 | Accepted |

Performed regression analysis indicated that start-up support organisations help (F= 45,486, p= 0,000) had a significant influence on start-up growth and development in regard to the opinion of age group 2 (from 36 years old till 45 years old). Hypotheses H1 and H3 were accepted, while hypothesis H2 was rejected. It is possible that participants of age group 2 did not believed that start-up support organisations have some influence on start-up effectiveness or have not seen greater results in this area of the business.

Overall, analysis showed that all three variables (H1 – H3) explains 60,3% (R2 = 0,603) of overall start-up support organisations help for start-up development and growth. R2 score is event three time higher one used by sociologists in their studies (as usually R is equal to 20% or more), as in this research only three aspects were calculated the result of R is really reliable (regression analysis – Annex 7).

***Table 18.*** **Influence of start-up support organisations help on start-up growth and development according to the age group 3 (46-55).**

| N$^{o}$ of H | Dependent variable | Potential predictor | Beta | t | Sig. | Hypothesis |
|---|---|---|---|---|---|---|
| **H1** | Help of support organisations on start-up growth and development, $R^2$= 0,597 F = 24,663 p = 0,000 | Performance | -0,162 | -1,024 | 0,311 | Rejected |
| **H2** | | Effectiveness | 0,096 | 0,698 | 0,488 | Rejected |
| **H3** | | Importance | 0,826 | 7,012 | 0,000 | Accepted |

Performed regression analysis indicated that start-up support organisations help (F= 24,663, p= 0,000) had a significant influence on start-up growth and development in regard to the opinion of age group 3 (from 46 years old till 55 years old). Hypotheses H1 and H2 were rejected, while hypothesis H3 was accepted. It is possible that age group 3 respondents did not had any concerns or insights about start-up support organisations help on start-up performance and effectiveness. They, might not believe that start-up support organisations could help for start-up performance or effectiveness, or also they have not seen the difference in these fields of the business after using the help of support organisations.

Overall, analysis showed that all three variables (H1 – H3) explains 59,7% (R2 = 0,597) of overall start-up support organisations help for start-up development and growth. R2 score is almost twice higher than the one used by sociologists in their studies (as usually in their studies R is equal to 20% or more) and it is a great result for this research as only three variables ere used and investigated, so the result of R is more than tolerable (regression analysis – Annex 8).

The insights between three age groups have very interesting and different variables. For age group 1 - H2 and H3 were accepted, while H1 was rejected; for age group 2 - H1 and H3 were accepted, while H2 was rejected; for age group 3 - H3 was accepted while H1 and H2 were rejected. In all cases different hypotheses had significant meaning for different age groups. Interesting fact, that in all cases, in all age groups H3 was accepted, which means that start-up support organisations had significant influence on start-up importance in the eyes of all age groups.

Beta results indicates the strength of relationship between different variables– how much influence one or another factor has on dependent variable. Beta score of importance grew with each age group. For age group 1 it is equal to 0,251, for age group number 2 it is equal 0,344 and for age groups number 3 it is equal to even 0,826. According to the table 13 and table 14, the conclusion can be made that start-up support organisations help on start-up importance in the eyes of age group 1 and age group 2 had more than twice lower influence on start-up growth and development (regression analysis of table 13 and table 14 is provided in annex 7 and annex 8). Also, regression analysis indicated that the highest score and influential factor of start-up support organisations on start-up performance was indicated by the age group 2. Regression analysis also showed that the highest score and influential factor of start-up support organisations on start-up effectiveness was indicated by the age group 1. Regression analysis indicated that the highest score and the most influential factor of start-up support organisations on start-up importance was indicated by the age group 3.

The conclusion can be made that for youngest respondents' start-up support organisations has the greatest influence on start-up effectiveness, for the middle age group – importance, but the difference is really low between importance and performance (only 0,002) and for the oldest age group importance was the key determinant with huge gap in relation to other factors. All hypotheses acceptance and rejection were differently distributed between different age groups and had different meanings.

# CONLUSIONS AND PROPOSALS

## Conclusions

In accordance with the results of theoretical, methodological and research part analysis in this Master thesis which investigates the impact of support organisations on start-up development – all conclusions are presented below.

1. According to the analysis of the literature, there is a lot of different factors which can have influence on start-up performance, growth and development. As start-up creation process is not easy, nowadays there are various options of help. According to start-up ecosystem definition, it indicates that one of the most important part of all start-up environment is support organisations. Especially in the beginning of start-up creation process.
2. All kinds of help which is provided by start-up support organisations is very important, such as – helping with idea generation, inventions and research possibilities, the help provided for start-up at various stages, the different courses for entrepreneurs and start-up team members, help in finding the right investors, mentors and advisors, also, the help of connecting people from related organisations in order to make the start-up creation process easier and faster.
3. There are a lot of factors which positively influence start-up growth and development. One of the key determinants is start-up support organisations, providing the opportunity to get various help and advices. It is very important for a start-up in the beginning to have some guidelines as the business is very new and fragile. Also, the help before the establishment of a start-up is very significant, as there is a lot of factors about which the new entrepreneur does not have any idea, like all the legal regulations, financial part and investment opportunities and etc.
4. The sample is unbalanced in accordance to the demographic variable - gender, as this research is reflecting more women feelings and opinions towards impact of support organisations on start-ups growth and development, because there were more female respondents than male ones.
5. The research revealed some interesting insights. For example, younger people tend to believe that company will be more successful after using the help of start-up support organisations, with each age group the rate of trust was dropping. Most widely used and collaborated start-up support organisations were – 1) incubators; 2) funding organisations; 3) accelerators.
6. Another really important factor of this research was to find out if the help provided by start-up support organisations actually helped for start-up to evolve and grow. Mostly all respondents responded positively to this question and marked 5 - points (slightly true) from 7 - points (completely true) Likert scale. Another popular answer was 4 – points (neither true or false) and in the third place of popularity respondents indicated 6 – points of Likert scale – somewhat true.

So, the conclusions can be made, that start-up support organisations have at least some positive impact on start-up development and growth.

7. Another analysis indicated that the highest rates of start-up evolve and growth after using the help of support organisations was indicated by the age group “26-35” years old.
8. Also, there are some meaningful differences between men and women. The factors which influence the start-up development and growth and the importance of support organisations for a start-up are a little bit varying. For female participants of this survey, effectiveness and importance had a significant influence on start-up growth and development and for male participant only effectiveness of a start-up seems to have meaningful relationship with start-up growth and performance. It is interesting that importance had the highest score for female participants and for male participants it was rejected.
9. For youngest respondents’ start-up support organisations has the greatest influence on start-up effectiveness, for the middle age group – importance and for the oldest age group importance was the key determinant with huge gap in relation to other factors.

## Proposals

1. For future researcher of this topic the suggestion would be to test more variables. In this research, only 3 constructs/factors were tested which can have some influence on start-up growth and development – performance, effectiveness and importance. Although all variables had quite good scores of R2, even higher than the ones used by sociologists, but it would be a good idea to add more variables to this research in order to investigate it more deeply. In various literature, there are more factors provided which could have some impact of start-up support organisations help on start-up development. It would be purposeful to investigate and analyse all the factors more deeply by including more variables into survey.
2. The guidance for further research – to investigate why start- up support organisations had a negative impact on start-up performance at the age group 3 (46-55 years old). It would be meaningful to investigate the impact, because the relationships should be positive between start-up support organisations help and start-up performance. Further research could explore the influence of this variable more deeply.
3. The start-up support organisations should provide different information for male and female as both genders reflect different viewpoints, women and men see the result differently why start-up grew or expanded.

4. The future research should include more respondents in order to have more representative results. Also, it should include:
    - different channels of start-up support organisations help;
    - more aspects of the fields in which support organisations could be helpful (not only performance, effectiveness and importance of a start-up)
    - provide some particular cases of support organisations help evidence;
    - provide various types of attitudes and clients, which have used the help of support organisations response.

5. Marketing specialists of start-up support organisations should pay more attention to gender differences. This research investigated that there is significant difference between men and women perception why to use the help of start-up support organisations. Marketing specialists and start-up support organisations employees should prepare their strategies differently for both genders. By using the results of this research, it would be possible to more easily decide how to promote the start-up support organisations and what information to provide for start-up creators or employees.
6. Also, start-up support organisations employees should pay more attention to age differences in order to better understand why people use the help of start-up support organisations and what impacts on start-ups development they expect from it. As this research indicated that there is a solid difference between younger and older respondents.

**REFERENCES**


1. Abduh, M., D'Souza, C., Quazi, A. and Burley, H. T. (2007). *Investigating and classifying clients' satisfaction with business incubator services.* Managing Service Quality: An International Journal, 17(1), 74–91.
2. Afriana L. (2018). *Assessing The Impact of Business Incubation To Startup Performances In Indonesia.* Technische Universiteit Delft.
3. Ahmad, N.H. and Seet, P. (2009). *Dissecting behaviours associated with business failure: A qualitative study of SME owners in Malaysia and Australia.* Asian Social Science, 5(9), 98–104.
4. Akinruwa, T.E., Awolusi, O.D. and Ibojo, B.O. (2013). *Determinants of small and medium enterprises (SMEs) performance in Ekiti State, Nigeria: A business survey approach.* European Journal of Humanities and Social Sciences, 27(1), 1392– 1406.
5. Albort-Morant, G. and Oghazi, P. (2016). *How useful are incubators for new entrepreneurs?* Journal of Business Research, 69(6), 2125–2129.
6. Aldrich, H. E. and Ruef, M. (2006). *Organizations evolving, second edition*. SAGE Publications.
7. Alfredsson, L. (2003). *Financial and non-financial support in the aero engine industry.* Masters dissertation, Lulea University of Technology.
8. Ammenberg J. and Hjelm O. (2003). *Tracing Business and Environmental Effects of Environmental Systems—A Study of Networking Small and Medium-sized Enterprises Using a Joint Environmental Management System*. Business Strategy and the Environment 12(3):163 – 174.
9. Ayatse, F. A., Kwahar, N. and Iyortsuun, A. S. (2017). *Business incubation process and firm performance: an empirical review.* Journal of Global Entrepreneurship Research, 7(1), 2.
10. Bahrami, H. and Evans, S. (2000). *Flexible recycling and high-technology entrepreneurship.* In K. Martin (Ed.), Understanding Silicon Valley: The anatomy of an entrepreneurial region (pp. 166–189).
11. Barbero, J. L., Casillas, J. C., Ramos, A. and Guitar, S. (2012). *Revisiting incubation performance: How incubator typology affects results.* Technological Forecasting and Social Change, 79(5), 888–902.
12. Baum, J. A. C., Calabrese, T. and Silverman, B. S. (2000). *Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology.* Strategic management journal, 267–294.

13. Beck, T. and Demirguc-Kunt, A. (2006). *Small and medium-size enterprises: Access to finance as a growth constraint*. Journal of Banking & Finance, 30(11), 2931– 2943.
14. Bennett, R. and Robson, P. (2003). *Changing use of external business advice and government supports by SMEs in the 1990s.* Regional Studies, 37(8), 795–811.
15. Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N. (2013). *Digital business strategy: Toward a next generation of insights*. MIS Quarterly, 37(2), 471–482.
16. Bisbe, J. and Otley, D. (2004). *The effects of the interactive use of management control systems on product innovation.* Accounting, Organizations and Society, 29(8), 709–737.
17. Bosma, N., Van Praag, M., Thurik, R. and De Wit, G. (2004). *The value of human and social capital investments for the business performance of startups.* Small Business Economics, 23(3), 227–236.
18. Brooksbank, D. (2008). *Small business policy and support.* Environment and Planning C: Government and Policy, 26(2), 287–291.
19. Bruneel, J., Ratinho, T., Clarysse, B. and Groen, A. (2012). *The evolution of Business incubators: Comparing demand and supply of business incubation services across different incubator generations.* Technovation, 32(2), 110–121.
20. Bull, I., & Willard, G. E. (1993). *Towards a theory of entrepreneurship.* Journal of Business Venturing, 8(3), 183–195.
21. Burns, J. and Scapens, R. W. (2000). *Conceptualizing management accounting change: an institutional framework.* Management Accounting Research, 11(1), 3–25
22. Carland, J. W., Hoy, F., Boulton, W. R. and Carland, J. A. C. (1984). *Differentiating entrepreneurs from small business owners: A conceptualization.* Academy of management review, *9*(2), 354–359.
23. Chapman, C. S., Hopwood, A. G. and Shields, M. D. (2007). *Handbook of Management*
24. Cheng, S. and Schaeffer, P. V. (2011). *Evaluation without Bias: A methodological perspective on performance measures for business incubators.* Region et Developement, 33, 211–225.
25. Chrisman, J. J., Bauerschmidt, A. and Hofer, C. W. (1998). *The Determinants of New Venture Performance: An Extended Model.* Entrepreneurship Theory and Practice, 23(1), 5–29.
26. Churchill, N., & Bygrave, W. D. (1989). *The entrepreneur ship paradigm (i): A philosophical look at its research methodologies.* Entrepreneurship Theory and practice, 14(1), 7–26.
27. Cohen, S. G. and Hochberg, Y. V. (2013). *Accelerating Startups: The Seed Accelerator Phenomenon.*

28. Cooper, A. C. (1993). *Challenges in predicting new firm performance.* Journal of Business Venturing, 8(3), 241–253.
29. Curran, J. and Storey, D.J. (2002). *Small business policy in the United Kingdom: The inheritance of the small business service and implications for its future effectiveness.* Environment and Planning C: Government and Policy, 20(2).
30. Davidsson, P., Steffens, P. and Gordon, S. (2011). *Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE): design, data collection and descriptive results*. Handbook of research on new venture creation, 216–250.
31. Davila, A. and Foster, G. (2007). *Management Control Systems in Early-Stage Startup Companies.* The Accounting Review, 82(4), 907–937
32. Davila, A., Foster, G. and Jia, N. (2010). *Building Sustainable High-Growth Startup Companies: Management Systems as an Accelerator*. California Management Review, 52(3), 79–105.
33. Delmar, F. (2015). *A response to Honig and Samuelsson (2014).* Journal of Business Venturing Insights, 3, 1–4.
34. Delmar, F. and Shane, S. (2003). *Does business planning facilitate the development of new ventures?* Strategic Management Journal, 24(12), 1165–1185.
35. Dwivedi, N.T. and Mishra, T. (2013). *Women-empowerment through women entrepreneurship: A study of Faizabad zone of Uttar-Pradesh.* Voice of Research, 2(2), 50–55.
36. Falk, R. (2007). *Measuring the effects of public support schemes on firms' innovation activities: Survey evidence from Austria.* Research Policy, 36(5), 665–679.
37. Gatewood, E. J., Shaver, K. G. and Gartner, W. B. (1995). *A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation.* Journal of Business Venturing, 10(5), 371–391.
38. Gill, I.S. and Kharas, H. (2015). *The middle-income trap turns ten.* Policy Research Working Papers (No. WPS 7403). Washington, DC: World Bank Group.
39. Gobble, M.M. (2014). *Charting the innovation ecosystem.* Research-Technology Management, 57(4), 55.
40. Greene, F. J. and Hopp, C. (2017). *Are formal planners more likely to achieve new venture viability? A counterfactual model and analysis.* Strategic Entrepreneurship Journal, 1(1), 27–47.
41. Hair Jr, J. F., Hult, G. T. M., Ringle, C. and Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (pls-sem).* Sage Publications.

42. Hair Jr, J. F., Sarstedt, M., Ringle, C. M. and Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. Sage Publications.

43. Han, J. (2003). *Venture business and business strategy.* Seoul, Korea: Hongmoon Publishers, Inc.

44. Hansen, M. T., Chesbrough, H. W., Nohria, N. and Sull, D. N. (2000). *Networked incubators. Hothouses of the new economy.* Harvard Business Review, 78(5), 74–84, 199

45. Haron, H., Said, S., Jayaraman, K. and Ismail, I. (2013). *Factors influencing small medium enterprises (SMEs) in obtaining loan.* International Journal of Business and Social Science, 4(15), 182–195.

46. Herrmann, B.L., Marmer, M., Dogrultan, E. and Holtschke, D. (2012). *Startup ecosystem report 2012*. Telefónica digital partnered with Startup Genome.

47. Heydebreck, P., Klofsten, M. and Maier, J.C. (2000). *Innovation support for new technology-based firms: The Swedish Teknopol approach.* R&D Management, 30(1), 89–100.

48. Heydebreck, P., Klofsten, M. and Maier, J.C. (2000). *Innovation support for new technology-based firms: The Swedish Teknopol approach.* R&D Management, 30(1), 89–100.

49. Hudson, J. and Khazragui, H. F. (2013). *Into the valley of death: research to innovation.* Drug Discovery Today, 18(13), 610 - 613.

50. Intarakumnerd, P. and Ueki, Y. (2009). *Fostering production and science and technology linkages to stimulate innovation in Asean.* ERIA Research Project Report, 7, 1–496.

51. Isenberg, D. (2011). *The entrepreneurship ecosystem strategy as a new paradigm for economic policy: Principles for cultivating entrepreneurship (Babson Entrepreneurship Ecosystem Project).* Babson Park, MA: Babson College.

52. Karabag, S. F., & Berggren, C. (2014). *Antecedents of firm performance in emerging economies: Business groups, strategy, industry structure, and state support.* Journal of Business Research, 67(10), 2212–2223.

53. Kaufmann, A. and Tödtling, F. (2002). *How effective is innovation support for SMEs? An analysis of the region of Upper Austria*. Technovation, 22(3), 147–159.

54. Kee, D.M.H., Effendi, A.A., Talib, L.A.A. and Rani, N.A.B. (2011). *A preliminary study of top SMEs in Malaysia: Key success factor vs government support.* Journal of Global Business and Economics, 2(1), 48–58.

55. Keil, T., McGrath, R.G. and Tukiainen, T. (2009). *Gems from the ashes: Capability creation and transformation in internal corporate venturing.* Organization Science, 20(3), 601–620.

56. Kim, J. (2014). *Platform business and network strategy.* STI Policy Review, 5(1), 57–74.

57. Kohler, T. (2016). *Corporate accelerators: Building bridges between corporations and startups.* Business Horizons, 59(3), 347–357.

58. Korhonen J. et al., (2004). *Industrial ecology in the strategic sustainable development model: Strategic applications of industrial ecology*. Journal of Cleaner Production. 12(8-10):809-823

59. Kupec, V. (2018) *Risk Audit of Marketing Communication*. European Research Studies Journal, Vol XXI, No 1, pp 125-132.

60. Lasrado, V., Sivo, S., Ford, C., O'Neal, T. and Garibay, I. (2016). *Do graduated university incubator firms benefit from their relationship with university incubators?* The Journal of Technology Transfer, 41(2), 205–219.

61. LeBLANC, J. (2018) *What Exactly Is Scalability in Business?* 5 Keys for Success + 3 Business Organization Tools. Available at: https://www.infusionsoft.com/business-success-blog/growth/planning-strategy/what-is-scalability-in-business (Access: April 3, 2018).

62. Lee, M. (2012). *Homo mobilians*. Seoul, Korea: Bookconcert.

63. Lee, M. and Lee, J. (2010). *Super organic enterprise*. Seoul, Korea: Gimm-Young Publishers, Inc.

64. Lee, MH., Lee, M. and Kim, J. (2017). *A dynamic approach to the start- up business ecosystem: A cross-comparison of Korea, China, and Japan*. Asian Academy of Management Journal, 22(2), 157–184.

65. Li, Y. R. (2009). *The technological roadmap of Cisco's business ecosystem.* Technovation, *29*(5), 379–386.

66. Malhotra book. 6th ed. p. 403-414.

67. Mas-Verdú, F., Ribeiro-Soriano, D. and Roig-Tierno, N. (2015). *Firm survival: The role of incubators and business characteristics.* Journal of Business Research, 68(4), 793–796.

68. Mathews, J. A. (1997). *A Silicon Valley of the East: Creating Taiwan's semi conduct or industry.* California Management Review, 39, 26–54.

69. McGrath, R.G. (2010). *Business models: A discovery driven approach.* Long Range Planning, 43(2), 247–261.

70. McKelvey, M. and Lassen, A.H. (2013). *How entrepreneurs do what they do: Case studies of knowledge-intensive entrepreneurship.* Cheltenham: Edward Elgar Publishing.

71. Merchant, K. A. (1981). *The Design of the Corporate Budgeting System: Influences on Managerial Behavior and Performance*. The Accounting Review, 56(4), 813–829.

*72.* Miller, P. and K. Bound (2011). *"The Startup Factories." The rise of accelerator programmes to support new technologies.*

73. Moore, C. F. (1986). *Understanding Entrepreneurial Behavior: A Definition and Model.* Academy of management proceedings, Vol. 1986, 66–70.

74. Moore, J.F. (1993). *Predators and prey: A new ecology of competition.* Harvard Business Review, 71(3), 75–86.

75. Moore, J.F. (1996). *The death of competition: Leadership and strategy in the age of business ecosystems.* New York: Harper Business.

76. Morris, M.H., Shirokova, G. and Tsukanova, T. (2017). *Student entrepreneurship and the university ecosystem: A multi-country empirical exploration.* European J. International Management, Vol. 11, No. 1.

77. Nambisan, S. and Baron, R.A. (2013). *Entrepreneurship in innovation ecosystems: Entrepreneurs' self-regulatory processes and their implications for new venture success.* Entrepreneurship Theory and Practice, 37(5), 1071–1097.

78. Neck M. H. et al. (2004). *An Entrepreneurial System View of New Venture Creation*. Journal of Small Business Management 42(2):190 – 208.

79. PANUŠKA, J. (2018) *Startupový ekosystém.* Available at: http://startupisti.cz/startupovy-ekosystem/ (Access: January 27, 2018).

80. Pavlak, M., Petru, N. (2018) *Start-up ecosystem support in the Czech Republic.* ACTA VŠFS, vol. 12.

81. Pettersson, B., & Götsén, A. (2016). *Business Incubators-the savior of startups? An exploratory study on knowledge acquisition in a business incubator from a startup perspective.*

82. Prevezer M. (2001). *Ingredients in the Early Development of the U.S. Biotechnology Industry*. Volume 17, Issue 1-2, pp. 17–29.

83. Rothaermel, F. T. and Thursby, M. (2005). *University–incubator firm knowledge flows: assessing their impact on incubator firm performance*. Research Policy, 34(3), 305–320.

*84.* S. Dempwolf, J. Auer, and M. D'Ippolito, (2014) *Innovation accelerators: Defining characteristics among startup assistance organizations.*

85. Sandberg, W. R., & Hofer, C. W. (1987). *Improving new venture performance: The role of strategy, industry structure, and the entrepreneur*. Journal of Business venturing, 2(1), 5–28.

86. Schick H. et al., (2002). *Sustainability Issues for Start-Up Entrepreneurs*. Greener Management International. 38(38).

87. Schwartz, M. (2011). *Incubating an illusion? Long-term incubator firm performance after graduation.* Growth and Change.

88. Siegel S. D. et al., (2003). *Assessing the impact of organizational practices on the relative productivity of university technology transfer offices: an exploratory study*. Research Policy. 32(1):27-48

89. SME Corp. (2014). Malaysia annual report. Retrieved 20 September 2018 from http://www.smecorp.gov.my/index.php/en/resources/2015-12-21-11-07-06/sme- corp-malaysia-annual-report/book/63-sme-corp-malaysia-annual-report-2014/4- sme-corp-malaysia-annual-report

90. Soetanto, D. P., & Jack, S. L. (2013). *Business incubators and the networks of technology-based firms.* Journal of Technology Transfer, 38(4), 432–453.

91. Spilling, O.R. (1996). *The entrepreneurial system: On entrepreneurship in the context of a mega-event.* Journal of Business Research, 36(1), 91–103.

92. Temtime, Z.T. and Pansiri, J. (2004). *Small business critical success/failure factors in developing countries: Some evidences from Botswana.* American Journal of Applied Sciences, 1(1), 18–25.

93. Townsend, A.K. (2009). *Business ecology: Why most green business practices don't work... and what to do about it.* Atglen, PA: Schiffer Publishing Limited.

94. Van Gelderen, M., Thurik, R. and Bosma, N. (2005). *Success and risk factors in the pre- startup phase.* Small Business Economics, *24*(4), 365–380.

95. van Veen-Dirks, P. (2010). *Different uses of performance measures: The evaluation versus reward of production managers.* Accounting, Organizations and Society, 35(2), 141–164.

96. van Weele, M., van Rijnsoever, F. J. and Nauta, F. (2017). *You can't always get what you want: How entrepreneur's perceived resource needs affect the incubator's assertiveness.*

97. Voisey Pam, Lynne Gornall, Paul Jones, and Thomas Brychan. (2006). *"The Measurement of Success in a Business Incubation Project*." Journal of Small Business and Enterprise Development, 13.3, 454 – 468.

98. von Zedtwitz, M. (2003). *Classification and management of incubators: aligning strategic objectives and competitive scope for new business facilitation.* International Journal of Entrepreneurship and Innovation Management, 3(1-2), 176–196.

99. Wouters, M., & Wilderom, C. (2008*). Developing performance-measurement systems as enabling formalization: A longitudinal field study of a logistics department*. Accounting, Organizations and Society, 33(4–5), 488–516.

100. Zacharakis, A.L., Shepherd, D.A. and Coombs, J.E. (2003). *The development of venture-capital-backed internet companies: An ecosystem perspective.* Journal of Business Venturing, 18(2), 217–231.

101. Zahra, S.A. (2007). *Contextualizing theory building in entrepreneurship research.* Journal of Business Venturing, 22(3), 443–452.

102. Zahra, S.A. and Nambisan, S. (2012). *Entrepreneurship and strategic thinking in business ecosystems.* Business Horizons, *55*(3), 219–229.

103. Zahra, S.A. and Nambisan, S. (2012). *Entrepreneurship and strategic thinking in business ecosystems.* Business Horizons, 55(3), 219–229.

Sližytė E. (2019). *Paramos organizacijų įtakos startuolių vystymuisi tyrimas* (magistro baigiamasis darbas). Vilnius: Mykolo Romerio universitetas.

## ANOTACIJA

Šiame magistro baigiamajame darbe analizuojama ir įvertinama startuolių paramos organizacijų įtaka startuolių vystymuisi. Remiantis startuolių ekosistemos modeliu ir trimis pagrindinėmis startuolių plėtros ypatybėmis: veikla, svarba ir efektyvumu, startuolių paramos organizacijų įtaka, daroma startuolių augimui ir vystymuisi, yra aprašyta bei tikrinama empiriškai. Pirmajame magistro darbo skyriuje nagrinėjamos startuolių bei verslų ekosistemos. Antrajame skyriuje pristatomos startuolių paramos organizacijos bei analizuojami jų skirtumai. Trečiajame šio darbo skyriuje pateikiami tyrimai ir metodikos apie startuolių paramos organizacijų įtaką startuolių kūrimuisi ir vystymuisi, taip pat iškeliamos pagrindinės tyrimo hipotezės. Ketvirtajame šio magistro darbo skyriuje susisteminami tyrimo metu gauti respondentų duomenys, patvirtinamos ar atmetamos hipotezės bei aprašomos išvados. Penktajame skyriuje yra pateikiamos išvados bei siūlymai, kaip didinti startuolių paramos organizacijų įtaką, bei, kaip paspartinti tikslingą startuolių vystymąsi, taip pat išdėstomos empirinio tyrimo metu atsiskleidusios problemos.

**Pagrindiniai žodžiai:** startuolių paramos organizacijų įtaka, startuolių vystymasis, veikla, efektyvumas, svarba.

Sližytė E. (2019). *Analysis of the impact of support organisations on start-up development* (Master thesis). Vilnius: Mykolas Romeris University

## ANOTATION

In this Master thesis start-up support organisations influence over start-up development is analysed and assessed. According to the start-up ecosystem model and three main characteristics of start-up development: performance, importance and effectiveness, start-up support organisations impact for the start-up development is presented and is empirically tested based on survey analysis. In the first part of the Master thesis business and start-up ecosystems are analysed and presented. In the second part of the Master thesis support organisations of start-up ecosystem are presented and their differences are analysed. In the third part of the Master thesis investigations, research and methodologies about start-up support organisations impact on start-up development are presented. In the fourth part of the Master thesis the hypotheses are tested and analysis of responses is presented, the influence of support organisations on start-up development is being assessed and conclusions are made. In the fifth part of the Master thesis the conclusions and suggestions on how to increase start-up development are proposed.

**Key words:** Start-up support organisations impact, start-up development, performance, effectiveness, importance.

Sližytė E. (2019). *Paramos organizacijų įtakos startuolių vystymuisi tyrimas* (magistro baigiamasis darbas). Vilnius: Mykolo Romerio universitetas.

## SANTRAUKA

Supratimas, kokią įtaką skirtingos paramos organizacijos daro startuoliams, kaip tai gali padėti kuriant bei plėtojant naujas įmones, yra labai aktuali tema, aptariama bei analizuojama šiame magistro darbe. Šiuo metu dalis veiklą pradedančių verslininkų ir investuotojų vertina galimybes pradėti kurti naują įmonę, kurios forma būtų startuolis, arba planuoja tam tikru būdu tapti startuolių dalimi. Be to, skirtingų paramos organizacijų reikšmingumo ir poveikio analizė startuoliams yra svarbus veiksnys, apžvelgiant būsimų patobulinimų galimybes ir reikšmingumą.

Daugelis mokslininkų, tyrinėjančių šią sritį, pastebi, kad norint sukurti tvarią verslo pradžios aplinką, svarbų vaidmenį vaidina įvairūs verslo ekosistemų aspektai. Pradinę ekosistemą sudaro įvairūs suinteresuoti subjektai, tokie kaip: akcininkai, išradėjai, įkūrėjai, rizikos kapitalistai, ´´angelai´´ investuotojai, rinkodaros specialistai, planuotojai. Visos suinteresuotosios šalys bendradarbiauja kaip sistema, kuri siekia suteikti pagalbą, kai steigimas ir plėtojamas verslas. Tyrimai taip pat rodo, kad įvairios paramos organizacijos daro skirtingą įtaką naujai įsteigtoms įmonėms, pavyzdžiui, universitetai, finansavimo organizacijos ar paramos tinklai. Tyrimai pateikia įžvalgų, kad pagrindinė priežastis, dėl kurios kai kurios naujai įsteigtos įmonės žlunga, yra ne vyriausybės paramos stoka, bet sudėtingas paramos programų pasiekiamumas.

Ankstesniuose tyrimuose buvo nustatyta, kad keli veiksniai daro tam tikrą įtaką startuolių veiklos augimui, naudojantis netgi tik vienos paramos organizacijos pagalba. Nepaisant to, skirtingų verslą remiančių organizacijų įtaka naujų startuolių augimui ir veiklos rezultatams nebuvo kiekybiškai ištirta, atsižvelgiant visus galimus elementus, žinomus iš kitų tyrimų. Štai kodėl pagrindinis šio tyrimo tikslas yra įvertinti paramos organizacijų svarbą ir pagalbą pradedant verslą.

Apžvelgtuose straipsniuose pagrindiniai ir dažniausiai aprašomi pradedančių įmonių aspektai, kuriems įtakos turi paramos organizacijos, buvo šie: našumas, efektyvumas, svarbumas, taip pat įtaka pradedančių įmonių plėtrai ir jų augimui. Šio tyrimo hipotezes galima suskirstyti į dvi pagrindines dalis - priklausomų kintamųjų įtaką pradedančiojo verslo plėtrai bei ryšių tarp startuolio augimo ir startuolių paramos organizacijų panaudojimo ryšius. Šiame tyrime buvo naudojamas tyrimas apie paramą teikiančių organizacijų įtaką pradedančiųjų įmonių plėtrai, jis buvo paskelbtas internete.

Tyrimas atskleidė, kad dažniausiai naudojamos ir bendradarbiaujančios su startuoliais pradedančiųjų paramos organizacijos buvo inkubatoriai, finansuojančios organizacijos ir akseleratoriai. Tyrimas taip pat parodė, kad paramos organizacijų teikiama parama padėjo besikuriančioms įmonėms

vystytis ir augti. Startuolių įkūrėjams labai svarbu turėti keletą gairių, nes jų kuriamas verslas yra labai trapus pradinėje steigimo stadijoje.

Magistro darbo pabaigoje pateikiamos išvados ir pasiūlymai apie paramos organizacijų poveikį startuolių kūrimui ir vystymuisi.

Sližytė E. (2019). *Analysis of the impact of support organisations on start-up development* (Master thesis). Vilnius: Mykolas Romeris University

## SUMMARY

Understanding how different support organisations impact star-ups, how it can help in building and developing start-ups is a very relevant subject discussed and analysed in this master's thesis. Nowadays many entrepreneurs, new businesses and investors are evaluating possibilities to start a new business venture in a form of a start-up or in a way become a part of it. Also, analysing the significance and impact of different support organisations for star-ups is an important factor for evaluating opportunities for future improvements and possibilities.

Many researchers investigating this field note that in order to develop a sustainable environment for a start-up, various aspects of business ecosystems play a valid role. Start-up ecosystem consists of various stakeholders, like inventors, founders, venture capitalists, angel investors, marketers, planners. All stakeholders co-operate as a system in order to set up and develop start-up businesses. Researches also show that different types support organisations impact start-ups, for example, universities, funding organisations, support networks. Studies provide insights that the main reason why some start-ups fail is not lack of support from government, but hard accessibility to use the support programs.

In previous researches several factors have been identified as having some influence on start-up performance growth while using the help of one support organisation. Nevertheless, the influence of several start-up support organisations on start-up growth and performance has not been validated quantitatively by including all possible elements known from other researches. That's why the main goal of this research is to evaluate support organisations importance and comprehension of help on start-up development.

In reviewed articles the main and mostly described aspects of start-ups that are affected by support organisations were – Performance, Effectiveness, Importance and also influence on start-up development and start-up growth. Hypotheses of this research can be separated into two main parts – influence of independent variables on Start-up development and correlation of relationships between actual Start-up growth and usage of Support organisations. Instrument used in this research was the survey about support organisations impact on start-up development, it was published online.

The study revealed that most widely used and collaborated start-up support organisations were – incubators, funding organisations and accelerators. Study also shown that the support provided by start-up support organisations helped start-ups to evolve and grow. It is very important for a start-up in the beginning to have some guidelines as the business is very new and fragile.

At the end of the master thesis, conclusions and suggestions on the analysis of the impact of support organisations on start-up development are presented.

## ANNEXES

### Annex 1. Questionnaire.

1. Have you ever used the help of start-up support organisation(s)? Yes; No
2. If you answered ‘yes’ to the first question, which type(s) of support organisations you were collaborating with: (mark one or more)
    a) universities
    b) incubators
    c) accelerators
    d) management accounting services
    e) funding organisations
    f) support networks
3. Are you confident that your company will be more successful after using the help of our chosen start-up support organistion(s)? Yes; No
4. If you answered ‘yes’ to the third question, which start-up support organisation(s) you are confident about? (mark one or more)
    a) universities
    b) incubators
    c) accelerators
    d) management accounting services
    e) funding organisations
    f) support networks

**What are the impacts of support organisations to your company? (Evaluate from 1 to 7)**

1 - Completely False; 2 - Somewhat False 3- Slightly False; 4 - Neither True nor False; 5 - Slightly True; 6 - Somewhat True; 7 - Completely True

5. There is increase in company sales turnover (revenue generation) after using support organisation(s) help

6. Our employee number is increasing after working with support organisation(s)
7. There is increasing number of investments and fundings after using the services of support organisation(s)
8. I see that our product potential profit has increased after participating in support organisation(s) programs
9. Our employee average wage has increased after using the help of support organisation(s)
10. I think, we improve our business knowledge and skill while working with support organisation(s)
11. After using the services of support organisation(s), our company team has become more professional
12. I think, we have established productive networking with other tenants while working with support organisation(s)
13. Our company reputation and credibility in the market has increased after using the services of support organisation(s)
14. Our company team become more productive after working with support organisation(s)
15. Our product development time to market has become faster after using support organisation(s) help
16. Our company competitiveness in the market has increased after participating in support organisation(s) programs
17. In my opinion, we have faster access to critical stakeholders (supplier, customer, professional support, etc). after working with support organisation(s)
18. The information received from support organisations was valuable and helped our business to evolve
19. Which one of these support organisations helped the most for new venture establishment: (mark one)
    a) universities
    b) incubators
    c) accelerators
    d) management accounting services
    e) funding organisations

f) support networks

20. Your age: <26; 26-35; 36-45; 46-55; >55

21. Your gender: man; women

## Annex 2. Correlation table between variables

**Correlations**

| | | performance | effectiveness | importance | 18. The information received from support organisation (s) was valuable and helped our business to evolve |
|---|---|---|---|---|---|
| performance | Pearson Correlation | 1 | .778** | .593** | .604** |
| | Sig. (2-tailed) | | .000 | .000 | .000 |
| | N | 260 | 260 | 260 | 260 |
| effectiveness | Pearson Correlation | .778** | 1 | .643** | .646** |
| | Sig. (2-tailed) | .000 | | .000 | .000 |
| | N | 260 | 260 | 260 | 260 |
| importance | Pearson Correlation | .593** | .643** | 1 | .663** |
| | Sig. (2-tailed) | .000 | .000 | | .000 |
| | N | 260 | 260 | 260 | 260 |
| 18. The information received from support organisation(s) was valuable and helped our business to evolve | Pearson Correlation | .604** | .646** | .663** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 260 | 260 | 260 | 260 |

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

**Annex 3. Regression analysis of all variables**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .729[a] | .532 | .527 | .682 |

a. Predictors: (Constant), importance, performance, effectiveness

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 135.241 | 3 | 45.080 | 97.051 | .000[b] |
| | Residual | 118.913 | 256 | .465 | | |
| | Total | 254.154 | 259 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Predictors: (Constant), importance, performance, effectiveness

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.175 | .295 | | -.592 | .554 |
| | performance | .209 | .089 | .163 | 2.356 | .019 |
| | effectiveness | .345 | .095 | .264 | 3.615 | .000 |
| | importance | .509 | .073 | .397 | 6.972 | .000 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

**Annex 4. Regression analysis of influence of variables on female perception on support organisations help.**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| | 21. Your gender = Woman (Selected) | | | |
| 1 | .800[a] | .640 | .633 | .616 |

a. Predictors: (Constant), importance, performance, effectiveness

**ANOVA[a,b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 106.593 | 3 | 35.531 | 93.710 | .000[c] |
| | Residual | 59.907 | 158 | .379 | | |
| | Total | 166.500 | 161 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 21. Your gender = Woman

c. Predictors: (Constant), importance, performance, effectiveness

**Coefficients[a,b]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.746 | .334 | | -2.231 | .027 |
| | performance | .158 | .098 | .124 | 1.602 | .111 |
| | effectiveness | .348 | .100 | .273 | 3.476 | .001 |
| | importance | .667 | .078 | .513 | 8.506 | .000 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 21. Your gender = Woman

**Annex 5. Regression analysis of influence of variables on male perception on support organisations help.**

**Model Summary**

| Model | R | 21. Your gender = Man (Selected) | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|---|
| 1 | .641[a] | | .411 | .392 | .737 |

a. Predictors: (Constant), importance, performance, effectiveness

**ANOVA[a,b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 35.647 | 3 | 11.882 | 21.876 | .000[c] |
| | Residual | 51.057 | 94 | .543 | | |
| | Total | 86.704 | 97 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 21. Your gender = Man

c. Predictors: (Constant), importance, performance, effectiveness

**Coefficients[a,b]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .526 | .539 | | .977 | .331 |
| | performance | .210 | .168 | .163 | 1.245 | .216 |
| | effectiveness | .579 | .216 | .419 | 2.682 | .009 |
| | importance | .130 | .154 | .105 | .847 | .399 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 21. Your gender = Man

**Annex 6. Influence of start-up support organisations help on start-up growth and development according to the age group 1 (26-35).**

**Model Summary**

| Model | R<br>20. Your age: = 26-35 (Selected) | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .687[a] | .472 | .456 | .759 |

a. Predictors: (Constant), importance, performance, effectiveness

**ANOVA[a,b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 53.497 | 3 | 17.832 | 30.942 | .000[c] |
| | Residual | 59.938 | 104 | .576 | | |
| | Total | 113.435 | 107 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 26-35

c. Predictors: (Constant), importance, performance, effectiveness

**Coefficients[a,b]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -.228 | .538 | | -.423 | .673 |
| | performance | .150 | .157 | .107 | .953 | .343 |
| | effectiveness | .570 | .163 | .403 | 3.500 | .001 |
| | importance | .340 | .137 | .251 | 2.483 | .015 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 26-35

**Annex 7. Influence of start-up support organisations help on start-up growth and development according to the age group 2 (36-45).**

**Model Summary**

| Model | R | 20. Your age: = 36-45 (Selected) | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|---|
| 1 | | .776[a] | .603 | .589 | .603 |

a. Predictors: (Constant), importance, performance, effectiveness

**ANOVA[a,b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 49.693 | 3 | 16.564 | 45.486 | .000[c] |
| | Residual | 32.775 | 90 | .364 | | |
| | Total | 82.468 | 93 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 36-45

c. Predictors: (Constant), importance, performance, effectiveness

**Coefficients[a,b]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -.260 | .448 | | -.580 | .563 |
| | performance | .380 | .122 | .332 | 3.103 | .003 |
| | effectiveness | .254 | .146 | .220 | 1.745 | .084 |
| | importance | .449 | .117 | .344 | 3.843 | .000 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 36-45

**Annex 8. Influence of start-up support organisations help on start-up growth and development according to the age group 3 (46-55).**

**Model Summary**

| Model | R | 20. Your age: = 46-55 (Selected) | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|---|
| 1 | .772[a] | | .597 | .573 | .601 |

a. Predictors: (Constant), importance, effectiveness, performance

**ANOVA[a,b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 26.754 | 3 | 8.918 | 24.663 | .000[c] |
| | Residual | 18.079 | 50 | .362 | | |
| | Total | 44.833 | 53 | | | |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 46-55

c. Predictors: (Constant), importance, effectiveness, performance

**Coefficients[a,b]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .894 | .646 | | 1.384 | .172 |
| | performance | -.235 | .229 | -.162 | -1.024 | .311 |
| | effectiveness | .149 | .214 | .096 | .698 | .488 |
| | importance | .905 | .129 | .826 | 7.012 | .000 |

a. Dependent Variable: 18. The information received from support organisation(s) was valuable and helped our business to evolve

b. Selecting only cases for which 20. Your age: = 46-55

**Annex 9. Crosstabs of variables – age and gender differences.**

**18. The information received from support organisation(s) was valuable and helped our business to evolve * 20. Your age: Crosstabulation**

Count

| | | 20. Your age: | | | | |
|---|---|---|---|---|---|---|
| | | <26 | 26-35 | 36-45 | 46-55 | Total |
| 18. The information received from support organisation(s) was valuable and helped our business to evolve | Somewhat False | 0 | 4 | 0 | 0 | 4 |
| | Slightly False | 0 | 0 | 6 | 12 | 18 |
| | Neither True nor False | 3 | 38 | 26 | 13 | 80 |
| | Slightly True | 0 | 31 | 40 | 25 | 96 |
| | Somewhat True | 1 | 33 | 18 | 4 | 56 |
| | Completely True | 0 | 2 | 4 | 0 | 6 |
| Total | | 4 | 108 | 94 | 54 | 260 |

**18. The information received from support organisation(s) was valuable and helped our business to evolve * 21. Your gender Crosstabulation**

Count

| | | 21. Your gender | | |
|---|---|---|---|---|
| | | Man | Woman | Total |
| 18. The information received from support organisation(s) was valuable and helped our business to evolve | Somewhat False | 3 | 1 | 4 |
| | Slightly False | 3 | 15 | 18 |
| | Neither True nor False | 25 | 55 | 80 |
| | Slightly True | 42 | 54 | 96 |
| | Somewhat True | 25 | 31 | 56 |
| | Completely True | 0 | 6 | 6 |
| Total | | 98 | 162 | 260 |

**Annex 10. Crosstabs. "Are you confident that your company will be/is more successful after using the help of our chosen start-up support organisation(s)?"**

## Crosstabs

### Case Processing Summary

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| 3. Are you confident that your company will be/is more successful after using the help of our chosen start-up support organization(s)? * 20. Your age: | 260 | 100.0% | 0 | 0.0% | 260 | 100.0% |

### 3. Are you confident that your company will be/is more successful after using the help of our chosen start-up support organization (s)? * 20. Your age: Crosstabulation

Count

| | | 20. Your age: | | | | |
|---|---|---|---|---|---|---|
| | | <26 | 26-35 | 36-45 | 46-55 | Total |
| 3. Are you confident that your company will be/is more successful after using the help of our chosen start-up support organization(s)? | Yes | 4 | 106 | 93 | 52 | 255 |
| | No | 0 | 2 | 1 | 2 | 5 |
| Total | | 4 | 108 | 94 | 54 | 260 |

**Annex 11. Frequency. Which one of these support organisations helped the most for new venture establishment: (mark one)"?**

**Statistics**

19. Which one of these support organisations helped the most for new venture establishment: (mark one)

| | | |
|---|---|---|
| N | Valid | 260 |
| | Missing | 0 |

**19. Which one of these support organisations helped the most for new venture establishment: (mark one)**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | universities | 17 | 6.5 | 6.5 | 6.5 |
| | incubators | 64 | 24.6 | 24.6 | 31.2 |
| | accelerators | 49 | 18.8 | 18.8 | 50.0 |
| | management accounting services | 22 | 8.5 | 8.5 | 58.5 |
| | funding organisations | 60 | 23.1 | 23.1 | 81.5 |
| | support networks | 48 | 18.5 | 18.5 | 100.0 |
| | Total | 260 | 100.0 | 100.0 | |

**Annex 12. Frequency. Frequency. "The information received from the support organisation(s) was valuable and helped our business to evolve?"**

**Statistics**

18. The information received from support organisation(s) was valuable and helped our business to evolve

| | | |
|---|---|---|
| N | Valid | 260 |
| | Missing | 0 |

**18. The information received from support organisation(s) was valuable and helped our business to evolve**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Somewhat False | 4 | 1.5 | 1.5 | 1.5 |
| | Slightly False | 18 | 6.9 | 6.9 | 8.5 |
| | Neither True nor False | 80 | 30.8 | 30.8 | 39.2 |
| | Slightly True | 96 | 36.9 | 36.9 | 76.2 |
| | Somewhat True | 56 | 21.5 | 21.5 | 97.7 |
| | Completely True | 6 | 2.3 | 2.3 | 100.0 |
| | Total | 260 | 100.0 | 100.0 | |

# PATVIRTINIMAS APIE ATLIKTO DARBO SAVARANKIŠKUMĄ

20.19 m. 12 mėn. 12 d.

Vilnius

Aš, Mykolo Romerio universiteto (toliau – Universitetas),

Ekonomikos ir verslo fakultetas / E-Business Management

*(fakulteto / instituto, programos pavadinimas)*

Studentas (-ė) Elžbieta Sližytė,

*(vardas, pavardė)*

patvirtinu, kad šis magistro baigiamasis darbas

„THE ANALYSIS OF THE IMPACT OF SUPPORT ORGANISATIONS ON START-UP DEVELOPMENT

“:

1. Yra atliktas savarankiškai ir sąžiningai;
2. Nebuvo pristatytas ir gintas kitoje mokslo įstaigoje Lietuvoje ar užsienyje;
3. Yra parašytas remiantis akademinio rašymo principais ir susipažinus su rašto darbų metodiniais nurodymais.

Man žinoma, kad už sąžiningos konkurencijos principo pažeidimą – plagijavimą studentas gali būti šalinamas iš Universiteto kaip už šiurkštų akademinės etikos pažeidimą.

*(parašas)*

Elžbieta Sližytė

*(vardas, pavardė)*