MASTER'S THESIS

A COMPREHENSIVE PERFORMANCE MEASUREMENT OF BUSINESS INCUBATORS
AUTHORSHIP STATEMENT

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INTRODUCTION

Business incubators are a growing phenomenon with great potential for further development. They provide a nurturing environment for companies in their early stages of operations. Due to high failure rates of startup companies, many entrepreneurs seek external help. One option for them, is joining a business incubator.

The Majority of business incubators are public and need additional funding (government subsidies or outside funding), to run their operations normally. Further, the importance of business incubator growth is mainly being overlooked, as the investors try to allocate their funds in the most efficient manner. Due to this, they only fund perspective projects with concrete plans and measurable outcomes. This is contrary to the research of several authors (Colombo & Delmastro, 2002; Lewis, 2001; Mian, 1996a; Phan, Siegel & Wright, 2005) which have proven that business incubators work; although it is very hard to measure their performance. Business incubator (BI) performance has been an unsolvable puzzle for years. Certain authors (Bergek & Norrman, 2008; Hackett & Dilts, 2004a; Merrifield, 1987; Vanderstraeten, MatthysSENS & WITteLOoSTUijn, 2012) have tried to find appropriate indicators to measure the performance and build a performance evaluation model. Quantifiable performance indicators would make it easier for BI managers to get their subsidies, and for the investors to see the value of BIs.

The goal of this study is to improve what has already been done in the field of BI performance. This can be achieved by connecting previous successful data, and creating a new, wider reaching model that incorporates relevant data from all previous models. For connecting, I will gather success and performance factors used by previous authors, analyze this data, and build a new model to assess BI performance. Through building a model applicable to more than just one business incubator, a step will be taken toward building a generalized model suitable for the majority of BIs. Lastly, this improved model will be tested on a sample of Slovenian business incubators.

The work performed herein could be valuable for three important groups of people, when talking about BIs:

1. Startups that have problems choosing BIs. With performance measurement tools, they could assess and find the appropriate BI for them.
2. Investors, which could finally see the potential of BIs, and measure the performance relevant for them.
3. BI managers, who could attract new startups and additional funding. This tool could also be used to improve the services they provide.
1. LITERATURE REVIEW

1.1 Business incubators

1.1.1 History

The opening of the first official business incubator took place in Batavia, New York, USA in 1959. After closing of one of the major manufacturing plants in the area, residents and their local government took matters into their own hands. The buildings that were left behind were given a new purpose, they became mixed-use incubators (Lewis, 2001). Joseph Mancuso who was in charge of the incubator at the time, probably had no idea as to the importance of this innovation. Mancuso’s intention was to decrease unemployment, and make money. After failing to rent the buildings to a single company, he decided to divide them, and rent separately to several businesses. Mancuso wanted to help new companies by providing them low rent office space, business advice, and better ability to raise capital (About NBIA, 2016). Since that time, Business incubators have changed dramatically. Further it has been estimated, that the number of business incubators in the United States grew from 12 in 1980 to astonishing 1,250 in 2012 (Knopp, 2012). On a global basis, the number has been estimated at around 7000 BIs today.

1.1.2 Reasons for development

With the occurrence of economic downfalls, communities were forced to find alternatives on how to kick-start economies. According to Acs (2006) entrepreneurship is important for growth of the economy. With the creation of new business, job opportunities are created, competition is intensified, and productivity may be boosted through technological change. He believes there are two reasons to become an entrepreneur: either you have no other option, or you see an unexploited business opportunity. Organization for Economic Co-operation and Development (OECD), released a report that states 95% of all firms inside the OECD are Small and medium-sized enterprises (SME), and SMEs account for 60-70% of total employment (OECD, 2000). SMEs are even more influential in the European Union (EU), where they represent 99% of all firms. Newly created enterprises have a huge impact on the development of certain industry sectors and geographic regions. They are a major source of new jobs, sales and innovation in a majority of economies (OECD, 2000; European Commission, 2000; Phan, Siegel & Wright, 2005). Policy makers are aware of the importance small new businesses have on the development of economies; they are further aware of the high failure rates of new companies. According to Timmons (1990), it has been estimated that 40% of new ventures fail in their first year, and 90% fail over 10 years (Timmons, 1990). Due to this high failure rate, policy makers are keen to assist new firms as much as possible, in order to create successful companies (Peña, 2004). This scenario is where business incubators step into the frame. Study carried out by European
Commission (2002), showed that survival of incubated companies was much higher (80-90% still exist after 5 years) than survival of the broader SME public.

1.1.3 Business Incubators

Business incubators are organizations, which provide nurturing environments (Lin, Wood & Lu, 2012; Mian, 1996a; Peña, 2004) for faster development and growth (Hackett & Dilts, 2008) of new companies called startups. Incubators create controlled conditions favorable for hatching or developing (Smilor, 1987). Business Incubators give new companies much needed time to adapt and survive the difficult early years (Peña, 2004). When talking about business incubation, four components have received above average attention (see Aernoudt, 2004; Allen & McCluskey, 1990; Bergek & Norrman, 2008; Chan & Lau, 2005; Colombo & Delmastro, 2002; Hackett & Dilts, 2004a; Hackett & Dilts, 2004b; Mian, 1996a; Rice, 2002; Smilor, 1987):

- **shared office space** (e.g., company headquarters, conference room, lunch room)
- **shared support services** (e.g., phone answering, receptionist, security, janitorial service)
- **professional business support or advice** (e.g., legal, financial, marketing and business advice in general)
- **network establishment** (e.g., new business connections, expanding the network, access to new markets)

Through years of research, authors were emphasizing different components. The first wave of research acknowledged the importance of the shared office space and administrative services. Later they figured that business support and networking might be more vital than shared office space (Bergek & Norrman, 2008).

1.1.4 Different types of business incubators

There are several possible classifications of BIs. However, the most general way to distinguish incubators is if they cater to: for profit/private, or nonprofit/public businesses. The vast majority are nonprofit (above 80 percent) and a minority are for profit. Even though for profit incubators try to achieve return on shareholders’ investment and nonprofit are focused on economic development, they have some shared goals (Bollingtoft & Ulhøi, 2005; Lyons & Li, 2003). In both cases, BIs try to: increase the survival rate and growth of new companies, enhance economic development, and reduce unemployment. Through coaching the entrepreneurs and involving established companies, BIs are helping the community evolve (Bhabra-Remedios & Cornelius, 2003; Nolan, 2003; OECD, 1997; Peters, Rice & Sundararajan, 2004; Phillips, 2002)
Grimaldi and Grandi (2005) mapped business incubators into four categories: Business Innovation Centres (BICs), University Business Incubators (UBIs), Independent Private Incubators (IPIs), and Corporate Private Incubators (CPIs).

Incubators were presented to decrease the failure rate of new ventures, and to speed up the process of business creation. Governments, development agencies and other public institutions were keen to back public incubators. With the support of the European Commission in roughly 1984, BICs were the first type of public incubators in Europe. They offered fundamental services to their startups: office space, facilities, communication channels, recognition, financial mediation, etc. They have been the most popular and extensive type of incubator used (Grimaldi & Grandi, 2005).

UBIs are the second type of public incubators. Science contributes a lot to the development of regional economies. Therefore, policy makers requested that Universities contribute time, and resources to aid their cause (Mian, 1996a). Universities mainly focus on education, but can also contribute through discoveries or inventions that can become: patents, spin-off ventures and technology transfers (Mansfield, 1990; Rogers, 1986). UBIs work is similar to BICs, with focus on the transfer of knowledge and technology from universities to the companies (Grimaldi & Grandi, 2001). In addition, on top of the services provided by the BICs, UBIs also provide University related services: library, access to university computer labs, faculty consultants, R&D insight, student employees, employee education and training, social gatherings, etc. (Mian, 1996a).

Initial excitement for public incubators has declined substantially over time, and their effectiveness as an economic development tool has been questioned (Autio & Klofsten, 1998; Sherman, 1999). Adapting to the needs of companies and differences of the services provided by the incubator has become important (Grimaldi & Grandi, 2005). Further the rise of the IT revolution in the second part of 1990s, brought growth of private incubators. Private incubators aspire to create new ventures quickly, and in return take a portion of startup’s equity (Chinsomboon, 2000; Hansen, Chesbrough & Sull, 2000).

Private incubators have different ways to raise money. They can charge for their services and rent out their facilities, or even take ownership percentages in the startups. Private incubators have taken over the role of business angels and venture capitalists in the early stage of company development. With their financial help, startups can emerge much faster and better prepared for their Initial public offering (IPO). Private incubators offer a similar range of services as the public business incubators (Grimaldi & Grandi, 2005).

There are two categories of private incubators: Corporate Business Incubators (CPI) and Independent Business Incubators (IPI). CPIs are owned and set up by large corporations with the desire to support new business units (Von Zedtwitz, 2003). These incubators
manage startups that are corporate spin-offs or results of diversification strategies, as well as generic start-ups.

Independent private incubators are established by individuals, groups of individuals or companies. They invest their own money to help startups grow and in return, take an equity stake in the company. IPIs sometimes work similar to business accelerators, and only help already established companies with finances and know-how (Von Zedtwitz, 2003).

1.2 Business incubator performance

Over the years, several authors (Smilor, 1987; Mian, 1996a; Hackett & Dilts, 2004a; Bergek & Norrman, 2008) have tried different approaches to assess the performance, and success of business incubators. However, it can be hard to generalize the performance measurements, because each incubator has its own goals and missions; further there are also different perceptions of success.

Through exploration of the field, Smilor (1987) assembled a table that shows different incubator types and their priorities/goals. He assumed those priorities are: job creation, profits, economic development, economic diversification, tax base expansion and investment opportunity. Smilor stressed the importance of implementing critical success factors in incubator operations, in order to achieve those goals. According to him, there is a direct correlation between successful incubators, and implementation of success factors. Further, it was noted that communication is key for successful cooperation between the incubator and the incumbent.

Allen and McCluskey (1990) believed job creation and the number of graduated firms are main indicators to assess business development. They tested this claim using two control variables in a regression model: age of the facility, and number of tenants.

Mian (1996a, 1996b) proved that University technology business incubators do bring added value to startups, with their provision of services and facilities. University incubators therefore offer a supportive environment to accelerate growth and survival of their customers. Next year Mian (1997) developed performance assessment framework for university business incubators. He built the model from three performance dimensions: program sustainability and growth, tenant firm’s survival and growth, and contributions to the sponsoring university’s mission.

According to the research done by Lewis (2001), business incubators are an effective development tool for creation of new enterprises and jobs. Business incubators provide
higher survival rates for startups than the general population. Most incubator graduates stay in the local area, and provide additional value by paying taxes and offering jobs.

Colombo and Delmastro (2002) compared incubated and non-incubated firms. They found out that the performance of the incubated firms rose after entry and their growth rates increased. This proved, business incubators do in fact add value to newly established firms. Additionally, incubated companies also have better access to public subsidies.

Rice (2002) found it hard to identify performance measures in business incubation; and performance in terms of changeability of co-production outputs (business assistance), was chosen. In order to achieve success and improve the probability of new firm survival, Rice assumed co-production of business assistance was vital. In terms of growth, survival is necessary but inadequate. Instead of growth, some companies are more focused on sustainability of new ventures. Growth is a preferred measure of success for incubator managers and other stakeholders. The main Macroeconomic aspect of success is economic impact (job creation).

According to Peña (2004), human capital of the entrepreneur affects new business survival, and growth the most. Well educated entrepreneurs with experience in business, and management supposedly perform better than their colleagues with opposite characteristics. Peña (2004) believes management training and assistance services are the only growth accelerators business incubators can offer to their incubants. However, it is noted that venture success could be enhanced, with additional work on networking opportunities. The author also questions incubation of un-effective startups, who take away resources from potential effective ones.

Rudy Aernoudt (2004) warned that evaluation of incubator impact, needs consideration of different types of incubators. His performance measures consist of: square footage, graduate survival rate, number of tenants, number of employees, jobs created and percentage of graduates remaining in community. Aernoudt (2004) also stressed the underdevelopment of business angel networks and seed financing. Most startups are financially incapable and therefore need outside funding in order to survive.

Hackett and Dilts (2004a) tried to measure business incubator performance more holistically. They believe performance depends on three indicators: selection of startups, monitoring and business assistance intensity and resource munificence. Business incubators choose certain startups according to their own criteria and help them as much as possible by providing services, advice and finances. The goal is graduation with growth and financial stability of the graduates. Success of the incubator is also to foresee failure and terminate operations in timely manner to avoid losses. Incubator performance was
measured by the growth and financial performance of the tenant, at the time of graduation. In the table they presented, there are five possible incubation outcomes.

In their next work Hackett and Dilts (2004b) wrote a review of business incubation research. They found lack of research focused on measures of success in business incubation. Most annual incubation performance reports are measuring final outcomes, instead of the process of incubation.

Chan and Lau (2005) developed assessment framework for technology incubators. The framework is composed out of nine assessment criteria: pooling resources, sharing resources, consulting, public image, networking, clustering, geographic proximity, costing and funding. The results show the exaggeration of usefulness an incubator brings to the startup. According to this study services like networking and consulting are presented more for advertising purposes.

Rothaermel and Thursby (2005b) used four indicators to assess performance of incubated firms: revenues, total funds obtained, venture capital (VC) funding received and graduation. Revenues were found to be the worst measurement, since young companies reinvest most of their money into future growth and have low revenues. Being funded by VC or total funding obtained seemed to assess performance much better. Graduation was also found to be a potential measurement if used with caution. Some startups still graduate, but not in timely manner.

Aerts, MatthysSENS and VandenbemP (2007) presented the importance of screening practices used by incubators. In order to decrease tenant failure, business incubators should use diversified set of criteria for screening new tenants. Potential tenants should be aware of these screening practices and prepare better in order to get accepted. Over long period of time, demanding incubators will be able to offer better services. Study also revealed specialized business incubators (focused on fewer sectors) operate better in their field than generalist.

Bergek and Norrman (2008) were aware, how important it was to identify performance. According to them, previous literature was focused on business incubation outcomes too much. They preferred building on a holistic approach similar to Hackett and Dilts (2004a). Different incubator goals and models need to be taken into consideration. Purpose of this research, was to develop a framework to identify best practices and performance, for general population of business incubators. The model consists out of three components: selection, business support and mediation. Each incubator has their own selection criteria for new tenants, offers wide variety of services, different varying degrees of interference and mediation strategies. Applying this framework will distinguish different incubators and their performances.
Vanderstraeten, Matthysens and Witteloostuijn (2012) discuss the change of research flow, from traditional (cost accounting approach) to more holistic set of measurements (Johnston, Brignall, & Fitzgerald 2002; Neely et al. 2000; Neely 2005). Majority of business incubators are non-profit organizations, which means using only financial measurements to assess them is not enough (Voisey et al., 2006). In their research (Vanderstraeten et al., 2012), review the performance measurement literature. They discovered most performance measurements are goal oriented. Therefore, a more balanced approach to measure performance is needed. Applying incubatee satisfaction and incubation process measurements could be beneficial.

Lin, Wood and Lu (2012) researched impact of resource, and capability models on enhancement of service performance of incubators. They advise incubator managers to invest in external resources and networking capabilities in order to increase the performance of the incubator. Research also showed possibility of negative impact government funding has on business incubator performance.

As seen in the literature review, a gap has been revealed in the research, focused on the measurements of success in business incubation. The initial wave of researchers built on the importance of the incubator outcomes, while later they preferred a more thorough holistic approach. In this sense, holistic refers to not only a way that assesses the outcome, but also the entry, and process of incubation.

2. CONCEPTUALIZATION OF BUSINESS INCUBATOR PERFORMANCE MEASURE

2.1 Introduction to general terms

When talking about success and performance of business incubators, we must first define both words. Success is: “the achieving of desired results” (Procter, 1995, p. 1454). As mentioned before, the goal of business incubators is: to increase the survival rate, and growth of new companies, to enhance economic development, and reduce unemployment. Therefore, it is reasonable to measure success as the degree to which those goals are achieved. According to Procter (1995): “The performance of a person or machine is how well they do a piece of work or activity” (Procter, 1995, p. 1048). Consequently, if we want to assess incubator performance, we need to establish clear benchmarks, and indicators to compare with actual accomplishments.

Perusing literary sources, I explored different approaches on how to assess success and performance of Business Incubators (BIs). Two particular papers caught my eye: Works by: Hackett and Dilts’s (2004a) “A real options-driven theory of business incubation”, and
Berger and Norrman’s (2008) “Incubator best practice: A framework”. Of note, both these works have built a more holistic model to measure performance. Hackett and Dilts (2004a) developed a theory of business incubation, attempting to explain business incubator performance. According to the authors, performance depends on three incubator related parameters: selection performance, monitoring and business assistance intensity, and resource munificence. Through connecting these dimensions, they have built a model and described it with a function written below in Figure 1.

*Figure 1: Business incubation performance model*

\[
BIP = f(SP + M&BAI + RM)
\]

where
- BIP = business incubation performance
- SP = selection performance;
- M&BAI = monitoring and business assistance intensity; and
- RM = resource munificence.


Even though this model takes into consideration many important aspects of performance, I saw the opportunity to improve it. That is why I would like to present an additional dimension in this function called graduation. By adding this additional dimension, my model will be an improved and bettered version of the model used by Hackett and Dilts (2004a).

\[
BIP = f(SP + M&BAI + RM + GR)
\]

Where
- BIP = business incubation performance
- SP = selection performance
- M&BAI = monitoring and business assistance intensity
- RM = resource munificence; and
- GR = graduation

In the following sections each dimension/parameter will be acknowledged, presented and explained.
2.2 Selection performance

2.2.1 General presentation of selection

Success of the incubator is shown by the performance of its tenants. Incubators, therefore constantly try to decrease tenant failure rates. One way of achieving this is by screening potential applicant organizations. Through use of a subjective screening process, BIs set the desired tenant criteria, assess the compatibility of the tenants and the incubator, and decide on the admission of acceptable companies. Screening processes help incubators to evaluate crucial characteristics, vital to discover future successful enterprises (Aerts et al., 2007; Hackett & Dilts, 2004a; Lumpkin & Ireland, 1988; Merrifield, 1987; Peters et al., 2004). Selection criteria for the tenants is developed around the objectives of the incubator. Each incubator has its own selection criteria, which pursue their objectives accordingly (Smilor, 1987).

Incubators usually have a selection committee (76%) in charge of assessing new tenants. Selection committees acknowledge the criteria and decide on admission. Other incubators (24%) only have one person deciding on admission (Aerts et al., 2007).

2.2.2 Selection criteria history

According to Hofstede (2010), European companies are long-term oriented and build their businesses around their teams, and people. Long-term oriented companies are patiently focused on the future, and are prepared to give up short term success in light of the bigger picture. These companies practice feminine values (altruism, quality of life, and people are of importance) in everyday business. American culture, on the other hand, is quite the opposite of European. American companies are short-term oriented and strive to achieve success quickly. Their masculine values show they focus on making profits, achievement, materialism and performance, people are secondary (Hofstede, 2010.). Competition is tough, and only the strongest can survive.

American and European BIs differ in their selection policies. Americans are focusing more on the financial criteria, while Europeans prefer “soft” criteria (market fit and management team). Different approaches could be explained by differing national cultures (Hofstede, 1980; Hofstede, 1991)

Through years of research, authors have developed various selection criteria. Following sections will review these criteria, and present their models. Subsequently, the best model suited for this thesis will be selected and explained.
Smilor (1987) was aware, how important it was to develop a selection process. Setting up the right selection criteria for the tenants, helps incubators to track company progress and adapt in the future. Furthermore, the mission and objective of the incubator are also key factors for selection criteria. Smilor (1987) identified a set of criteria consisting out of nine indicators/properties expected from the startup. Starting with the top priority, the ability to create jobs, pay operating expenses, and having a written business plan. Next, having a unique opportunity and being a startup company is of medium importance. Lastly, being locally owned, having fast growth potential and being high tech are the least important properties. Smilor (1987) believes the incubator increases possibility to admit successful ventures, by developing a broad and precise set of selection criteria.

Merrifield (1987) developed a decision tree based selection process and divided it into three steps. First, the incubator evaluates probable tenants on six criteria: sales profit potential, political and social constrains, growth potential, competitor analysis, risk distribution, and industry restructure. Second, the incubator is evaluated on the fit between the incubator itself and the tenant based on another six criteria: technical support, capital availability, marketing and distribution, manufacturing competence, component and material availability and management. The merger of these, (business attractiveness, and matching factors) regulates probability of the venture success. It also presents the added value of the tenant for an incubator. The author believes cautious tenant selection will increase the probability of tenant and incubator success.

In order to admit appropriate tenants into the BI, Lumpkin and Ireland (1988) developed a selection model. They then tested this model on a group of business incubators. This model consists of three screening criteria groups. Financial ratios, showing the current state of the tenant and announcements of the incubators future direction. Indicators used for the financial ratios are: liquidity, profitability, asset utilization, price earnings and debt utilization. The second criteria group depicts personal characteristics of the management team, with nine indicators: age, sex, technical skills, management skills, financial skills, marketing skills, persistence/aggressiveness, creativity, personal investment and references from others. The last set of criteria presents these market factors; current size, growth rate, uniqueness of product/service, marketability and a written business plan. The results of the research show, most incubators prefer using market factors and management team criteria to financial factors.

Hackett and Dilts (2004a) emphasized the importance of tenant selection. According to them, future tenants should be evaluated on; managerial, market, product and financial characteristics. Through evaluating tenants, incubators increase the possibility of finding tenants that will thrive and succeed. Additionally, future tenants can adapt and better prepare for the selection process, if the criteria is transparent. Authors claim that helping potential tenants is not only admitting them into their organizations, but also containing the
cost of their failure. Some startups have a good management team, but their product or idea lacks durability. Companies like these can be helped through recognition of their lack of durability, and movement to implement new ideas.

Aerts, Matthyssens and Vandenbempt (2007) explored screening practices of incubators in Europe. Their research shows that the market is the most important screening factor for a majority of incubators. The second most important are the management teams, and the least important are the financial factors. Even though 97% of all incubators use a set of screening criteria, only 6% screen their tenants in a balanced way, and consequently tenant failure decreases by applying balanced screening practices. This forces a demand that incubators understand tenant needs better, and therefore, deliver higher added value in time. Entrepreneurs should apply these balanced screening practices to assess their company, and to improve it (even if they are not planning to join a BI).

2.2.3 Model used

Bergek and Norrman (2008) developed a selection strategy model presented in Figure 2. Their model is a matrix consisting out of four possible selection strategies. As seen in the selection criteria history section, authors use similar criteria to screen potential tenants. Two of the most important screening factors seem to be: management team and market/product. Bergek and Norrman (2008) built on previous research, and developed a model with two approaches, and two focuses.

**Figure 2: Selection strategies**

![Selection strategies](source.png)

According to them, people responsible for admission of new tenants focus either on the entrepreneur/team or the idea. The idea incorporates market, and product potential of the new tenant. Incubator managers focusing on the idea approach, need deeper understanding
of the product, market, and profitability in order to properly assess potential. Incubator managers focusing on the management team or the entrepreneur, require knowledge to judge personality, and experience.

Authors also differentiate between two selection approaches. First, “picking-the-winners” approach is used to search only for potential successful ventures. Extreme use of this approach reminds of Private venture Capital firms. Second, the “survival-of-the-fittest” approach is used by incubator managers, who believe that the market will sort itself in time, and accept tenants with open arms. Stronger companies survive, while weaker ones inevitably exit the market.

When focuses and approaches are merged, the result is a matrix with four possible selection strategies (seen in the matrix above). Incubators with different selection strategies will have very different portfolios:

- **Survival-of-the-fittest and idea focused selection**: This strategy will lead to a wide portfolio, full of companies with undeveloped ideas belonging to several fields.
- **Survival-of-the-fittest and entrepreneur focused selection**: Diversified portfolio consisting of strong (educated, experienced, and productive) entrepreneurs/teams, working in several fields.
- **Picking-the-winners and idea focused selection**: Portfolio of a few highly niched companies, with great idea potential inside a narrow technological area. Ideas are usually born in strong universities.
- **Picking-the-winners and entrepreneur focused selection**: Results in small portfolio of specially selected entrepreneurs. Ideas frequently come from research done by adjacent universities.

### 2.3 Monitoring and business assistance intensity

#### 2.3.1 Monitoring and business assistance intensity in general

Admission into the incubator is simply the beginning of the incubation process. After the admittance, the real work starts for both parties (BI and the tenant). While it improves the chances of new venture survival (Hackett & Dilts, 2004a), joining a business incubator does not guarantee success by itself (Lumpkin & Ireland, 1988).

Entrepreneurs are mostly experts in their field and have the technological know-how, but lack business experience. Start-ups are therefore attracted by the offering of services and resources BIs provide. Business assistance is arguably one of the most important/useful things offered. Incubator managers monitor and assist their tenants in many different ways.
Incubator managers must decide on the intensity of monitoring, and business assistance provided.

2.3.2 Monitoring and business assistance intensity history

Smilor (1987) acknowledged the importance of business assistance in his research. Entrepreneurs joining the BIs are talented people with bright ideas, and sometimes even with sufficient funding needed to open their business. What they lack is business knowledge, which in the end produces revenues out of ideas, and transforms start-ups into successful enterprises. In a national survey by Smilor (1987), it was revealed that a list of the most important consulting services provided were, respectively: managerial, marketing, business planning, and accounting. These services are available on site and can be delivered by the incubator manager, a group of incubator professionals, or outside counselling partners.

Rice (2002) talked about co-production between the BI and the tenant. In order for cooperation to work, both parties need to put in the effort required to achieve desired results. Further, tenants need to be active and work closely with the incubator management. Rice (2002) developed a general approach consisting out of three counselling types.

1. **Reactive and episodic counselling**, is when the tenant asks for help, and receives it for that particular problem and limited amount of time.
2. **Proactive and episodic counselling**, is when help is distributed occasionally on general matters, it is initiated by the incubator.
3. **Continual and proactive counselling**, is when help and review is ongoing and extensive. Incubator management intervene aggressively, and in detail.

Peña (2004) presented surprising results in the conclusion of his paper. According to him, venture growth is mostly conditioned with organizational factors of the new venture, and the skills of the entrepreneurs. He therefore believes business incubator help is overrated. Start-ups should be able to flourish without joining the incubator. There seemed to be only one significant variable provided by the incubator enhancing growth: management training, and assistance services. Peña (2004) recommended improvement of assistance services provided, and additional management training to educate the entrepreneurs.

Colombo and Delmastro (2002) researched Italian business incubators. Their survey results showed, what the most commonly provided services are: professional training, marketing and other commercial services, internationalization support services, administrative and legal, financial advisory and fund search services.
Hackett and Dilts (2004a) measured business assistance and monitoring intensity as an amount of time spent observing, and helping new ventures develop. Not only to succeed, but also to learn from their minor mistakes, and avoid future ones. Business assistance and monitoring must be given in the appropriate amount, scope, and quality. Amount, refers to the number of hours dedicated to assistance and monitoring. Scope, refers to the comprehensiveness of assistance provided (marketing, management, law, etc...). Quality of the service, refers to the relative value of the assistance for each tenant. Incubators increase their value for start-ups, by establishing new high quality monitoring and business consulting services. Additionally, Active observation and monitoring decreases the possibility of wrong decisions. With appropriate business assistance, tenants can reach their goals faster, using less resources.

Grimaldi and Grandi (2005) talked about extensive help, provided by the management staff in corporate and private incubators. These incubators have special management teams, working actively, and monitor tenants to make them self-sustaining. Incubator assists startups with business advice on marketing, organization, management and other specialized areas.

2.3.3 Model used

Literature review on business assistance and monitoring, showed us how authors perceived these matters through the years. Improvement of business support became important in recent literature, on top of general administrative services provision. Authors outlined different types of support services provided by the incubator. Each business incubator has a particular set of business assistance services. They are always trying to improve the quality, and the quantity of the services (Grimaldi & Grandi, 2005). The majority of researchers agree business support includes entrepreneurial training, business development advice, accounting, legal counselling, advertising and financial advice (Bergek & Norrman, 2008; Bollingtoft & Ulhoi, 2005; Chan & Lau, 2005; Lalkalka, 2003; Lyons & Li, 2003; Mian, 1996a). However, the most relevant for us, are services provided to help, and educate managers in business related fields such as: management, marketing, business development, sales and planning.

It is up to the incubator manager or incubator staff to decide, how to approach monitoring, and assistance of the tenants. Bergek and Norrman (2008) believe two questions should be asked before establishing a sound model:

- Who is the initiator (the incubator staff or the entrepreneur)?
- What is the intensity and continuity of monitoring/assistance?
After answering those questions, the incubator must establish its role in the incubation process. They can then place themselves on a scale depicted in Figure 3. On one side of the scale, they perceive themselves as the manager of the incubation process, on the other, they are only an external moderator of the incubator process, which is primarily managed by the tenants. When taken to the extreme, strong intervention refers to the tenant being completely guided through the process by the incubator staff. Sometimes tenants can have complete external management teams, made only for their venture. Tenants are mostly striped of their sovereignty, when it comes to this extreme setting. Opposite, the other extreme is called laissez-faire, and this is when the tenants are left almost completely to themselves, and given minimal assistance by the BI unless asked for.

Figure 3: Incubator’s role in the incubation process

2.4 Resource munificence

The International Business Innovation Association (InBIA), defines a business incubator as an organization, providing a nurturing environment, and aid, to start-ups in the early stages. This is done by supplying their customers (tenants) with business support services and resources appropriate for them. Business support services have been mentioned before, and that is why we will focus on resources in this chapter. Daft (1983) defined resources as “all assets, capabilities, organizational processes, attributes, information, knowledge, etc., controlled by the firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness” (as cited in Barney, 1991, p. 101).

2.4.1 The Resource-Based View of the Firm

Every firm searches for sustainable competitive advantages, which would give them the edge over their competitors. Sustainable competitive advantage, is a value creating strategy, implemented by only one player in the market. This strategy is so unique, that none of the current, or future competitors can easily replicate it (Barney, McWilliams & Turk, 1989). To implement this kind of strategy, a firm need to possess a special set of resources, and capabilities. Resources need to be heterogeneous and immobile. Heterogeneity, refers to diversity of resources possessed by the firm. If a particular resource is owned by several companies, it cannot be a source of sustainable competitive
advantage. Immobility refers to the cost of acquiring the resource. A Company that does not possess this resource is facing a cost disadvantage in obtaining, developing, acquiring, and using an immobile resource (Barney, 1991). Companies should not seek resources that would bring them competitive advantages on the open market to purchase. Valuable, rare, imitable, and non-substitutable resources, should therefore be searched for within the resources, already owned by the company.

2.4.2 Resource literature history

Smilor (1987) mentions two strategies of business incubation. A business incubator can either focus on providing space, or development of the company. BIs using the first strategy, buy old buildings, renovate them, and rent them out for small amounts. Their goal is to provide as much affordable space as possible. The second strategy focuses on accumulation of resources, helping start-ups to grow. BIs always try to create a perception of success to attract new tenants and sponsors. Successful incubators are more likely to receive new resources.

Colombo and Delmastro (2002) compared incubated and non-incubated start-ups. Incubated firms had better access to financing and crucial resources.

Peña (2004) defined critical resources as: talent, research stream, experience, and motivation brought to the incubator by the entrepreneur. Incubator tries to accumulate tangible and intangible resources to increase chances of tenant survival, and growth. Prosperous start-ups explore the market and learn to adapt to it. They search for unique resources and capabilities, and incorporate them in the business model.

Ray, Barney and Muhanna (2004) came to a different conclusion in their research. The research showed, resource quantity does not always correlate with increase in performance. Rather the incubator must build and explore resources within to achieve competitive advantage.

Phan, Siegel and Wright (2005) describe a business incubator as an intermediate organization, which transforms inputs like knowledge, and resources to marketable outputs. Incubation is a complex process meant for development of business. Authors present internal and external bargaining processes. Internal processes include: bargaining for resources, contacts, and services mostly within the strategic organization. External processes are bargaining with external resource providers (government, companies, and other stakeholders). BI’s were recognized as a unique solution to market failure. They are very efficient organizers of resources. Research showed incubators that provide specific resources, create more added value to the tenant, than incubators providing general resources.
Grimaldi and Grandi (2005) compared different incubating models. Public incubators want to increase employment, and develop economic growth of the region using public resources. Private incubators on the other hand, offer their own resources. When internal resources are not enough, BI’s help the tenants to connect with external partners, which are in possession of needed resources.

Bergek and Norman (2008) presented the incubator model, consisting out of three components: selection, business support, and mediation. Incubators are mediators between the tenants and their environment. They gather resources, build networks, and establish connections for their tenants.

2.4.3 Model used

Hackett and Dilts (2004a) defined resource munificence as “relative abundance of incubator resources.” Resource munificence can be broken down into, resource availability, quality and utilization. According to Hackett and Dilts (2004a) incubator resources can be divided into internal and external resources. Internal resources can be found inside the incubator and are connected to personnel, operations, economics, and environment. External resources can be found outside the incubator. External resources present innovation communities, and innovation networks connected to the business incubator, and relevant to their tenants. Business incubator’s ability to provide its tenants with access to resources is called resource availability. Relative value of resources provided to the tenants is referred to resource quality. Tenants’ usage of received resources, provided by the incubator refers to resource utilization. Incubator resources are mostly managed by the incubator managers, sometimes with the help of advisory board (Hackett & Dilts, 2004a).

Receiving an equity stake in the tenant's company is not the only goal in mind. Incubators increase their value by infusing these resources into their incubatees. They are trying to attract new investors and renew their old contracts to receive funding and subsidies. As mentioned before, most incubators depend on subsidies and external funding to run their operations normally.

Hackett and Dilts (2004a) hypothesize, business incubators high in resource munificence (well-rounded incubators, with extensive networks, and access to strong management teams and quality innovation) have advantage, over the ones with low resource munificence. Incubators with high resource munificence, are more likely to be able to infuse tenants with needed resources. These incubators can expect better performance and outcome of the incubation process.
2.5 Graduation

2.5.1 Graduation in general

The ultimate goal of most companies, including start-ups, is to make money in the present, and the future (Goldratt, 1990). In order to achieve that goal, they need to learn how to operate/exist in an extremely competitive environment. Companies joining business incubators, have similar goals. To learn from someone who possesses more knowledge, experience, resources, connections and bigger financial base. To absorb everything possible, and establish a sustaining enterprise, capable of solving crises on its own (Rice, 2002).

A successful incubation process ends, with the graduation of the incubatees. It is BIs job to lead their tenants through this process, and help them achieve graduation. Each incubator establishes its own graduation policies. Good policies include specific criteria relative to the incubator's mission. They are presented to the tenants, with admission to the incubator. Tenants need to understand, and accept them, and policies should be reviewed constantly (Colbert et al., 2010).

Tenants on average graduate in thirty-three months. The shortest incubation according to Knopp’s (2007) report lasted one month, while the longest lasted seventy-two months (Knopp, 2007). The incubation period depends on the field, and type of research done by the tenants. For example, big complex projects where long research is necessary, will need more time to graduate than the opposite. Business incubators mostly set a time limit on their service. While time limit is important for efficient turnover of the tenants, it should not be the only graduation criteria, rather graduation criteria should be holistic. It should incorporate several factors referring to tenant’s achievement of the benchmarks, set by the incubator. If a start-up overstay the limit, but is doing a good job, it should be given additional time to graduate (Colbert et al., 2010).

Example of possible graduation criteria:

- Reaching positive cash flow
- Certain number of employees hired
- Outgrowing the incubator or needing own facilities
- Merger or acquisition
- Creation of an autonomous board of directors
- Achieving short and long term funding

Reaching a certain number of graduation indicators, represents readiness to graduate. The business incubator decides on the amount of applicable indicators. It also reviews specific
cases, and decides if a certain tenant is ready for graduation or not. Even though the goal is to graduate, every start-up will not achieve it. Some start-ups become idle, disobedient, or simply fail in their operations. BI’s protect themselves, with contracts signed upon the admission of the tenant. Companies that are only taking space in the incubator, are asked to vacate (Colbert et al., 2010).

2.5.2 Graduation history review

According to Smilor (1987), it is very important to create the perception of success. Incubators perceived as successful, are more likely to create strong image for their tenants, attract additional resources, and attract stronger companies wanting to enroll. One of the ways to establish this perception, is by achieving a good graduation rate.

Aernoudt (2004) estimated the average incubation period of the tenant to be three years. He wrote about the accomplishment of graduation, which increases the odds of survival significantly. He stressed the importance of networking between the graduates, and the tenants. Graduates can establish strong networks, with contacts made inside the incubator. Aernoudt (2004) acknowledged production of successful companies that leave the incubator in timely manner as the main goal of the incubator.

Peña (2004) had a similar view of incubation goals as Aernoudt (2004), with the main goal of the incubator, according to him, to create prosperous graduates. These graduates are financially independent. On average they stay in the incubator from two to three years, before graduating.

Hackett and Dilts (2004a) described different measures of tenant success in their research. The most transparent measure is graduation, and graduating companies need to work hard to overcome barriers in their business life.

Rothaermel and Thursby (2005a; 2005b) assessed the impact of business incubator on company’s performance. Part of their research is dedicated to graduation of the tenants, which is an important measure of performance. Private incubators expect graduation faster than public incubators, one year to two years respectively. The authors offered three possible outcomes of incubation process. The first outcome is failure or bankruptcy. It occurs, when the company fails to successfully graduate within the given period, and terminates its operations, due to liquidity problems. The second outcome is staying in the incubator over the given time period. Some companies need more time to become self-sufficient, they are slowly progressing towards their goal. Incubator sees their effort/potential, and gives them more time to graduate. The final outcome is successful graduation or acquisition. Companies that become self-sufficient leave the incubator.
2.5.3 Model used

According to Hackett and Dilts (2004a, p. 48), “Business incubation performance (BIP) is measured in terms of incubatee growth and financial performance at the time of incubator exit.” Incubation process can end in several different ways. As mentioned before, Hackett and Dilts (2004a) described five possible incubation outcomes, and built a model to assess the performance of incubation:

1. The incubatee is surviving and growing profitably.
2. The incubatee is surviving and growing and is on path toward profitability.
3. The incubatee is surviving but is not growing and is not profitable or is only marginally profitable.
4. Incubatee operations were terminated while still in the incubator, but losses were minimized.
5. Incubatee operations were terminated while still in the incubator, and the losses were large.

Hackett and Dilts (2004b) suggest the first three outcomes are perceived as successes according to the praxis, and the last two as failures (Hackett & Dilts, 2004b). Hackett and Dilts (2004a) however see outcomes 1, 2, and 4, as successes and 3, and 5, as failures.

Even Though Hackett and Dilts (2004a) used a more holistic approach, to measure performance of business incubators by applying three performance indicators (Selection, Monitoring and Business assistance intensity and Resource Munificence). Their model is definitively goal oriented in the end. The authors measured the success of BIs, according to the outcome of the incubation process. They gave five possible outcomes to evaluate the success of BI.

This thesis tries to go a step further. Graduation is added to the equation, as another performance indicator. Meaning there are four performance indicators in this thesis model (Selection, Monitoring and Business assistance intensity, Resource Munificence and Graduation), instead of three. Five outcomes are given to evaluate successfulness of graduation, instead of the whole BI. The unit of analysis remains to be the incubator, while successful process of incubation is the indicator of BI success. I therefore presume, each of the five performance indicators positively correlates to the successful incubation process. Which means each indicator is vitally important and should not be neglected.
2.6 Internal and external factors influencing the incubation process

Each incubator manager wants to build a versatile business incubator, by providing knowledge and experience (Rice, 2002). While business incubator can increase success and performance of new ventures. Joining a BI does not guarantee success by itself, as mentioned before (Lumpkin & Ireland, 1988). There are several internal and external factors influencing the successfulness of BI incubation. Internal factors influence the performance of the BI from within, while external factors influence it from the outside. Incubators can manage the internal factors. External factors, on the other hand, are out of their control (Arlotto, Sahut & Teulon, 2011). Internal factors refer to things inside the BI influencing the incubation process: human capital of the entrepreneur, firm start-up characteristics, and support of the business incubator (Peña, 2004).

Co-production between the incubator and the start-up is crucial. Good BI can enhance the performance of their tenants, if they are willing to listen and participate in the process. Tenants therefore need to put in the work, to achieve successful incubation (Rice, 2002). External factors refer to things outside the BI during the incubation process. Among these factors are: industry characteristics, macroeconomic conditions, public policies and other market forces. Each of these factors can positively or negatively affect the incubation process. Successful BIs need to keep track of both kinds of factors, and adapt to the changes as much as possible (Peña, 2004).

3. EMPIRICAL RESEARCH

3.1 Goals of the research

The theoretical concepts presented in the first part of the thesis are the pillars, upon which I have built my own business incubation evaluation model. The goal of this particular chapter is, to test my model in practice, and later present the results. First I will describe the methodology chosen and explain both samples (for incubators and start-ups). I will divide the survey questions according to my theoretical parameters. The rationale behind the questions of the survey will be explained. The answers of the survey, will then be graphically presented. I will analyze the results, and explain the implications behind them. The reader will get a grasp of what this research was all about.

3.2 Methodology

According to the type of research, this thesis required primary sources of information. I gathered a sample of subjects involved in the process of business incubation in Slovenia. This sample will further be explained in the next few pages. Two surveys were then created, based on the theoretical concepts described in this work. The first survey was
meant for the management of those supporting institutions/incubators. While the second survey was meant for the clients/start-ups of those institutions, who were currently or previously using help provided by “business incubators”. Estimated solving time of the two surveys was 9 minutes for the “incubators” and 7 for the startups. The goal was to approach this research holistically/objectively and see different sides of the same coin. Main research was focused on the “incubator” survey, while the startup survey provides additional value. Even Though the feedback of an incubator manager is more valuable to this research, than the opinion of the start-up, it is also more biased. An incubator has a reputation to withhold, unlike the startup who has more maneuvering space.

The incubator survey had 27 questions. Majority of the questions were closed or semi-closed (selection of answers to choose from, with additional other section to add own ideas), and tried to gather qualitative results. There were several types of questions: yes or no questions, allocating parameters by their importance, multiple answer semi-closed selection, choosing a rank on a scale; open ended questions, closed questions with one possible answer and questions involving sums. The survey for the startups had 22 questions, and possessed similar or even the same questions, but they were turned to gather the perspective of the startups.

The surveys were made in English, even though all of the respondents are Slovenian for two reasons. First reasoning was to catch the essence in the same language that the research is written in. The second reasoning was, the research is dealing with up to date people who are using English every day in their work.

3.2.1 The sample for incubators

When exploring the world web for Slovenian incubators, I located a website of Entrepreneurship portal, which is a Public Agency of the Republic of Slovenia, working to promote: entrepreneurship, innovation, development, investment and tourism. On their web page I found a list of subjects occupying the innovative environment in Slovenia (Evidenca subjektov inovativenga okolja, 2016). The list is divided into two categories. The first category also called A record, involves subjects part of the innovative environment, fulfilling all of the conditions in the accordance to the Supportive Environment for Entrepreneurship Act. The record involves three types of subjects: Technology parks, Business incubators and University incubators. The second category called B record, involves subjects satisfying only the minimum requirements of the same act. The list below contains the names of all the subjects I took into my sample.
A record

**Technology parks**
- Tehnološki park Ljubljana, d.o.o.
- Primorski tehnološki park d.o.o.

**Business incubators**
- Regionalni center za razvoj, d.o.o.
- Pomurski tehnološki park, d.o.o.
- Štajerski tehnološki park, d.o.o.
- SAŠA inkubator, d.o.o.
- INKUBATOR, d.o.o. Sežana
- Razvojni center za informacijske in komunikacijske tehnologije, d.o.o.
- MPIK, Mrežni podjetniški inkubator Koroška - RRA Koroška, d.o.o.
- Razvojni center Novo mesto d.o.o. - Podjetniški inkubator Podbreznik

**University incubators**
- UIP, Univerzitetni razvojni center in inkubator Primorske, d.o.o.
- IRP, Tovarna podjemov - podjetniški inkubator Univerze v Mariboru
- Ljubljanski univerzitetni inkubator, d.o.o.

B record

**Subjects of innovative environment**
- Podjetniški inkubator Kočeveje, d.o.o.
- Mrežni podjetniški inkubator Vrelec, d.o.o.
- Mrežni podjetniški inkubator Ormovž, d.o.o.
- Inkubator Savinjske regije, d.o.o.
- Podjetniški inkubator Kostel

There are only eight institutions recognized as business incubators in Slovenia, according to the entrepreneurship portal. To add value to the research a wider sample was required. Even though not all of these subjects on the A and B record are business incubators per say, they help new enterprises with their initial steps. They are incubating institutions providing resources, they have a selection process, business assistance, monitoring, and are trying to help new ventures survive on their own after incubation. These institutions, were therefore recognized appropriate, to be a part of this research. The original B record on the website contains three more subjects, which are not in the sample above. Those three subjects were not recognized appropriate as a part of the research. The first two rejected
subjects did not possess the appropriate characteristics to be included, the third subject was an incubator inside an already included incubator.

Each of the selected incubators received an email containing general information about my research and two links. Recipients were first asked to fill in the English survey meant for them. After completing the task, they were asked to send the second part of the email (containing a link to a second English survey meant for their tenants), to their incubated startups.

The response after the first week was really poor, only two out of eighteen incubating institutions have completed the survey. Knowing they were busy with pressing matters at hand and little time, I decided to send the surveys once more. The following day I called each of them, to ask them for help personally. After receiving a few requests to translate the survey into Slovenian language, I acknowledged the possibility not everyone was comfortable answering the survey in English. In order to aid incubator managers and startups, both surveys were translated, and re-send as requested. Rationale behind the translation was to obtain a broader sample of answers. Personal approach seemed to work, because eleven out of eighteen answered the survey eventually (some partially, but most completely). The number of responses on each question therefore differs.

3.2.2 The sample for startups

This sample was not carefully chosen as the one above. One of the main assumptions were, the participating incubators would aid me in the distribution of the survey. Matter the fact is, each of them possesses many contacts of their current, and past incubatees, and can therefore spread the survey easily.

The response rate was even worse with the startup survey. Even Though the survey has been opened/clicked on many times (48 entered intro page), only a few have taken the time to complete it. Trying to increase the response rate, I searched for the contact info of the startups via the websites of their incubating institution. After obtaining the info, I sent both surveys (English and Slovenian version for startups) to as many startups as I could find. Each email was sent separately to avoid being recognized as spam email. In the end, eleven startups completed the survey completely, while another six answered partially. This means 23% of the people who entered the intro page completed the survey. My understanding is, many more have received the link from their incubating institution, and then from me (some of them), but did not take the time to open it.
3.2.3 Analysis of the survey results

Survey questions were initially divided into four groups according to the parameters presented in the theoretical part. Selection performance involves seven questions for the incubators and five for the startups. Business assistance and monitoring five questions for the incubators and six for the startups. Resource munificence twelve questions for the incubators and nine for the startups. Graduation two for the incubator and one for the startups. The remaining question in both surveys is there to identify the participants for easier comparison. The total of survey questions is 27 for the incubators, and 22 for the startups as mentioned before. Each question will be presented and explained in the following section.

3.3 Selection performance questions

1. Incubators: Allocate the selection parameters, according to your selection process (1-most important, 7-least important). Selection parameters to be allocated were: Financial ratios of the startup, Startup’s management team, Experience of the startup, Startup’s idea, The market attractiveness, Growth potential of the startup, and Chemistry startup-incubator. Hackett and Dilts (2004a) talked about the importance of the selection criteria on the performance of business incubators. The rationale behind this question was to see, how important each selection parameter for the sample of chosen incubators is.

Figure 4: Selection parameters according to the importance (incubators)

According to the results depicted in Figure 4, on average, the most important selection parameter is the idea of the startup with an average of 2/7, second most important parameter seems to be market attractiveness (3.5/7), third growth potential of the startup (3.9/7), fourth startup’s management team (4.1/7), fifth experience of the startup, close

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behind in sixth are financial ratios of the startup (4.4/), and the least important of these parameters seems to be the chemistry between the incubator and the incubatee (5.9/).

1. **Startups**: The question was similar, as for the incubators: **Allocate the selection parameters, according to the importance (1-most important, 7-least important).** Selection parameters to be allocated were the exact same as for the incubators. The rationale behind the question was to see, how different the perception of the startup on the same matter is.

   **Figure 5: Selection parameters according to the importance (startups)**

   According to the answers by 15 startups (see Figure 5), the most important parameter seems to be management team leading the startup (2.7/). Startup’s idea and market attractiveness are close together with 3.1/ and 3.3/ respectively. Growth potential is in fourth place (3.7/), experience of the startup fifth (4.5/), financial ratios sixth (5.1/) and chemistry between the two seventh (5.7/).

2. **Incubator and Startup**: **Which selection parameters would you add, on top of the 7 listed in question one (above)? (If you think those 7 parameters are enough insert / or 0).** Only three incubators used the provided blank space below this question to present the missing parameters. First recommendation was to add flexibility of the startup to the other parameters. The second recommendation was to add number of new employees in the coming years. The third recommendation was to add startup’s team to the mix (their experience to tackle the market, and to avoid traps). The sole respondent for the startup’s recommended to add startup’s will to work hard and learn.

3. **Incubators**: **Who selects new tenants in your business incubator?** The respondents could choose more than one answer, on account of the possibility to have different selection approaches. Possible answers were: Incubator manager alone, Fixed selection team, Team of experts from each field (startups are involved in), and other possibility with
blank text provided for an answer. The reason for this question was, to identify the person who is in charge of the selection process. This person is a “gatekeeper” to the incubator, and decides who possesses the appropriate characteristics to join the incubator.

**Figure 6: Who selects new tenants**

According to the answers of eleven incubators, the majority has a fixed selection team (55% of the incubators), which reviews and selects new tenants. 45% of the respondents uses a team of experts from each field (startups are involved in). The incubator manager alone selects new tenants in only 9% of the incubators. Multiple answers mean, the sum of all the percentages does not necessarily add up to 100% (see Figure 6).

4. **Incubators:** According to your experience, what is more important for successful incubation? There were two possible answers, but the respondents could only choose one of them. The answers to choose from were: startup’s idea or startup’s management team.

**Figure 7: What is more important for successful incubation (incubators)**

Rationale behind this question was to recognize, which of the two parameters ensures success of the company easier, according to the experience of the incubators. Both things
are important, but for the sake of the research the incubators were made/forced to choose between them. The answers will show what brings greater value for the startup in the selection process. This question will also help me build a matrix presented in the theoretical part developed by Bergek and Norman (2008).

The results from the survey depicted in Figure 7 show, the majority of the respondents (55%) believe that startup’s management team is more important for successful incubation than startup’s idea (45%).

3. **Startups**: The question is linked to question four for the incubators. **In your opinion what is more important for successful incubation?** Possible answers were the same as in the question for the incubators: startup’s idea or startup’s management team. The rationale was to see the view of the startup on the matter. The reasonable prediction would be, they will choose the characteristic they pursue with their startup.

*Figure 8: What is more important for successful incubation (startups)*

![Figure 8: What is more important for successful incubation (startups)](image)

The startups who responded (see Figure 8), also think startup’s management team is more important (75%) than their idea (25%).

5. **Incubators**: **Which approach is better?** Similarly, to the previous question, the respondents only had two possible answers they could choose from. They could either choose: picking only a few superb ventures that will probably succeed, or allowing wider crowd to be a part of your incubator (market will sort things out anyway). The rationale behind this question was to determine, which kind of startup has a better chance to get accepted into the incubator.

The results show 82% of the respondents believe, a wider crowd should get the opportunity to join a business incubator. They might be unsuccessful in the future, but will at least get
the opportunity to present their company to the market. The other 18% believe, only a few superb ventures earn the right to be a part of an incubator (see Figure 9).

Figure 9: Which approach is better (incubators)

4. Startups: The question is linked to question five for the incubators. **Which approach is better in your opinion?** The startups also had the same two options to choose from, as the incubators: picking only a few superb ventures that will probably succeed, or allowing a wider crowd to be a part of your incubator (the market will sort things out).

Figure 10: Which approach is better (startups)

The answers of the startups are very similar to the ones from the incubators. Majority of the respondents (81%), believe a wider crowd should get the opportunity to be a part of a business incubator. Only 19% of the respondents believe, only a few superb ventures should be selected (see Figure 10).

6. Incubators: **Is your selection criteria transparent, so future tenants can prepare themselves better for your requirements?** The respondents had three possible answers: yes, no, and other where they could write their own options. The reasoning for this
question was to recognize the preparedness of the incubators, to share their selection process with general public. Publicly known standards mean, future applicants can prepare themselves better for the selection process, and the incubation itself.

The results show 90% of the incubators who responded believe, their selection criteria is transparent enough. The other 10% of the respondents believe, their criteria is not transparent enough (see Figure 11).

*Figure 11: Is your selection criteria transparent (incubators)*

5. Startups: This question is linked to question six for the incubators: **Do you think the selection criteria of “your” incubator is transparent enough, so future tenants can prepare themselves better for the requirements?** Possible answers were also: yes, no and other with a blank writing space. As this transparency is mostly important for the startups, I wanted to know what is their view, on the selection criteria transparency of “their” incubator.

*Figure 12: Is your selection criteria transparent enough (incubators)*

The respondents chose all three possibilities. The majority (69%) believe, the selection criteria of “their” incubator is transparent enough. A smaller portion (25%) believe, “their”
incubator is not transparent enough, while 6% answered with, “our” incubator is “kind of” transparent enough (see Figure 12).

7. Incubators: How many parameters does it take in your opinion, to have a balanced set of screening practices (number of selection parameters, from 1 to 10)? The participants were given a blank space below the question, and could respond with a number from 1 to 10. The rationale behind this question was, to establish a number of parameters that makes screening practice holistic.

Figure 13: How many parameters does it take for a balanced set of screening practices

Nine incubators answered this question. The results depicted in Figure 13 show, 5 parameters were chosen the most (27%), second most chosen answer was 6 parameters (18%), followed by 2, 3, 7, 8 parameters (9%) and 0-1, 4, 9 which did not get chosen at all (0%).

3.4 Monitoring and business assistance questions

8. Incubators: Who is the initiator of the contact in business assistance situations (between the incubator and the tenant)? The respondents could choose one of the three possible answers: the incubator, the tenant or both. The rationale behind the question was to acknowledge who begins the contact when talking about assistance.

The results of this question show 90% of the time both parties initiate the contact. In other words, startups ask for business assistance, and the incubators are ready to provide the help needed. Other 10% of the time the incubator initiates the contact, by offering their assistance (see Figure 14).
6. **Startups**: This question is exact same as question 8 for the incubators. **Who is the initiator of the contact in business assistance situation (between the incubator and the tenant)?** Possible answers were the same, as in the question for the incubator survey: the incubator, the tenant or both. The rationale was, to get the view of the startups on the matter.

![Figure 15: Initiator of the contact in business assistance situations (startups)](image)

According to the answers provided by the startups, 44% of the time both parties initiate the business contact, 33% the incubator is the initiator, while 22% of the time the tenant is the initiator of the contact (see Figure 15).

9. **Incubators**: **What is incubator’s role in the incubation process?** 1=business incubator manages the incubation process completely (almost overtakes the tenants - strong intervention); 5=business incubator is half the manager half the observer (helps the tenant to manage its process, and intervenes if needed); 10=business incubator only observes the process and does not intervene in tenant’s work (laissez-faire). The respondents were given a scale from one to ten. They could choose their role in the incubation process, according to the explanation above. This question will later help
me, to identify the position of Slovenian incubators on the scale I presented in the theoretical part of the thesis.

*Figure 16: The role of incubator in the incubation process (incubators)*

The respondents gave a wide variety of answers to this question. Figure 16 shows, most incubators responded with 5/10 (40%), and therefore consider themselves as half the manager half the observer. Second most common answer (20%), was 3/10 on the scale, which means incubator manages the operations more than the tenant. Only 10%, or one incubator completely overtakes the operations (1/10). One incubator (10%) chose 4/10. 7/10 and 8/10 were also chosen once (10% each), which means the tenant runs the operations more than the incubator in those two cases, while the incubator assists if needed. Some possibilities were not chosen at all (2/10, 6/10, 9/10, 10/10).

7. Startups: This question was the exact same, as question nine for the incubators. **What is incubator’s role in the incubation process?** 1=business incubator manages the incubation process completely (almost overtakes the tenants - strong intervention); 5=business incubator is half the manager half the observer (helps the tenant to manage its process, and intervenes if needed); 10=business incubator only observes the process and does not intervene in tenant’s work (laissez-faire). Startups were also given a scale from one to ten to choose from. The answers to this question will display the perception of the startups on the same question.

The results of the survey for startups, show quite a different perception of the incubator’s role in the incubation process. Most common choice was 9/10 (44%). Those startups believe, they are almost completely in charge of the incubation process. The second most common answers for the startups (33%), is the same, as the most common answer for the incubators 5/10. Some startups (11%) believe, they are more in charge of the process than the incubator with a score of 8/10. The other 11%, believe their incubator manages more of
the incubation process than them (3/10). Options 1/10, 2/10, 4/10, 6/10, 7/10 and 10/10 were not chosen at all (see Figure 17).

*Figure 17: The role of incubator in the incubation process (startups)*

10. *Incubators: What do you assist your tenants with?* Multiple answers were possible for this question. The respondents could choose from a number of possible assistances: business development advice, accounting, entrepreneurial training, advertising, legal counseling, financial advising, and other option with blank field for own ideas. The rationale was to see, which assistances the incubators were providing. Provision of quality assistances that are helpful for the tenants, should increase their performance.

*Figure 18: Assistances provided by the incubator (incubators)*

The results depicted in Figure 18 show, every business incubator involved in this survey (100%) provides business development advice and entrepreneurial training. Financial advising is provided by 80% of the respondents, 70% provide advertising, 50% legal
counseling, 40% accounting, and 30% other assistances. Other assistances added by the respondents are, subsidized infrastructure and networking.

8. Startups: This question is linked to question ten for the incubators. **Which assist are provided by “your” incubator?** Multiple answers were possible for this question. The respondents could choose from the same roster of assistances, as the incubators: business development advice, accounting, entrepreneurial training, advertising, legal counseling, financial advising, and option other with a blank field for own assistances.

*Figure 19: Assistances provided by the incubator (startups)*

Most provided assistance, according to the results depicted in Figure 19, seems to be business development advice (89%). Over a half (56%) of the incubators provide entrepreneurial training. While 33% of the respondents mentioned other assistances. Other assistances mentioned were: rent of the premises, contacts, and external help for individual topics. 11% of the surveyed startups answered with either accounting, advertising, legal counseling or financial advising.

9. Startups: This question, is connected to the previous question for the startups. **Which assists provided by “your” incubator are you using?** Even though an incubator provides several assists, it does not mean they are used by their tenants. Rationale behind the question, was to see which assist are used the most.

The results depicted in Figure 20 show, business development advice is the most used assist with 67%. Other assists, such as, connections, and office space are used by 33% of the respondents. Advertising is the third most commonly used assist according to the results (22%). Entrepreneurial training and legal counseling are both used by 11% of the startups. Accounting and financial advising, are the least used assists provided by the incubator.
11. Incubators: How often are you in a business contact with your clients? The respondents could choose one of the options: daily, weekly, monthly, quarterly, half yearly, yearly or other, if they contacted their clients less often.

**Figure 21: Frequency of business contact with the clients**

Most incubators are in a business contact with their clients on a weekly basis (70%). Other 30% are in contact daily (see Figure 21).

10. Startups: This question is linked to question eleven for the incubators. How often are you in a business contact with your incubator? The startups had the same possible answers as the incubators: daily, weekly, monthly, quarterly, half yearly, yearly or other.

As seen on the graphical presentation in Figure 22, 44% of the startups, are in a monthly contact with their incubators. Second most common contact period is a week (33%). Some
startups are in a business contact on a yearly base (11%), while others (11%) graduated already and don’t have a business contact anymore.

*Figure 22: Frequency of business contact with the incubator*

![Bar chart showing the frequency of business contact with the incubator.]

12. **Incubators: How does your monitoring look like?** Multiple answers were possible for this question. The possibilities to choose from were: reviewing past results with the tenants, planning the future with your tenants, reminding your tenants of their goals and obligations, and blank space to insert other options. The rationale was to see, how the incubator approaches monitoring.

*Figure 23: Monitoring (incubators)*

![Bar chart showing the monitoring activities of incubators.]

Most incubators (80%) reviews past results with their tenants. 70% of the asked incubators plans the future with their tenants. A relatively small percentage (30%), reminds their tenants of their goals and obligations. Only 10% of the respondents don’t control their tenants at all, believing nurturing personal relationship is more important than control (see Figure 23).
11. Startups: How does monitoring look like in your incubator? This question is linked to question twelve for the incubators. Possible answers are therefore very similar: reviewing past results with the incubator staff, planning the future with your incubator, being reminded of your goals and obligations by the incubator staff and blank other option to insert your own text.

![Figure 24: Monitoring (startups)](image)

Interestingly, the answers by startups, differ quite a bit from the ones provided by the incubators. Majority of the startups (75%) are being reminded of their goals and obligations. The startups are planning the future with their incubators in 38% of the cases. Only 25% of the startups who replied, review past results with their incubator staff (see Figure 24).

3.5 Resource munificence questions

13. Incubators: Do you have a sufficient number of associates (incubator employees and outside contractors: lawyers, accountants,..) according to the size of your operations (available to your tenants at all times, without waiting)? The participants could choose a value on a scale from one to five. Choosing a one means the incubator does not have enough associates, and choosing a five means they have enough associates.

Most incubators choose 3 on the scale (40%), meaning they are split between enough and not enough associates. Following them, were the incubators who chose 4 (30%), representing incubators that have almost enough associates. Some incubators chose 5 (20%), believing they have enough associates. While others (10%) believe, they don’t have enough (see Figure 25).

12. Startups: Does “your” business incubator in your opinion have a sufficient number of associates (incubator employees and outside contractors: lawyers, accountants,..) according to the size of their operations (available to you at all times, without
waiting)? This question is linked to question 13 for the incubators. The startups had the same scale of one to five to choose from.

Figure 25: Number of associates (incubators)

![Bar chart showing the distribution of responses for incubators]

Similarly, as in the case of incubators, most startups (40%) chose 3/5 on the scale. 20% of the startups believe their incubator has enough associates (5/5), while other 20% chose 2 on the scale meaning, their incubator is lacking a sufficient number of associates. One startup (10%) chose 1 on the scale, which means “their” incubator clearly does not have enough associates. Last 10% chose 4 (see Figure 26).

Figure 26: Number of associates (startups)

![Bar chart showing the distribution of responses for startups]

14. *Incubator: Are you satisfied with your current associates?* The respondents had to choose a number on a scale from one to five. One representing incubators who are trying to improve their roster of associates, and five representing incubators, happy with their current situation, having all that they need. The rationale was to acknowledge, if the setting of the incubator is complete, or are they still searching for the missing parts.
Most incubators (40%) involved in the study, believe they have almost all that they need 4/5. Three incubators (30%) are in between the two extremes 3/5. Some incubator (20%), are partially trying to improve their associate situation 2/5. Only one incubator (10%) thinks, it has completely what it needs associate wise 5/5 (see Figure 27).

13. Startups: **How relevant are these associates for you?** A scale of one to five was provided to the respondents. They could only choose one number on the scale. One meant the associate don’t provide added value, while five meant the associates do provide added value. The reasoning behind the question was to see, if the startups perceive, the associates provided added value for their operations.

Most startups (50%) were torn between the two extremes and chose 3/5. According to the answers of four startups who chose 2/5 (40%), the associates provide some value but not
enough. One startup chose 5/5, meaning the associates in “their” incubator really provide added value (see Figure 28).

15. **Incubators: Are the tenants using help provided by the associates enough?** The respondents had to choose a value on the scale from one to five. One meaning their tenants are not using the associates enough, five meaning they are using the associates enough. If the tenants do not use help provided by the associates, it is meaningless to have them, or the incubator might be providing wrong associates.

*Figure 29: Are tenants using help provided by the associates enough*

The graph depicted in Figure 29 shows, 40% of the incubators chose 3/5, which means they are divided between a sufficient and insufficient number of associates. Three incubators (30%) chose 4/5 meaning, their tenants almost use the associates enough. Two incubators (20%) think, their startups could use the provided help more (2/5). There is only one incubator (10%), who believes their tenants use the help of the associates enough.

14. **Startups: Are you using help provided by the associates?** A scale from one to five was provided to the respondents. They could only choose one number on this scale. One represented no, and five represented yes. The rationale was, to acknowledge startup’s initiative to receive help.

Four startups (40%) chose 3/5, as they are not sure if they are using help or not. Two startups (20%) chose 4/5, which means they are using some help, but they could use it more. Two startups (20%), are not using the help provided at all and chose 1/5. One startup (10%) chose 2/5, which means they mostly don’t use any help. The last 10% uses the help provided by the associates’ often (5/5). The results are graphically depicted in Figure 30 bellow.
16. Incubators: Are startups using help provided by the business incubator enough (networks, contacts, business advice, legal advice, consulting,..)? The respondents were given three options to choose from: yes, no or other with a blank writing space. Incubator can add value to the tenants only, if they are using the help provided.

Figure 31: Is the help provided by the incubator used enough

Half of the incubators (50%) believe, their startups are using the help provided adequately. Four incubators (40%) believe, their startups are not utilizing the help adequately. Other 10% answered with partly (see Figure 31).

15. Startups: Are you using help provided by the business incubator enough (networks, contacts, business advice, legal advice, consulting,..)? There were three possible answers: yes, no or other with a blank writing space. The rationale was to acknowledge self-awareness of the startups, about using the help their incubator provides.
The results depicted in Figure 32 show, 80% of the respondents think they are not using help provided by their incubator enough, while 20% think they are using the help sufficiently.

*Figure 32: Are startups using help provided by the incubator enough*

![Bar chart showing 80% agree, 20% disagree]

17. **Incubators: Who is in charge of the strategic planning within the business incubator (BI)?** Multiple answer were possible for this question. The answers to choose from were: incubator manager, project manager, operations manager, and other with a blank writing space available. The reasoning behind this question, was to establish some kind of planning hierarchy.

*Figure 33: Person in charge of the strategic planning*

![Bar chart showing 90% incubator manager, 40% project managers, 30% operations managers, 20% other]

Graphical presentation in Figure 33 shows, the incubator manager seems to be the head of strategic planning in 90% of the incubators. Project managers take care of the strategic planning in 40% of the incubators. Operations managers are main strategic planners in 30% of the incubators. Strategic planning is also managed by the directors, or owners in some incubators (20%).

18. **Incubators: How fast are the reaction times on your operations within the incubator?** A scale from one to five was provided in the survey. The respondents were
asked to choose only one value. Values leaning towards one meant, the incubator has many layers of asking permissions. Values leaning toward five meant, people can make their own decisions. The other section below the scale was provided for their own ideas. The reasoning was to see, how simple the operations within the incubator are. Can people act upon their ideas, or do they have to check with several management officials before implementing their ideas?

*Figure 34: Reaction times*

![Reaction times chart](image)

The majority of the incubators (67%) believe, people inside the incubator are mostly free to make their own decisions (choosing 4/5 on the scale). A number of incubators (22%) believe, they give the people complete freedom when making operational decisions (5/5). Only 11% of the incubators responded with 2/5, meaning the people are not completely autonomous and therefore have to ask for permission (see Figure 34).

19. **Incubators: How well is the incubator sponsored?** A scale from one to five was provided to the incubators. Value 1/5 meant the incubator is struggling to get through. Value 5/5 meant they have too much funds. An incubator which is well sponsored, is able to follow their vision and execute their plans easier, than an incubator with poor funding. It is therefore a goal of each incubator, to obtain as many sponsors as possible.

The results depicted in Figure 35 show, majority of the incubators (70%) are sponsored below their plans. These incubators have some funds, but are still struggling to get through. The middle of the scale (3/5), was chosen by 20% of the incubators. Other 10% are on the bottom of the scale (5/5), really struggling to get through.

16. **Startups: How well is the incubator sponsored in your opinion?** The question is linked to question 19 for the incubators. The same scale of one to five was provided. One meaning, they are struggling to get through, and five meaning they have too much. The answers should reveal the perception of the startup.

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One third of the respondents (33%) chose 3/5, which means they perceive their incubator as averagely sponsored. Another 33% chose 2/5, meaning they perceive their incubator fairly struggling to get by. A portion of startups (22%), believe their incubator is considerably stable with funds (4/5). Last 11% of the startups, are viewing their incubator as legitimately struggling and answered with 1/5 (see Figure 36).

20. Incubators: Who divides the resources? Multiple answers were possible. The answers provided were: supervisory board, incubator manager, operations manager, and other with a blank writing space. It is crucial to know who has such an important obligation.

Graphical presentation depicted in Figure 37 shows, supervisory board is in charge of the distribution of resources in 60% of the incubators. Incubator manager divides the resources in 50% of the incubators. Operations managers are in charge of the resources in 10% of the incubators. Two incubators (20%), have a director who is in charge of the distribution of resources.
21. **Incubators**: How would you rate your overall incubator environment? A scale of one to five was given to the respondents. Value one, represented horrible environment, value five on the other hand, represents a harmony. Good incubator environment is important for successful incubation.

*Figure 38: Incubator environment (incubators)*

Six incubators (60%) chose value 3/5, which means they have an acceptable environment. Two incubators (20%), have a good environment that could be improved. The last 20% have a harmony in their incubators (see Figure 38).

17. **Startups**: How would you rate your overall incubator environment? The question is linked to question 21 for the incubators. Value one on the scale represented horrible environment, while value five represented a harmony.

Most startups (44%) chose 3/5 on the scale, their incubator environment is therefore acceptable. Second most chosen answer was 4/5 (33%). Some startups (11%), perceive
their incubator environment as harmony 5/5. One incubator (11%) chose 2/5, meaning their environment is below acceptable (see Figure 39).

Figure 39: Incubator environment (startups)

22. Incubators: Could the relationship between the tenants and the incubator staff be improved? The respondents were given a scale from one to five. Values closer to one meant the relationship could definitely be improved, values closer to five meant the relationship is great as it is. The rationale was to see, how satisfied the incubators, with the relationships inside the incubator are.

Figure 40: Could relationship improve (incubators)

Results depicted in Figure 40 show, half of the incubators think the relationship could use some improvements (choosing 2/5 on the scale). One third believes, the relationships inside their incubators mostly don’t need improvement (4/5). One incubator (10%), would definitely improve the relationship. The last one (3/5), thinks the tenants and incubator staff have an acceptable relationship (10%).

18. Startups: Could the relationship between the tenants and an incubator staff be improved? The question is linked to the question 22 for the incubators. The scale should
have been the same as for the incubators. Instead one means, the relationship between the tenants and an incubator is weak, and five means the relationship is strong.

*Figure 41: Could relationship improve (startups)*

According to the results depicted in Figure 41, 33% of the startups have a relationship stronger than average, but that could be improved (4/5). Startups that chose 3/5, represent 22% of the respondents. Some startups (22%) perceive their relationship with the incubator staff as really bad 1/5. Startups who acknowledge their relationship as below average (2/5) represent 11%. Other 11% believe, their relationship is as strong as possible (5/5).

23. Incubators: *How would you rate your relationship between the tenants themselves?* A scale of one to five was given to the respondents. One meant the relationship is weak, five meant the relationship is strong. The rationale behind the question was to see, if the tenants communicate, and share ideas or keep things to themselves.

*Figure 42: Rate the relationship (incubators)*
The results depicted in Figure 42 show, 70% (4/5) of the incubators think, the relationship between their tenants is almost as strong as possible. Other 30% (3/5), believe the relationship between the tenants are neither weak nor strong.

19. **Startups:** **How would you rate the relationship between the tenants of “your” incubator?** The question is linked to question 23 for the incubators. A scale from one to five was provided to the respondents. Values closer to one mean the relationship is weak, values closer to five mean the relationship is strong. It will be interesting to see, how different are the answers provided by the startups.

*Figure 43: Rate the relationship (startups)*

![Graph showing relationship ratings by startups. The majority of startups (33%), believe their relationship with other tenant is in the middle of the scale (3/5). 4/5 was chosen by 22% of the startups. Another 22% of the startups believe, their relationship is perfectly strong (5/5). One startup (11%) believes, they have a weak relationship, while the last 11% (2/5) believe, they have poor relationship that could be worse (see Figure 43).]

24. **Incubators:** **Does your incubator possess any networks outside the incubator that are relevant for your tenants?** Possible answers were yes, no or other with a blank writing space. Networks and outside connections can be very beneficial for the tenants.

*Figure 44: Relevant networks (incubators)*
The results depicted in Figure 44 show, most incubators (80%), believe they do possess relevant networks for their tenants. Other 20% of the incubators, believe they do not possess any relevant networks.

20. Startups: **Does your incubator possess any networks outside the incubator that are relevant for you?** The question is connected to question 24 for the incubators. The respondents could choose one of the three answers: yes, no, or other with a blank writing space. The rationale was, to acknowledge startup’s point of view on the same matter.

![Figure 45: Relevant networks (startups)](image)

The answers provided by the startups, differ quite a bit from the answers provided by the incubators. The majority of the startups (56%) believe “their” incubators do not possess any outside networks. The remaining startups (44%) believe, their incubators possess some outside networks relevant for them (see Figure 45).

### 3.6 Graduation questions

25. **Incubators:** For a sample of your last 10 graduates categorize them according to this table. Write down how many fit into each bracket (the sum should be 10). Five different graduation outcomes were provided: 1. The incubatee is surviving and growing profitably; 2. The incubatee is surviving and growing and is on path toward profitability; 3. The incubatee is surviving but is not growing and is not profitable or is only marginally profitable; 4. Incubatee operations were terminated while still in the incubator, but losses were minimized; and 5. Incubatee operations were terminated while still in the incubator, and the losses were large.

The results depicted in Figure 46 show, the average of graduates achieving each outcome. Perfectly the sum of averages from all five outcomes would be 10. On account of some incubators answering with a sum lower than 10, our sum of all outcomes is also below 10.
Most incubator graduates are growing profitably, after their incubation period ends (3.1/7.8). Second most common result, are incubatees that are on a path toward profitability (2.3/7.8). Third outcome represent startups who are not growing and are only marginally profitable (1.2/7.8). Incubatees who terminated operations inside the incubator, with minimal losses represent 0.8/7.8 graduates. The lowest average of graduates (0.4/7.8) belongs to the tenants, which terminate operations within the incubator with big losses.

Figure 46: Graduation outcomes

26. Incubators: What are your incubator’s graduation criteria? This is a multiple possible answer question. Seven answers were provided to the participating incubators: reaching positive cash flow, certain number of employees hired by the startup, outgrowing the incubator or needing own facilities, merger or acquisition, creation of an autonomous board of directors, achieving short term funding, and option other with a blank writing space. The goal was, to establish a list of graduation criteria based on the importance.

Figure 47: Graduation criteria (incubators)

Based on the results depicted in Figure 47, reaching a positive cash flow is acknowledged as the most important graduation criteria (90%). Hiring a certain number of employees by
the startup, seems to be the second most important criteria (70%). Outgrowing the incubator, or needing own facilities is used in 60% of incubators. Achieving short term funding (40%), is the fourth most important indicator. 20% of the incubators recognize merger or acquisition, as a graduation criterion. Incubators who wrote their own ideas (20%), added reaching max number of years in the incubator to the list. The least acknowledged (10%) graduation indicator, is the creation of an autonomous board of directors.

21. Startups: What are your incubator’s graduation criteria? This question is the exact same, as question 26 for the incubators. It is also a multiple possible answer question, and has the same possible answers.

Figure 48: Graduation criteria (startups)

According to the answers provided by the startups, outgrowing the incubator or needing own facilities is the most common (44%) graduation criteria. Reaching a positive cash flow, was acknowledged by 33% of the startups. Same percentage (33%) of startups, sees merger or acquisition as their incubator’s graduation criteria. Achieving long term funding, is fifth most mentioned graduation criteria (11%). Option other was chosen by 11% of the startups, these startups believe, their incubator does not have any graduation criteria. Other two possible answers, were not chosen by anyone (see Figure 48).

27. Incubator and Startup 22. These questions were identification questions, meant for easier comparison between the startup and the incubator. The survey is anonymous, therefore the results of this question will remain anonymous.
4. DISCUSSION

The main theoretical contribution of this thesis is improvement of the performance evaluation model, for business incubators originally developed by Hackett and Dilts (2004a). To improve the model, an additional dimension known as “graduation” was added to the already established dimensions: selection performance, business assistance and monitoring, and resource munificence. Further each of the dimensions were then elaborated on, by presenting their background, reviewing literature on the subject, and choosing an appropriate model to assess the dimensions. Assessment models were selected among the models presented by two authors (Hackett & Dilts, 2004a; Bergek & Norrman, 2008) through the literature. The newly established model was then tested on two group samples, which are a part of the Slovenian innovative environment. The first sample included business incubators and similar institutions, while the second sample included startups who are/were a part of these institutions.

In this part of the thesis, a connection between the theory presented, and the results of the surveys will be made. I will compare the important views of the incubators, and the tenants and interpret the results. A newly established model, will show us, the current situation of the Slovenian business incubator environment. Finally, I will give some recommendations for future improvements. Findings for each dimension will be first presented/discussed separately, and later summarized all together.

4.1 Selection performance discussion

The first step of business incubation process is the selection of new tenants. Screening processes helps incubators to evaluate crucial characteristics vital to discover future successful enterprises (Aerts et al., 2007; Hackett & Dilts, 2004a; Lumpkin & Ireland, 1988; Peters et al., 2004; Merrifield, 1987). Selection criteria is developed around the objectives of the incubator. Each incubator has its own selection criteria which pursue their objectives accordingly (Smilor, 1987).

This part is meant to establish selection practices of Slovenian incubators. First, I asked both sample groups to allocate the selection parameters according to their importance in the selection process. The parameters, perceived as more important by the incubator, should consequently be more important for the success of the venture. The results of the survey show that the startup’s idea (2/7) is by far the most important selection parameter, followed by market attractiveness (3.5/7), growth potential (3.9/7), startup’s management team (4.1/7), and experience of the startup (4.3/7).

These results verify Hofstede’s (2010) claim, that European companies are long term oriented, focusing more on the soft criteria (market fit and management team). The
financial ratios took second to last place (4.4/7) showing they are not widely used as a screening criteria. Since startups reinvest most of their money into future growth, their financial indicators are not a good reference for future success of the venture (Rothaermel & Thursby, 2005b). The least important selection parameter was the chemistry between the incubator and the tenant (5.9/7). The importance of this parameter might be underrated by Slovenian incubators.

A selection strategy model developed by Bergek and Norrman (2008) was used to assess the practice of tenant selection by the Slovenian incubators. Two questions were asked to identify the parameters needed for establishment of the matrix. The first question was: what is more important for successful incubation: the startup’s idea, or startup’s management team? The second question was: which approach is better, allowing a wider crowd to be a part of your incubator or picking only a few superb ventures that will probably succeed? According to the results of the survey, startup’s management team (55%) is more important for successful incubation than startup’s idea (45%). These results are in accordance with the view of Silicon Valley Angel investor, Ron Conway (2015), who believes people are the most important factor for startup’s success. Having a strong startup team is therefore crucial (Loehr, 2016). It is very common for the entrepreneurs to fail a few times before finding the right product. Failing quickly and cheaply, means they have the opportunity to learn and try again with a different product (Hackett & Dilts, 2004a). Strong startup teams can work on their strengths and find a new idea if the old one fails. Even Though startup’s management team seems to be more important, we mustn't neglect the importance of the idea. Nonetheless, it is strange that management team is perceived as more important for successful incubation than the idea, however it was placed behind it on the selection criteria question.

*Figure 49: Selection strategies (chosen)*

![Selection strategies](source)

Majority of the incubators (82%) in Slovenia allow a wider crowd to be a part of the incubator, while 18% pick only a few superb ventures. This information shows us, a wide variety of startups has the opportunity to be a part of the incubator if they show interest to join one. If we place Slovenian incubators into the matrix, we can see they believe in survival of the fittest and entrepreneur focused selection (see Figure 49).

As mentioned before, this results in a diversified portfolio consisting of strong (educated, experienced, and productive) entrepreneurs/teams, working in several fields.

4.2 Monitoring and business assistance discussion

Business incubators which provide quality business assistances, and monitor their tenants frequently, should have better incubation results. In order to establish a sound model, we need to discuss incubator’s role in the incubation process (Bergek & Norrman, 2008). Questions to be asked are: who is the initiator (the incubator staff or the entrepreneur) of monitoring and business assistance, and what is the intensity and continuity of monitoring/assistance? The results show that both parties are the initiators in 90% of the incubators, while the incubator initiates the process in other 10%. Which shows both parties are active at all times. The incubator observes the tenant, and intervenes if needed, while the tenant asks for help if a problem arises. When asked how often they are in business contact with each other, 70% of the incubators answered weekly, and 30% daily. Startups on the other hand answered weekly with 33%, monthly 44%, and other 22%: yearly or less than that. The startups therefore, perceive their business contact as less common than that of the incubators.

Figure 50: Incubator's role in the incubation process (marked)

Frequent interactions between the tenant and the incubator are very important. Business incubators can identify tenant’s needs easier, and adapt their assistances appropriately (Scillitoe & Chakrabarti, 2010). For easier establishment of the model, both sample groups were directly asked about the incubator’s role in the incubation process. The results depicted in Figure 50 show, their perspectives differ quite a bit. According to the average of the incubator survey answers, incubator’s role is in between the manager and the external moderator (4.6/10). According to the average of the startup survey answers,
incubator’s role is more as an external moderator (6.7/10). Startups believe, they are receiving less help by the incubator than the incubators think they are providing.

It is also important to acknowledge which assists are being provided by the incubator, and which assist are used by the tenants. According to the answers of the incubators, each of the incubators provides business development advice and entrepreneurial training, 80% provide financial advising, 70% advertising, 50% legal counseling, 40% accounting, and 30% subsidized infrastructure or networking. When comparing these results with the answers of the startups we can clearly see that the startups are not aware of many assistances that their incubator is providing. Interestingly, a majority of the startups (89%) said that their incubator provides business and development advice, 56% of the incubators provide entrepreneurial training, 33% subsidized infrastructure or networking, and the other four assistances (accounting, legal counseling, advertising and financial advising) are each provided by 11%. Incubators, should consequently advertise their assistances better to their tenants.

It is interesting to see which forms of assistance are being used by the startups, according to the answers of their survey. Business development advice is used by 67% of the startups, subsidized infrastructure or networking by 33%, advertising 22%, entrepreneurial training and legal counseling 11% each, while accounting and financial advising aren’t used at all. The fact that startups were not aware of the assistances their incubator provides was surprising to say the least. Seeing how little they use those assist is alarming.

### 4.3 Resource munificence discussion

It was already mentioned that resource munificence can be broken down into, resource availability, quality and utilization. Incubator resources can be divided into internal (personnel, operations, economics, and environment) and external resources (innovation networks). Business incubators high in resource munificence (well-rounded incubators, with extensive networks, and access to strong management teams and quality innovation) have an advantage over the ones with low resource munificence (Hackett & Dilts, 2004a). Incubators with high resource munificence, are more likely to be able to infuse tenants with needed resources. These incubators can expect better performance and outcomes of the incubation process.

To check internal resource availability, both sample groups were asked two questions. First question was: how well do they think their incubator is sponsored? The average of incubator answers was 2.1/5, while the average of startup answers was 2.6/5. This shows, both groups think the incubator should have more funds. The second question was, if their incubator had a sufficient number of associates (incubator employees and outside contractors: lawyers, accountants, etc.) according to the size of the incubator operations?
The average assessment of a sufficient number of associates by the incubators was 3.5/5, while it was 3.1/5 according to the startups. The results show the number of associates is fine, but could be improved. To check the availability of external resources, both sample groups were asked if their incubator possessed any networks outside the incubator that are relevant for the tenants. In fact, a Majority of the incubators (80%) believe, they possess relevant networks for the tenants; other incubators (20%) believe they do not possess any relevant networks. The answers of the startups were quite different, with only 44% of the startups involved believing that their incubator possesses relevant networks; while the other 56% disagree. This Discrepancy of opinions, might be related to poor advertising, communication, or usage of the networks. Availability of internal and external resources is therefore somewhat insufficient, and needs improvement.

Quality of the resources was assessed based on the answers of four questions. The incubators were asked: “if they are satisfied with the current incubator associates?” Their average answer was 3.4/5, which shows they are quite satisfied, but that there is still room for improvement. The startups were asked: “how relevant the associates are for them?” According to the average answer (2.8/5), startups believe the associates are relevant, but not relevant enough. Both sample groups were asked: “how would they rate their overall incubator environment?” Their average opinion is very similar, and incubators valued their overall environment as 3.6/5, while the startups valued it at 3.44/5. The average environment grade is therefore quite low according to the results. On account of innovation being highly affected by the work environment, these results are alarming (Hansen & Crespell, 2008). Both groups were also asked: “if the relationship between the incubator staff and the tenants could be improved?” The incubators answered with 2.6/5 on average, while the startups answered with 3/5 on average. They both believe the relationship is fairly good, but could be improved. Even though the quality of the resources looks decent, there is a lot of room for improvement.

To establish a level of utilization of resources, both sample groups were asked two questions. First question was: “are the tenants using help provided by the associates enough?” The incubators responded on average with 3.3/5, and the startups responded with 2.9/5. We can see from the answers that the associates are being used at a certain level. Second question for both groups was: “are the startups using help provided by the incubator enough (networks, contacts, business advice, legal advice, consulting, etc…)?” Half of the incubators (50%) answered with yes, 40% with no, and the last 10% with partly. On the other hand, only 20% of the startups answered with yes, while other 80% responded with a no. Either way, the results show the startups are not using enough of the assistances provided by the incubator.

Survey questions in this section, were used to assess resource munificence of Slovenian incubators. More specifically, to assess their approximate resource availability, quality, and
utilization. According to the results of the survey, the resource munificence of Slovenian incubators is neither poor nor strong. The fact that the munificence is somewhere in between means they should strive to improve it in order to increase the overall performance of the incubation.

4.4 Graduation discussion

Successful incubation process ends with the graduation of incubates. The incubator leads their tenants through the incubation process to achieve graduation as soon as possible. Graduation policies are established by each incubator separately. Good policies include specific criteria relative to incubator's mission. They are presented to the tenants, with admission to the incubator. Tenants need to understand, and accept these conditions. Furthermore, policies should be reviewed constantly. Reaching a certain number of graduation indicators represents readiness to graduate. The Business incubator decides on the amount of applicable indicators. It also reviews specific cases and decides if a certain tenant is ready for graduation or not (Colbert et al., 2010).

Hackett and Dilts (2004a) described five possible incubation outcomes and built a model to assess the performance of incubation. A sample of Slovenian incubators was asked two questions in order to assess graduation performance with the model mentioned above. The first question for the incubators was to categorize the last 10 graduates according to the incubation outcomes of this model. Perfectly, the sum of averages from all five outcomes would be 10. On account of some incubators answering with a sum lower than 10, our sum of all outcomes is also below 10 (7.8). The first group are the startups, which survive graduation and grow profitably (3.1/7.8). The second group are the startups that survive incubation, grow, and are on the path toward profitability (2.3/7.8). The third group are the startups that survive, but are not growing nor profitable (1.2/7.8). The fourth group are the startups, which terminate operations while still in the incubator with minimal loses (0.8/7.8). Fifth group are the startups, which terminate their operations while still in the incubator, with high loses (0.4/7.8). Agreeing with Hackett and Dilts (2004a), the outcomes 1, 2, and 4, are seen as successes and 3, and 5, as failures in this thesis. According to the results, 6.2/7.8 startups taking part in the incubation process are therefore seen as success, while only 1.6/7.8 are seen as failure. According to the results, Slovenian incubators seem very successful in graduation performance. There are several possible reasons for high graduation rates. While the most appropriate reason would be successful incubation process provided by the incubator, low graduation criteria is more probable in this case. Incubators with low graduation standards, have more graduates, which does not mean these ventures are deemed to succeed outside the incubator. BIs could also achieve high graduation rates, by only choosing startups with great potential to succeed.
The second question was, “what are your incubator’s graduation criteria?” It seems reaching a positive cash flow is the most important graduation criteria (90%), followed by the hiring of a certain number of employees by the startup (70%), outgrowing the incubator (60%), achieving wanted funding (40%), merger or acquisition (20%), reaching a maximum number of years in the incubator (20%), and creation of the autonomous board of directors (10%).

4.5 Overview of the situation in Slovenia

An average incubator according to the results is a public incubator, which does not specialize in any specific fields. It believes that the startup’s team is the key to successful incubation, and selects future tenants mostly on soft criteria (market fit and management team). A wide variety of startups has the opportunity to join Slovenian incubators. The startups are assessed by a group of people (experts), who are in charge of the selection process. The selection criteria is transparent, so the applying candidates can prepare themselves better. New tenants are assessed based on five selection parameters, the most important parameter being the idea of the startup. Selection performance of Slovenian incubators is strong according to the results.

Both startup and the incubator are usually initiators of the business assistance contact. Incubator’s role in the incubation process, is almost exactly in the middle between the manager, and the external moderator. This means, Slovenian incubators are on average, more of an accommodation provider than an incubator. It is incubator’s role to assist their tenants, they should therefore be more of a manager, than an external moderator. Most commonly provided forms of business assistance are: business development advice and entrepreneurial training (100%), financial advising (80%), advertising (70%), legal counseling (50%), accounting (40%), and subsidized infrastructure or networking (30%). The results show, startups are not aware of all the forms of assistance that their incubator is offering them. Another alarming fact, is the low amount of business assistances used by the startups. Incubators should advertise the assistances they provide more, while the startups should increase using the assistance offered in order to increase the performance of business assistance and monitoring parameter.

Resource munificence was divided into resource availability, quality and utilization. Assessing availability of internal and external resources provided by Slovenian incubators, shows the level of resources provided is insufficient. The quality of the resources is decent, but needs improvement. The utilization of the resources is the worst of the three parameters. It is clear that incubators should work on increasing the quantity and the quality of the resources they provide. They should also find ways to increase the level of utilization of resources.
According to the results, Slovenian incubators are very successful with graduation performance. 6.2/7.8 startups taking part in the incubation process are seen as success, while only 1.6/7.8 are seen as failure.

Overall, Slovenian incubators are working in the right direction, but will need more time, and funds in order to improve the performance of their incubators.

CONCLUSION

Even though the performance of business incubators is hard to measure their existence depends on it. Better performing incubators attract much needed funding to survive. Literature review shows business incubators are mostly evaluated based on the outcomes of the incubation process. While this indicator is very simple to use, it does not tell the whole story of business incubation. Business incubators should instead be evaluated more holistically. The incubation process can be divided into several phases. Each phase of the incubation process should therefore be evaluated separately, and then included in the overall performance of the business incubator. The incubation process begins with an assessment of the applying startups based on predetermined selection criteria. The startups admitted into the incubator are monitored, assisted and infused with resources. The incubator provides a friendly environment, necessary for development of the startup. The goal is to provide startups with the tools needed, to survive on their own after the incubation. The incubation process ends, once the startups achieve a certain number of graduation criteria, or reach the end of the incubation period. In summary, they either graduate or terminate their operations.

In order to improve the performance of the incubator, BIs should work on improving the whole incubation process. This means devoting time to each of the four parameters (selection performance, monitoring and business assistance intensity, resource munificence, and graduation) influencing the performance.

Furthermore, incubators should choose an appropriate selection process, which suits their goals. BIs should strive to provide the best business assistances possible, by listening to the needs of the tenants, and adapting the offering accordingly. Quality and quantity of the business assists should be increased constantly. Tenants should be monitored often and consulted as much as possible, on account of business incubator being a support institution, not a hotel. Resource munificence of the incubator should be enhanced. Incubators should find ways to increase startup’s utilization of incubator’s resources and assistances. Development of strong external networks should bring further value to the tenants. Incubators should acquire additional external funding to get more maneuvering space to run their operations. Early and successful graduation, will come as a reward for good performance throughout the incubation process. A comprehensive approach of
measuring performance gives us a much better overview of the actual performance of the business incubator.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study is limited in the size of the sample, due to the size of the Slovenian innovative environment. To increase the sample, other innovative institutions, similar to business incubators were included, such as university incubators and technology parks. The results of the study are therefore not generalizable. Rather, they only portray the situation in Slovenia. In order to properly test the performance evaluation model proposed, the size and the diversity of the sample need to increase. The model should be tested in different countries and innovative systems (accelerators, technology parks, university incubators, business incubators). Secondly, this study does not consider the assistances provided outside the incubator, which help startups improve their performance. These assistances might have a crucial role in the outcome of the incubation process. Assessing the performance with mostly qualitative parameters is another limitation. Qualitative results give us answers that might differ according to the interpretation. Quantitative results on the other hand are generally easier to interpret. Surprisingly, language is a possible limitation of the study. Incubator managers, and the startups were initially asked to solve the survey in English, which proved to be more of a struggle than imagined. The questions might have been misunderstood, and the answers tempered.

Future researchers should try to find better parameters to measure the performance, or at least improve the suggested parameters. The importance of each separate performance parameter should therefore be further explored. Next generation of incubators can consequently improve the incubation process, by improving the performance of the important parameters. Finding appropriate quantifiable indicators to measure the performance of the incubation process would help us to assess the contribution of business incubators. More research is needed to show the value of business incubators, which is still understated.

Future research should explore the importance of the people involved in the incubation process and incubation environment. Incubator staff, tenants, incubator manager, outside associates, all have an influence on the performance of the incubator.

Low utilization rates of resources, business assistance, and other incubator offers are something worth exploring. Poor awareness of the assistances provided by the incubator is another phenomenon that needs further exploration. Funding is an important component of business incubation. Researchers should find ways for incubators to obtain additional external funds.
REFERENCE LIST

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Appendix A: Slovenian summary


Namen magistrske naloge je bil zgraditi izboljšan model za celovito merjenje uspešnosti poslovnih inkubatorjev. S pomočjo takšnega modela bi lahko merili uspešnost širše množice raznolikih inkubatorjev. Avtorja Hackett in Dilts (2004a) sta uspešnost inkubatorjev merila s formulo sestavljeno iz treh parametrov:
Uspešen poslovni inkubator = dober izbirni proces + kontrola in intenzivnost poslovnega svetovanja + darežljivost virov


Kljub temu, da je uspešnost inkubatorjev težko meriti, je njihov obstoj odvisen ravno od tega. Bolj uspešni inkubatorji lažje privabijo sredstva potrebna za normalno delovanje in s tem izboljšujejo možnosti za uspešnost startupov. Uspešnost poslovnih inkubatorjev je potrebno meriti celovito. To bo pripomoglo k temu, da bodo poslovni inkubatorji izboljševali celoten inkubacijski proces in ne le končne rezultate. Če si inkubator želi splošnega izboljšanja uspešnosti, je potrebno vsakemu izmed štirih prej omenjenih parametrov posvetiti čas. Obenem je potrebno iskati izboljšave modela, ki bo lahko generalno ocenil uspešnost poslovnih inkubatorjev in jim na ta način pokazal kaj lahko izboljšajo.

Appendix B: English survey for the incubators

Dear incubator/incubator manager,

My name is Rok Vrečar. I am a student of Faculty of Economics in Ljubljana, currently writing my Master's thesis on the performance of business incubators. Incubators are a fairly new and unexplained phenomenon. They are a useful tool for performance enhancement of start-ups. My goal is to show their value to the general public and try to add some ideas on how to improve incubation process. I built the survey to help me achieve my goals. This survey will take around 10 minutes of your time. Insights provided will crucially assist me in my work. This first survey is meant for you, while the second one is meant for your tenants. I therefore ask you to please send this second survey to as many of your tenants (current and past) as possible. Please try to answer all questions of the survey meant for you. I would like to ask you to identify your incubator in the space provided in the end, so I can connect your answers to the answers of your tenants and compare them. The results of this survey will only be known to me and my mentor. Conclusion of my thesis...
will provide ANONYMOUS results. If you still don't feel comfortable identifying your incubator, could you at least write if you suffice conditions for: a business incubator, university incubator, or only a B record incubator. Your realistic answers will help me draw valuable conclusions, which should be interesting to you and your stakeholders. Thank you for your time and trust. Proceed to the survey by clicking on Next page.

Q1 - Allocate the selection parameters, according to your selection process. (1-most important, 7-least important).

Financial ratios of the start-up
Start-up's management team
Experience of the start-up
Start-up's idea
The market attractiveness
Growth potential of the start-up
Chemistry (start-up - incubator)

Q2 - Which parameters would you add, on top of the 7 listed in question one (above)? (If you think those 7 parameters are enough insert / or 0)

Q3 - Who selects new tenants in your business incubator?
Multiple answers are possible

☐ Incubator manager alone
☐ Fixed selection team
☐ Team of experts from each field (start-ups are involved in)
☐ Other:

Q4 - According to your experience, what is more important for successful incubation?

☐ Start-up's idea
☐ Start-up's management team
Q5 - Which approach is better?

- Picking only a few superb ventures that will probably succeed
- Allowing wider crowd to be a part of your incubation. Market will sort things out anyway.

Q6 - Is your selection criteria transparent, so future tenants can prepare themselves better for your requirements?

- Yes
- No
- Other:

Q7 - How many parameters does it take in your opinion, to have a balanced set of screening practices (number of selection parameters, from 1 to 10)?

☐ Other:

Q8 - Who is the initiator of the contact in business assistance situations (between the incubator and the tenant)?

- The incubator
- The tenant
- Both

Q9 - What is incubator’s role in the incubation process? 1 = business incubator manages the incubation process completely (almost overtakes the tenant-strong intervention); 5 = business incubator is half the manager half the observer (helps the tenant to manage its process and intervenes if needed); 10 = business incubator only observes the process and does not intervene in tenant’s work (laissez faire)

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<th>10</th>
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Q10 - What do you assist your tenants with?

Multiple answers are possible

☐ business development advice
☐ accounting
☐ entrepreneurial training
☐ advertising
☐ legal counseling
☐ financial advising
Other:

Q11 - How often are you in a business contact with your clients

☐ Daily
☐ Weekly
☐ Monthly
☐ Quarterly
☐ Half yearly
☐ Yearly
☐ Other:

Q12 - How does your monitoring look like?
Multiple answers are possible

☐ reviewing past results with the tenants
☐ reminding the tenants of their goals and obligations
☐ planning the future with your tenants
☐ Other:

Q13 - Do you have a sufficient number of associates (incubator employees and outside contractors: lawyers, accountants,..) according to the size of your operation (available to your tenants at all times, without waiting)?

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Q14 - Are you satisfied with your current associates?

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Q15 - Are the tenants using help provided by the associates enough?

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</table>

Q16 - Are start-ups using help provided by the business incubator enough (networks, contacts, business advice, legal advice, consulting,..)?

☐ Yes
☐ No
Q17 - Who is in charge of the strategic planning within the BI?
Multiple answers are possible

- Incubator manager
- Operations managers
- Project managers

Q18 - How fast are the reaction times on your operations within the incubator?

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Q19 - How well is the incubator sponsored?

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</tbody>
</table>

Q20 - Who divides the resources?
Multiple answers are possible

- Supervisory board
- Incubator manager
- Operations manager

Q21 - How would you rate your overall incubator environment?

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<th>Harmony</th>
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</thead>
<tbody>
<tr>
<td>Horrible environment</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

Q22 - Could the relationship between the tenants and the incubator staff be improved?

<table>
<thead>
<tr>
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<th>Definitely NOT</th>
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<tbody>
<tr>
<td>Definitely</td>
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Other:
Q23 - How would you rate the relationship between the tenants themselves?

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<tr>
<td>Other:</td>
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</tbody>
</table>

Q24 - Does your incubator possess any networks outside the incubator that are relevant for your tenants?

☐ Yes
☐ No
☐ Other:

Q25 - For a sample of your LAST 10 graduates categorize them according to this table. Write down how many fit into each of the brackets. (the sum should be 10).

| The incubatee is surviving and growing ... |   |
| The incubatee is surviving and growing and ... |   |
| The incubatee is surviving but is not ... |   |
| Incubatee operations were terminated while still ... |   |
| Incubatee operations were terminated while still ... |   |

Sum

0

Q26 - What are your incubator's graduation criteria?

Multiple answers are possible

☐ Reaching positive cash flow
☐ Certain number of employees hired by the start-up
☐ Outgrowing the incubator or needing own facilities
☐ Merger or acquisition
☐ Creation of autonomous board of directors
☐ Achieving short term funding
☐ Other:

Q27 - Could you please identify your incubator (The purpose of this question is only to connect survey results of the tenant and the incubator. Your answers are anonymous, my conclusion will therefore be anonymous as well.)
Appendix C: Slovenian survey for the incubators

Dragi inkubator/inkubator manager,


Q1 - Kako pomembni so spodaj navedeni parametri, v vašem procesu izbiranja inkubirancev.  
(Razvrstite: 1-najbolj pomembno, 7-najmanj pomembno)

finančni kazalniki
start-upa
vodstvo start-upa
start-upove
izkušnje
start-upova ideja
privlačnost start-upovega trga
potencial za start-upovo rast
ujemanje
(inkubator-startup)

Q2 - Ali bi dodali še kakšen izbirni parameter, ki se vam zdi pomemben in ni naveden v prvem vprašanju. (V primeru, da so to vsi parametri v polje vpišite 0 ali /)

Q3 - Kdo izbira nove inkubirance v vašem inkubatorju?
Možnih je več odgovorov

☐ vodja inkubatorja
☐ izbirna komisija, ki se ne spreminja (vedno isti ljudje)
☐ izbirna komisija, ki se spreminja glede na področja delovanja bodočih inkubirancev
☐ Drugo:
Q4 - Kaj je glede na vaše izkušnje bolj pomembno za uspešno inkubacijo?
- ideja, ki jo start-up ima
- vodstvo (ljudje), ki upravlja(-jo) start-up

Q5 - Kateri pristop je boljši?
- sprejeti le odlična zagonska podjetja, ki bodo zelo vrjetno uspela
- sprejeti večje število inkubirancev (trg bo naredil svoje- dobra podjetja bodo uspela, slaba pa propadla)

Q6 - Ali je vaš izbirni proces javno znan in tako dostopen bodočim prosilcem za inkubacijo, da se bolje pripravijo na izbirni proces?
- ja
- ne
- Drugo:

Q7 - Koliko različnih parametrov mora inkubator imeti, da je njegov izbirni proces celovit? (vpišite število parametrov od 1-10)

Q8 - Kdo je pobudnik kontakta v primeru potrebe po poslovne pomoči (med inkubatorjem in inkubirancem)
- inkubator
- inkubiranec
- oba

Q9 - Kakšna je vloga inkubatorja v inkubacijskem procesu? (1= inkubator popolnoma prevzame vse niti in prevzame kontrolo nad inkubirancem in ga upravlja; 5= inkubator je pol manager pol opazovalec (posreduje, ko je to potrebno); 10= inkubator le opazuje in se ne "vmešava" v delo inkubiranca)

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<tr>
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<th>7</th>
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</thead>
<tbody>
<tr>
<td>manager</td>
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<td>zunanj opazovalec</td>
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</tr>
</tbody>
</table>

Q10 - S čim pomagate svojim inkubirancem?
Možnih je več odgovorov
- svetovanje o poslovnem razvoju
[] računovodstvo
[] podjetniško usposabljanje
[] oglaševanje
[] pravno svetovanje
[] finančno svetovanje
[] Drugo:

Q11 - Kako pogosto ste v poslovnem kontaktu s svojimi inkubiranci?

[] dnevno
[] tedensko
[] mesečno
[] četrletno
[] pol letno
[] letno
[] Drugo:

Q12 - Kako izgleda vaša kontrola inkubirancev?
Možnih je več odgovorov

[] pregledovane preteklih rezultatov z inkubiranci
[] opozarjanje inkubirancev o njihovih ciljih in dolžnostih
[] načrtovanje prihodnosti z inkubiranci
[] Drugo:

Q13 - Ali imate zadostno število partnerjev (zaposleni v inkubatorji in zunanj partnerji, kot so računovodje, pravniki,...) glede na velikost vaših operacij (na voljo inkubirancem ves čas brez čakanja)?

1 2 3 4 5
nimamo zadostno število partnerjev
imamo zadostno število partnerjev

Q14 - Ali ste zadovoljni s trenutnimi partnerji?

1 2 3 4 5
poizkušamo izboljšati kakovost
imamo vse kar potrebujemo

Q15 - Ali inkubiranci dovolj uporabljajo pomoč partnerjev?

1 2 3 4 5
dasvakič
ne, premalo
da, dovolj
Q16 - Ali inkubiranci dovolj uporabljajo pomoč inkubatorja (omrežja, kontakti, poslovno svetovanje, pravno svetovanje,...)

☐ ja
☐ ne
☐ Drugo:

Q17 - Kdo je zadolžen za strateško planiranje znotraj inkubatorja?
Možnih je več odgovorov

☐ vodja inkubatorja
☐ operacijski managerji
☐ projektni managerji
☐ Drugo:

Q18 - Kako hitri so reakcijski časi za izvedbo operacij znotraj vašega inkubatorja?

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<tr>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>mnogo slojev in pridobivanja dovoljenj za izvedbo</th>
<th>ljudje se večinoma lahko sami odločajo, kako bodo izvedli operacijo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>☐</td>
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</tbody>
</table>

Drugo: ☐ ☐ ☐ ☐ ☐

Q19 - Kako dobro je vaš inkubator sponzoriran?

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<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>imamo preveč sredstev</th>
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<td>☐</td>
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</table>

Drugo: ☐ ☐ ☐ ☐ ☐

Q20 - Kdo razpolaga s pridobljenimi sredstvi?
Možnih je več odgovorov

☐ nadzorni svet
☐ vodja inkubatorja
☐ operacijski managerji
☐ Drugo:

Q21 - Kako bi v celoti ocenili vaše inkubacijsko okolje?

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<th>harmonija</th>
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</table>

slabo okolje ☐ ☐ ☐ ☐ ☐
Q22 - Ali bi se razmerje med inkubacijskimi delavci in inkubiranci lahko izboljšalo?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>ne, razmerje je popolno</th>
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</thead>
<tbody>
<tr>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>absolutno bi se lahko izboljšalo</td>
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</table>

Drugo:

Q23 - Kako bi oceni razmerje med inkubiranci samimi?

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<td>šibko</td>
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</table>

Drugo:

Q24 - Ali je vaš inkubator del kakšnih omrežij, ki ključno pripomorejo vašim inkubirancem?

○ ja
○ ne
○ Drugo:

Q25 - ZADNJIH 10 inkubirančev razvrstite glede na spodnjo tabelo (inkubiranci, ki so tako ali drugače zaključili inkubacijski proces).

inkubiranec je preživel inkubacijo in raste, ...
inkubiranec je preživel inkubacijo in raste, ter ...
inkubiranec je preživel in ne raste, bolj ...
inkubirančeve operacije so bile zaključene ...
inkubirančeve operacije so bile zaključene ...

0

Q26 - Katere parametre uporabljate kot znak zrelosti za izstop iz inkubatorja?

Možnih je več odgovorov

☐ start-up dosega pozitivne denarne tokove
☐ start-up zaposli določeno število ljudi
☐ start-up preraste inkubator in potrebuje lastne prostore
☐ združitev ali prevzemi start-upa s strani drugega podjetja
☐ start-up ustanoviti lastno upravo
☐ start-up doseže kratkoročne cilje glede zbiranja sredstev
☐ Drugo:
Appendix D: English survey for the startups

Dear start-up,

My name is Rok Vrečar. I am a student of Faculty of Economics in Ljubljana, currently writing my Master's thesis on the performance of business incubators. Incubators are a fairly new and unexplained phenomenon. They are a useful tool for performance enhancement of start-ups. My goal is to show their value to the general public and try to add some ideas on how to improve incubation. This survey will take around 8 minutes of your time. Insights provided will crucially assist me in my work. Please try to answer as many questions as possible. Some question might seem more "logical" for you incubators, but are there to compare their opinion to yours. I would like to ask you to identify your incubator in the space provided in the end, so I can connect your answers to the answers of your incubator and compare them. The results of this survey will only be known to me and my mentor. Conclusion of my thesis will provide ANONYMOUS results. I therefore ask you to answers honestly in order to improve business incubation and the performance of incubators in general. Please take your time and complete this survey by clicking on Next page.

Q1 - Allocate the selection parameters, according to the importance. (1-most important, 7-least important).

Financial ratios of the start-up
Start-up's management team
Experience of the start-up
Start-up's idea
The market attractiveness
Growth potential of the start-up
Chemistry (start-up - incubator)

Q2 - Which parameters would you add, on top of the 7 listed in question one (above)? (If you think those 7 parameters are enough insert / or 0)
Q3 - In your opinion, what is more important for successful incubation?

☐ Start-up's idea
☐ Start-up's management team

Q4 - Which approach is better in your opinion?

☐ Picking only a few superb ventures that will probably succeed
☐ Allowing wider crowd to be a part of your incubation. Market will sort things out anyway.

Q5 - Do you think selection criteria of "your" incubator is transparent enough, so future tenants can prepare themselves better, for the requirements?

☐ Yes
☐ No
☐ Other:

Q6 - Who is the initiator of the contact in business assistance situations (between the incubator and the tenant)?

☐ The Incubator
☐ The tenant
☐ Both

Q7 - What is incubator's role in the incubation process? 1 = business incubator manages the incubation process completely (almost overtakes the tenant-strong intervention); 5 = business incubator is half the manager half the observer (helps the tenant to manage its process and intervenes if needed); 10 = business incubator only observes the process and does not intervene in tenant's work (laissez faire)

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</thead>
<tbody>
<tr>
<td>Manager</td>
<td>☐</td>
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</table>

Q8 - Which assists ARE PROVIDED by "your" incubator?
Multiple answers are possible

☐ business development advice
☐ accounting
☐ entrepreneurial training
☐ advertising
☐ legal counseling
☐ financial advising
☐ Other:
Q9 - Which assist provided by "your" incubator are YOU USING?
Multiple answers are possible

☐ business development advice
☐ accounting
☐ entrepreneurial training
☐ advertising
☐ legal counseling
☐ financial advising
☐ Other:

Q10 - How often are you in a business contact with your incubator?

☐ Daily
☐ Weekly
☐ Monthly
☐ Quarterly
☐ Half yearly
☐ Yearly
☐ Other:

Q11 - How does monitoring look like in your incubator?
Multiple answers are possible

☐ reviewing past results with the incubator staff
☐ being reminded of your goals and obligations by the incubator staff
☐ planning the future with your incubator
☐ Other:

Q12 - Does "your" business incubator in your opinion, have a sufficient number of associates
(incubator employees and outside contractors: lawyers, accountants,..) according to the size of their
operation (available to you at all times, without waiting)?

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<tbody>
<tr>
<td>NOT Enough</td>
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<tr>
<td>Enough</td>
<td></td>
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Q13 - How relevant are these associates for you?

They DON'T provide added value

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They DO provide added value

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</table>
Q14 - Are you using help provided by the associates?

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<th>YES</th>
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<tbody>
<tr>
<td>NO</td>
<td></td>
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</tbody>
</table>

Q15 - Are you using help provided by the business incubator enough (networks, contacts, business advice, legal advice, consulting,..)?

- Yes
- No
- Other:

Q16 - How well is the incubator sponsored in your opinion?

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<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>They have too much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Struggling to get through</td>
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<td>No</td>
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<td>Other:</td>
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<td>Harmony</td>
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</table>

Q17 - How would you rate your overall incubator environment?

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<th>Harmony</th>
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<tbody>
<tr>
<td>Horrible environment</td>
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<tr>
<td>Other:</td>
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</table>

Q18 - Could the relationship between the tenants and the incubator staff be improved?

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<th>5</th>
<th>Strong</th>
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<tbody>
<tr>
<td>Weak</td>
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<td>Other:</td>
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Q19 - How would you rate the relationship between the tenants of "your" incubator?

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<td>Other:</td>
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</tbody>
</table>

Q20 - Does your incubator possess any networks outside the incubator that are relevant for your tenants?

- Yes
- No
- Other:
Q21 - What are your incubator's graduation criteria?
Multiple answers are possible

- Reaching positive cash flow
- Certain number of employees hired by the start-up
- Outgrowing the incubator or needing own facilities
- Merger or acquisition
- Creation of autonomous board of directors
- Achieving long term funding
- Other:

Q22 - Which incubator do you belong to? (The purpose of this question is only to connect survey results of the tenant and the incubator. Your answers are anonymous, my conclusion will therefore be anonymous as well.)

Appendix E: Slovenian survey for the startups

Dragi start-up,


Q1 - Kako pomembni so spodaj navedeni parametri, v procesu izbiranja inkubiranecv vašega inkubatorja. (Razvrstite: 1-najbolj pomembno, 7-najmanj pomembno)

<table>
<thead>
<tr>
<th>finančni kazalniki start-upa</th>
<th>vodstvo start-upa</th>
<th>start-upove izkušnje</th>
<th>start-upova ideja</th>
<th>privlačnost start-upovega trga</th>
<th>potencial za start-upovo rast</th>
<th>ujemanje (inkubator-inkubiranec)</th>
</tr>
</thead>
</table>
Q2 - Ali bi dodali še kakšen izbirni parameter, ki se vam zdi pomemben in ni naveden v prvem vprašanju. (V primeru, da so to vsi parametri v polje vpišite 0 ali /)

Q3 - Kaj je po vašem mnenju bolj pomembno za uspešno inkubacijo?

☐ ideja, ki jo start-up ima
☐ vodstvo (ljudje), ki upravlja(-jo) start-up

Q4 - Kateri pristop je po vašem mnenju boljši?

☐ sprejeti le odlična zagonska podjetja, ki bodo zelo vrjetno uspela
☐ sprejeti večje število inkubirancev (trg bo naredil svoje- dobra podjetja bodo uspela, slaba pa propadla)

Q5 - Ali je izbirni proces vašega inkubatorja dostopen bodočim prosilcem za inkubacijo, da se bolje pripravijo na izbirni proces?

☐ da
☐ ne
☐ Drugo:

Q6 - Kdo je pobudnik kontakta v primeru potrebe po poslovne pomoči (med inkubatorjem in inkubiranec)?

☐ inkubator
☐ inkubiranec
☐ oba

Q7 - Kakšna je vloga inkubatorja v inkubacijskem procesu? (1= inkubator popolnoma prevzame vse niti in prevzame kontrolo nad inkubirancem in ga upravlja; 5= inkubator je pol manager pol opazovalec (posreduje, ko je to potrebno); 10= inkubator le opazuje in se ne "vmešava" v delo inkubiranca)

<table>
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Q8 - S čim vam pomaga vaš inkubator?
Možnih je več odgovorov
Q9 - Katere pomoči ponujene s strani vašega inkubatora uporabljate?
Možnih je več odgovorov

- svetovanje o poslovnem razvoju
- računovodstvo
- podjetniško usposabljanje
- oglaševanje
- pravno svetovanje
- finančno svetovanje
- Drugo:

Q10 - Kako pogosto ste v poslovnem kontaktu s svojimi inkubatorjem?

- dnevno
- tedensko
- mesečno
- četrletno
- pol letno
- letno

Q11 - Kako izgleda kontrola vašega inkubatorja?
Možnih je več odgovorov

- pregledovane vaših preteklih rezultatov z inkubatorjem
- opozarjanje s strani inkubatorja o vaših ciljih in dolžnostih
- načrtovanje prihodnosti z inkubatorjem
- Drugo:

Q12 - Ali ima vaš inkubator zadostno število partnerjev (zaposleni v inkubatorju in zunanjji partnerji, kot so računovodje, pravniki,...) glede na velikost operacij inkubatorja (na voljo inkubirancem ves čas brez čakanja)?
<table>
<thead>
<tr>
<th>Q13 - Kako relevantni so partnerji za vas?</th>
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<thead>
<tr>
<th>Q14 - Ali uporabljate pomoč partnerjev?</th>
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<thead>
<tr>
<th>Q15 - Ali zadosti uporabljate pomoč s strani inkubatorja (omrežja, kontakti, poslovno svetovanje, pravno svetovanje,..)</th>
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<thead>
<tr>
<th>Q16 - Kako dobro je vaš inkubator sponzoriran?</th>
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<thead>
<tr>
<th>Q17 - Kako bi v celoti ocenili vaše inkubacijsko okolje?</th>
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<tr>
<th>Q18 - Ali bi se razmerje med inkubacijskimi delavci in inkubiranci lahko izboljšalo?</th>
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<thead>
<tr>
<th>Q19 - Kako bi oceni razmerje med inkubiranci samimi?</th>
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</table>
Q20 - Ali je vaš inkubator del kakšnih omrežij, ki ključno pripomogojo vam?

- [ ] da
- [ ] ne

Drugo:

Q21 - Katere parametre vaš inkubator uporablja kot znak zrelosti za izstop iz inkubatorja?
Možnih je več odgovorov

- [ ] start-up dosega pozitivne denarne tokove
- [ ] start-up zaposli določeno število ljudi
- [ ] start-up preraste inkubator in potrebuje lastne prostore
- [ ] združitev ali prevzeti start-upa s strani drugega podjetja
- [ ] start-up ustanovi lastno upravo
- [ ] start-up doseže kratkoročne cilje glede zbiranja sredstev
- [ ] Drugo:

Q22 - Ali bi lahko prosim identificirali svoj inkubator (razlog za to vprašanje je samo primerjalne narave, primerjal bi rad vaše odgovore in odgovore vašega inkubatorja). Vaši odgovori so anonimi in prav tako tudi sklep v moji nalogi.