



Pre-seed funding for technology start-ups

-The process of acquiring funding-

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Abstract

This thesis investigates the pre-seed funding process for technology start-ups. Furthermore, it aims to investigate, how the process of acquiring pre-seed funding is, and which challenges entrepreneurs are facing during this process.

The data of this thesis were collected through semi-structured interviews with tech start-ups that recently have gone through the funding process and where therefore able to contribute with perspectives of the pre-seed funding process. After analysing the data from the interviews, we investigated how entrepreneurs experience the process of acquiring early-stage funding. We found that the pre-seed funding process for tech start-ups first of all is time consuming. The applications to funding-organisations takes up valuable time for the start-up. Furthermore, entrepreneurs should consider the framing and pitching of the business when applying for funding. The entrepreneurs face several challenges during the process, including limitations on how the money can be spent. Many of the funding programme applications are very bureaucratic and demanding, and some start-ups require external assistance just to fill out these applications. The lack of network for early-stage entrepreneurs is a challenge, when applying for funding for the company. For entrepreneurs, credibility is also an important part when applying for early-stage funding. These are the areas this thesis will touch upon, as they are central aspects to processes and challenges that entrepreneurs are facing during the pre-seed funding phase.

Since this thesis comprises a small group of tech start-ups from Uppsala and Stockholm in Sweden, it is not able to say anything about the possible differences in the pre-seed funding processes in other countries. However, this study gives an initial view about the process of acquiring pre-seed funding in these cities and should stimulate for further research addressing this subject in Sweden and abroad.

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1. Introduction

Smaller tech start-ups represent a low proportion of enterprises, but there is a huge growth potential for these in the future through innovation and job creation, as they are able to give the economy a boost by providing breakthrough technology (Becksy-Nagy, 2014). Innovation will contribute to economic growth, productivity in society and national competitiveness (Kirchhoff, Newbert, Hasan & Armington, 2007).

Innovation and new technologies require a lot of feasibility testing and verification of the new technology, which means the capital requirements for this are equally high. One way to close that financial gap at very early stage is pre-seed funding. Pre-seed funding is financial support that start-ups can get when they are at very early stage of their business (Festel, 2011).

The focus in the already-existing literature is mainly on seed stages and where venture capital firms provide capital to start-ups. Venture capital firms typically provide capital to companies that have passed the early-stage technology development, meaning that the technology has been proven to some extent (Branscomb & Auerswald, 2002). However, the process of acquiring pre-seed funding remains unanswered to a certain extent. This leaves a gap in the literature written about early-stage financing for start-ups. It remains unclear which challenges an entrepreneur is going through in the process of early pre-seed funding phase.

The financing of the pre-seed stage differs from the seed stage, as this is the stage in which the initial concept and prototype testing are being developed. Prototype development requires capital, which can be difficult to acquire since the feasibility of the product remains uncertain (Lasrado & Lugmayr, 2013).

Previously, it was common to fund the early-stage business using entrepreneurs' own savings and the so-called 3 F's (friends, family & fools). Today, governments and innovation funds have started offering funding opportunities for early-stage start-ups, in the hope that they will grow viable businesses. This type of funding is typically offered in the form of public grants and innovation funds in Sweden (Tillväxtanalys, 2017). This is so the start-up can grow quicker, and access useful knowledge and support in the early-stage where development of prototype and business foundation is crucial to the start-up.

From reading the literature, reports related to the Swedish government funding environment and interviewing entrepreneurs, it is clear that the government venture capital market is increasing severely, through funds that aim to support entrepreneurs in different stages of their lifecycle, many of these in early-stage. Therefore, it has become an obvious choice for entrepreneurs to focus on applying for funding from government-run programmes. In Sweden, government funds are actively investing and providing capital for companies that wish to grow and mature, by providing capital through government funds. This is meant to close the financial gap that start-ups are facing, and to grow those companies which will contribute with taxes and prosperity in the future, as they bring innovation and new technology to market. As venture capital has declined in the period from 2007 to 2013 from SEK 6,5 billion to SEK 1,8 billion. Several government funds have started to invest in the early and growth phases to close this financial gap. Overall, these actors have SEK 38 billion available total, where SEK 30 billion are intended for investment in private equity. According to the Swedish National Audit Office (*-Riksrevisionen*), more than 40% of the government risk capital invested in companies in the expansion and maturity phase (Riksrevisionen, 2014).

The purpose of this Master's thesis is to investigate the process of acquiring pre-seed funding for tech start-ups. This thesis tries to explore if there are certain challenges that entrepreneurs are facing in the pre-seed funding process. The reason for investigating this topic is the gap that exists in the literature available about pre-seed funding. The term pre-seed is a fairly new phenomenon in the funding terminology representing new funding opportunities for entrepreneurs which did not exist before, therefore we would like to investigate deeper into this subject.

The research question of this thesis is:

How is the process of acquiring pre-seed funding?

Sub question:

What kind of challenges are entrepreneurs facing during the funding process?

To answer our research questions and make our contribution, we collected data by conducting semi-structured interviews with early-stage tech start-ups. The start-ups we have interviewed have all gone through the funding process, as this was an important factor for being able to get valuable data.

From our findings, the challenges of raising early stage capital, came down to few key factors: usage limitations, challenges of bureaucracy, credibility issues at early-stage and lack of network.

The process itself consisted of pitching and approaching funding sources, framing of the business idea and storytelling. Another aspect of the process was the time consumption that entrepreneurs expressed was a frustrating affair.

Tech start-ups are in a situation where they need to acquire a substantial sum of money to go from initial concept and prototype to a viable business, able to attract customers. This is due to the severe financial gap they typically face in pre-seed funding stage. Further insights from the study were, that the funds entrepreneurs succeeded in raising in pre-seed phase, has primarily been used for product development, confirming our theory that tech start-ups will need the capital raised for prototype development primarily, as this is the core product being developed at this stage.

We have found that most entrepreneurs have been “bootstrapping” their way through, in the initial phase of the start-up, as this is a way of remaining control over the start-up while not giving away ownership or taking in external capital too early in the process.

This thesis is organized as follows: first, we will investigate and explain which knowledge already exists around pre-seed funding for tech start-ups from the literature. Second, we present the methods that has been used to explore this study. Third we present our findings from the entrepreneurs view of the funding process and the challenges they were facing during pre-seed stage, and if there were particularly patterns entrepreneurs experienced related to these processes and challenges. The last part of this thesis includes discussion and conclusion about the theory and interviews we have conducted. In this part, we also summarize our findings and conclude the study.

2. Pre-seed funding for tech start-ups research

In this chapter, we will review the literature on early-stage funding. First, we explain what a tech start-up is based on the literature and what makes it different from other start-ups. Second, we open the term pre-seed funding, how this differ from other financial stages and how entrepreneurs use the pre-seed finance raised. Further, we will discuss the funding process in general in different stages and finally we compare them to pre-seed funding process. What makes pre-seed funding process different from other early-stage funding processes.

2.1 Tech start-ups

A tech-start-up is a start-up that focuses on new technology. The most common name used in the literature for such a company is NTBF, which is short for New Technology-Based Firm. The business's product or service primarily depends on scientific and technological knowledge. They typically consist of intangible assets, with few "hard" collateralizable assets (Allen, 1992). This means that the start-up uses technology in the business model to solve customers' problems and deliver new solutions or products to the market.

There are different ways of defining a tech start-up. Spann & Adams (1997) refer to it as technology that is transferring information between organisations and across international boundaries.

Technology that is being used in innovation is connected to start-ups because it is incorporated in new product development and commercialisation. It is known that engineers and scientist can bring value and previous experience to a tech-start-up, it is therefore also common to see these kinds of experts involved as entrepreneurs in new ventures that are focusing on technology changes.

Branscomb & Auerswald (2002) says that "technological innovation is the successful implementation (in commerce management) of a technical idea new to the institution creating it" (pp. 27-28). Further elaboration claims that "a commercial innovation is the result of the application of a technical, market, or business-model ingenuity to create new or improved product, process, or services that is successfully introduced in the market" (Branscomb & Auerswald, 2002, p. 28). This indicates that there are different definitions of a tech start-up depending on whether the author sees it from an innovation or product oriented point of view.

The way that tech start-ups differ from other types of start-ups is that the process of developing the start-up into a viable business is typically divided in five steps. The first two steps focus on research and prototype development. This is where the innovative idea is crafted and later in the process,

tested for proof of concept – if the start-up is believed to have a commercial value that can generate profit and customers. Step 3 for a tech start-up is early-stage technology development. In this step, product specifications and processes for the defined market are prepared to estimate product costs. At this point, when the business case can be validated, the start-up is often able to attract enough capital to start early production or marketing. In step 4, the product or service has now been introduced to the market. In step 5, the business is producing services or products and attracting customers. The cash flow for investors and operation is therefore seen in this phase (Branscomb & Auerswald, 2002).

The five steps of innovation processes and technology steps indicate why tech start-ups require larger investments than traditional types of start-ups, such as offline shops, consulting-based services and so forth, where physical products or an hourly service is sold. In those cases, the incoming cash-flows begins right after the business is established. In comparison, the processes that tech start-ups are going through in terms of R&D and initial market concept testing requires extensive capital. Geroski (1995) argues that new technology based companies can have problems balancing the internal and external funding requirements. This is due to the financial barriers that exist in sectors with large sunk costs in R&D and commercialisation. This means that entrepreneurs, who have a promising idea, but lack outside funding can potentially have a hard time overcoming these barriers.

When new ventures are operating in a new or non-existing market, this means that they will have to create a new market or develop the existing market. This can cause that entrepreneurs will have to create a new type of market, and essential become pioneers in this market. At the same time this causes risks in terms of the technology and the requirements (Lindström & Olofsson, 2001).

2.2 Pre-seed funding

Pre-seed funding is financial support that start-ups can acquire when they are at a very early-stage in their business process (Festel, 2011). The main purpose of pre-seed funding is to make the project and its organisation more attractive for later investments (Rasmussen & Sørheim, 2012).

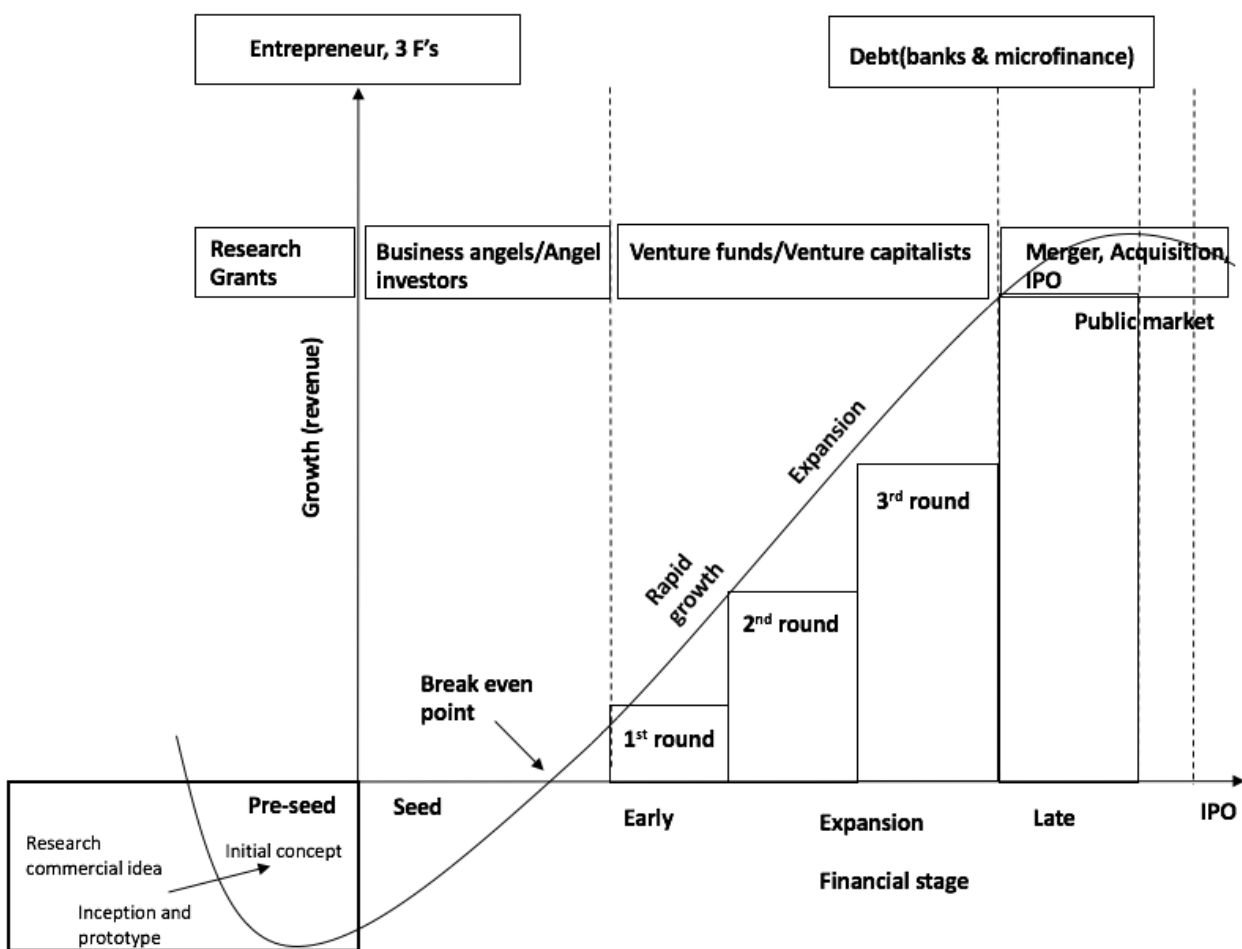
When the start-ups are in the pre-seed stage, they normally do not have much more than the initial concept ready. In this stage, it is ideal to do research about the commercial idea and to figure out if the business concept can develop into a viable business (Lasrado & Lugmayr, 2013).

When going from the initial concept to entering the market, NTBF's also face greater problems in financing. This is due to the search for the first customers and the focusing on target markets, that

NTBF's face compared to companies that already know their target customers and market (Lindström & Olofsson, 2001).

Figure 1 illustrates the pre-seed stage in the context of later financial stages and growth from the Hockey stick model. It also points out the primary funding sources for firms in each phase. As seen in the lower left, the pre-seed stage is characterized by a commercial idea and prototype development that needs early funding to develop and test the viability of a new product, in this case a technology based product or service.

Figure 1. The hockey stick model of start-up financing. Based on (Lasrado & Lugmayr, 2013).



For many ventures, it is normal to raise money at some point in the life cycle. The reasons for raising money can be cash flow challenges, necessary capital investments and product development. Depending on the need and stage of the business, these can be categorised in different steps. In Figure 1 those steps have been divided to: pre-seed stage, seed stage, early stage, expansion stage and late stage. When the start-ups are in the pre-seed stage, the financing is typically obtained from the entrepreneurs' own personal savings, which is also known as "bootstrapping". Another way of

acquiring funding in the pre-seed stage is the so called 3 F's (friends, family & fools). These can be valuable contributors in early-stage financing when the financing options are few. Further, it is possible to receive governments grants if the business idea is promising and potentially can create jobs and growth. Funding in pre-seed stage can be used for example for market research and development of a prototype. When the venture is in a seed stage, the funding can be found for example from business angels and angel investors. In this stage, it is also possible to get grants from the government. Later when the business is in a growth phase, venture capitalists and bank loans are one option to acquire funding.

Other options of raising pre-seed funds are through incubators and accelerators. Incubators are focusing on offering the start-up an environment where it can grow and establish product market-fit. This can be done by offering financial, legal, technology and consulting help during the start-ups enrolment in the incubator program (Hackett and Dilts, 2004). Accelerators on the other hand are usually used to shape the start-up in the early-stage. The purpose of this is to adapt to the market and learn as quickly as possible to succeed. In the accelerator, it is all about building the prototype and secure necessary resources as capital and employees (Cohen and Hochberg, 2014).

Cohen and Hochberg (2014) says that one major difference between accelerators and incubators is the duration of the time the start-up company is enrolled. Therefore, the intensity of an accelerator program is higher, because the start-up is in its very early-stage and the risk of early success and failure is higher. The risk of failure is higher than in an incubator. Another area where incubators and accelerators differ is the structure of the programme. It is common that start-ups enrolling in accelerators enters the program may not develop the same relationships as start-ups in the incubator due to the duration and the more competitive environment in the accelerator. The incentives for an accelerator versus an incubator are often different. Accelerators tend to be private owned and usually take equity in the start-up. For the accelerator, the start-up is typically a portfolio company, which is supposed to lead to a positive exit. Whereas incubators often are run as a co-working space where the business model is based on rent as a tenant. Therefore, the incubator often does not have the same early-success criteria for the start-up, as ownership usually is not involved.

Nowadays crowdfunding has become an option to raise pre-seed funds. This can be seen in the existence of crowdfunding and equity crowdfunding. Crowdfunding is a new alternative way of accessing capital, which means to raise capital through internet platforms, where interested investors can invest in entrepreneurs' ideas and visions. This gives entrepreneurs who had no access to capital, suddenly access to resources and pools of capital (Assenova, Best, Cagney, Ellenoff,

Karas, Moon, Neiss, Suber & Sorenson, 2016). As Assenova et al. (2016) argues, crowdfunding is a fundamental change in the financial markets going forward. For start-ups, crowdfunding can be seen as a tool to raise capital among other types of funding options. An online crowdfunding campaign, can be a good solution for start-ups to raise capital in the early-stage.

2.3 Funding process in tech start-ups

Entrepreneurs' personal savings and/or money from close family and friends is not always enough to cover all of the financing that tech start-ups require (Spann & Adams, 1997). This can place the entrepreneurs in a difficult situation, also for the fact that time spent raising capital is time away from product development and customer acquisition (Festel & De Cleyn, 2013).

Acquisition and effective use of resources are some of the major challenges for entrepreneurs to overcome (Ebben & Johnson, 2006; Hanlon & Saunders, 2007). New ventures in technology need to acquire these financial resources in order to grow and scale further. The resource-based theory, distinguishes between financial resources and human resources, where financial resources are a catalyst in the resource acquisition process (Alsos, Isaksen & Ljunggren, 2006).

For entrepreneurs, the funding process and raising capital at an early-stage is about securing the necessary funds for the start-up. This is the goal for entrepreneurs (Mitteness, Baucus & Sudek, 2012). The first stages, research and prototype development are the hardest financial gap to overcome, as the uncertainty is greatest in these stages and it is most difficult to validate product success. The financial gap relates to the project having crossed the basic research, but not yet having come far enough to establish a business plan (Branscomb & Auerswald, 2002).

The value of new ventures and ambiguities about the product and service is common in entrepreneurship and one of the greatest challenges to overcome. In tech start-ups and in the pre-seed stage, this is a problem exacerbated when market uncertainties are high, because new technology are creating new product categories, some of the challenges relates to quantifying risk involved for the investor (Branscomb & Auerswald, 2002).

Lindström & Olofsson (2001) says that due to the technical character of the NTBF's, they will typically face problems or challenges in conceptualisation of the business – to make it clear and understandable, selecting the market segment in which to operate, solve the technical issues that the venture will face, raising necessary capital, and recruiting the key personnel. It is known that these

new technology companies in comparison to less technology heavy companies, have more difficulties in raising equity based finance (Murray, 1999; Mason & Harrison, 2000).

Cusumano (2013) stated that success criteria for investors when assessing a tech start-up can be: 1. a strong management team, 2. an attractive market, 3. a compelling new product or service, 4. strong evidence of customer interest, 5. overcoming the “credibility gap” – the fear that the start-up will fail and therefore the customers will choose an established vendor, 6. demonstrating early growth and profit potential, 7. flexibility in strategy and technology and 8. potential for a large investor payoff. This is one view the success criteria for a start-up, however depending on the investors horizons and preferences, there are many different success criteria.

The literature tells us that scalability and growth potential are important factors for venture capitalists when assessing new ventures, and venture capital firms tend to focus on young companies in high-tech, which typically have the highest growth potential. Industries such as clean tech, IT, life science and bio-technology are therefore areas that venture capitalists tend to focus on, rather than imitating businesses. Innovation is therefore a central factor for entrepreneurs’ success in terms of attracting venture capital firms’ attention (Hellmann & Puri, 2000).

An option for entrepreneurs to close the financial gap in early-stage is to use founding angels. Founding angels are angel investors who provide capital at the founding of the business. Founding angels can bridge the gap between early-stage development and products that are ready for the market. What distinguishes founding angels compared to other types of investors, is that they tend to be active in high-tech sectors and provide capital earlier than investors who come on board at a later stage (Festel, 2011). Typically, we can determine that the founding angel is involved in the pre-seed stage, where research and intellectual property rights (IP rights) are being processed. Business angels are involved in seed and later stage and VC’s will come in with more money in the more mature phase (Festel & De Cleyn, 2013).

Stinchcombe (1965) says that important key factors for entrepreneurs, when it comes to raising capital, is networks and the utilization of these. When entrepreneurs start their new venture they often have a small network and lack of track-record to show. Moreover, the type of technology based venture, entrepreneurs represent can make potential investors to hesitate with providing capital due to uncertainties. This can lead to difficulties in terms of identifying and connecting to the providers of financial resource.

This leads to two forms of networks that entrepreneurs should utilise in their search for external capital: 1. network contacts that entrepreneurs can use to provide useful information and resources to the venture and 2. network contacts that can establish the contact or acquire financial resources for the venture. This indicates that entrepreneurs should leverage their existing networks in order to access capital, since the direct and indirect ties they create to venture capital providers and related contacts will improve their chances of getting funded. Network externalities and referrals from contacts that are established in business, are therefore important for new ventures and entrepreneurs. In contrast to established and experienced entrepreneurs with rich and anchored networks, legitimacy, skills and knowledge, first-time entrepreneurs face challenges in terms of establishing and utilising a network. First-time entrepreneurs can build their network by participating in trade-shows, business plan competitions and business network groups amongst other activities that can leverage their network (Heuven & Groen, 2012).

The legitimacy challenge that entrepreneurs face in the beginning of the venture can be overcome by activating external resources to the venture, these can provide credibility to the publicity and customers. Legitimacy means that entrepreneurs are accepted as trustworthy for the surroundings they are in. The needs of these actors differ from the entrepreneurs' earlier industry experience and the characteristics of the venture. This means that for example university spin-offs likely would require more mentoring than a spin-off from an established company (Lindström & Olofsson, 2001).

To sum up from the theory we can see that tech start-ups differ from other types of start-ups in the way that tech start-ups normally go through five steps in the innovation process. Further, tech start-ups are dependent on attracting early-stage investors to be successful in all the steps that is needed to scale the company from the initial concept to entering the market. Pre-seed funding is needed in the first two innovation steps, which is the research and prototype development steps. Pre-seed funding is beneficial for a start-up, since new technology needs verification which is costly at early stage. Further, the objective of pre-seed funding is to make the start-up more attractive for later investment rounds. When tech start-ups are raising pre-seed funds, they usually face challenges in areas as time consumption for raising capital, presenting the business in an understandable way and utilisation of network. These are the main challenges we have identified about the pre-seed funding process.

3. Methods

In this chapter, we go through the methodology that has been used in this thesis. This thesis uses qualitative research methodology. Qualitative research is a method that is used in different sciences in addition to quantitative research. Our research question is: *How is the process of getting pre-seed funding?* and our sub question is: *What kind of challenges are entrepreneurs facing during the funding process?* Qualitative research can explore processes in-depth through the collection and analysis of rich data. That is because qualitative research is investigating different perspectives on the same questions. Further the researchers' reflection of these are part of the knowledge production from the thesis. Qualitative research tries to understand the studied phenomenon when the quantitative is more explaining research (Flick, 2002). Therefore, qualitative research is the most appropriate to get answer for the research questions we have set for our study, since we want entrepreneurial perspectives from different participants. This can be done by collecting impressions, thoughts etc. which becomes the in-depth insights used for our thesis (Saunders, Lewis & Thornhill, 2007; Flick, 2002).

There are different methods to research phenomenon's, the most common ones are inductive and deductive approaches. The inductive approach is the most common to use in qualitative research. When using an inductive approach the research sample is quite narrowed and from that basis researches try to make contribution and create new theories. The deductive approach in turn means that from the facts that are already known can create a hypothesis, the hypothesis is based on already known information (Saunders, Lewis & Thornhill, 2007). In this thesis we have used an inductive approach to make our contribution. In that way, we are explorative and open in our research design. That means that we are forming a theory by collecting data from each entrepreneurs' perspective of pre-seed funding. This is done by interviewing entrepreneurs one by one. From hereon we are making a conclusion from our interviews. In comparison to deductive research where the result is either true or false, inductive research will either be strong or weak.

3.1 Research setting and sample selection

The research setting in this thesis comprises newly funded tech start-ups from Uppsala and Stockholm in Sweden. Our main focus was to investigate Uppsala-based companies since we knew that Uppsala consists of many government-based organisations offering pre-seed funds, but we also interviewed a few Stockholm-based companies to get a bit broader picture about the funding

process. We wanted to investigate tech start-ups that have gone through the funding process recently and were therefore able to contribute with perspectives of the funding process and challenges since this is our research topic. We selected tech start-ups that needed external funding in the pre-seed stage and had successfully gone through the funding process. In Uppsala and Stockholm, there are several organisations helping start-ups and entrepreneurs to succeed. We approached many of these organisations, and were able to find the companies we needed for a successful number of interviews. In the following section, we describe how we approached these organisations in order to find respondents for our data collection.

Base10 is a newly founded co-working space for tech start-ups and it is located in central Uppsala. Both of the authors of this thesis have dealt with Base10 and therefore it was natural to approach Base10 and try to find tech start-ups that we could interview. We sent an email to the co-founder and CEO of Base10 and asked him if there are any start-ups that have gone through the early-stage funding process recently and if some of them might be interested in doing an interview with us. He forwarded our message to a few companies from Base10 that has gone through the funding process. Then the entrepreneurs who were willing to do an interview with us approached us by email. From Base 10, two companies contacted us and we interviewed them at their office.

Vinnova is a Swedish innovation agency that helps different kind of organisations, for example by providing funding for start-ups. We knew that one of the Vinnova's funding round had just ended and we therefore approached Vinnova by email and asked if it was possible to receive the contact information of newly funded start-ups/entrepreneurs. We got a list of entrepreneurs with contacts from Vinnova and then we approached the entrepreneurs and asked if they were willing to share their experiences about the funding process. This lead to three interviews, which took place in their office.

Drivhuset is a government-based organisation that helps future entrepreneurs to develop and grow their businesses. We had visited Drivhuset in the past and we knew that there are a few start-ups that uses Drivhuset's premises as an office-space. We contacted the CEO of Drivhuset in order to ask if there are some start-ups that have recently gone through the early-stage funding process and if some of them might be interested in doing an interview with us. Drivhuset provided us with the contact information for a tech start-up, which we then approached by email and interviewed later.

One of the authors of this thesis has a tech start-up, which is at a very early-stage. The company has been through the pre-seed funding process. In order to avoid contradictions, we interviewed the

author's business partner, as he has no interest in this thesis, and is therefore able to give his true opinion about the funding process.

We also contacted STING – a Stockholm based incubator and accelerator. We asked if they had start-ups in their portfolio that might be willing to give an interview about their funding process. From approaching 50 STING alumni companies via email, in total four start-ups' agreed to share their experience in an interview.

From a mutual contact, we approached two other tech start-ups in Uppsala that had also been through the pre-seed funding stage, unfortunately, they did not have time to do an interview.

Two other organisations we contacted were Industrifonden – a venture capital fund based in Stockholm, and ALMI – Sweden's main organisation that helps entrepreneurs with financing and advisory support. We asked these organisations if they had suitable start-ups in their portfolio that have gone through the funding process, unfortunately that did not lead to any interviews.

All of the interviewees were either a founder or co-founder in their company, therefore they had explicit knowledge about the companies' finances and operations.

3.2 Data collection

To answer our research questions, we have used *primary data* as the main source for collecting data. This means that the data collection for this thesis is produced solely for this thesis through interviews, and the transcription and analysis of these. To make the data collected *representative*, it has been a requirement that the interviewees have been through the funding process. Satisfactory access to primary data has been an important factor for this thesis outcome (Yin, 2011). That means that we depend on interviews with entrepreneurs who fulfil the pre-seed funding criteria.

The data of this thesis were collected by semi-structured interviews. The interview is one of the most common data collection methods in qualitative research. The purpose of the interview is to find out what someone has in mind. This allows the researcher to understand the interviewees' own experiences and the researcher tries to make the interviewees use their own words during the interview. Interviews are considered to be a unique data collection method, because the researcher is in direct contact with the interviewee. Flexibility is one of the major benefits, when doing an interview. The interviewer can repeat the question, correct if there are any possible misunderstandings, clarify wording and just generally have a conversation with the interviewee. It is also important to keep in mind that the interviewer can ask follow-up questions concerning

information that later was found as important. Semi-structured interviews are also flexible in terms of the interviewer being able to ask questions in the order that they want. The major point of the interview is to get as much knowledge about the subject as possible (Yin, 2011).

Semi-structured interview is an interview model, that is the intermediate of structured and unstructured interview. In a semi-structured interview, the interviewer follows an interview guide, with set questions. Many questions though are open, and this allows the interviewees to answer in their own words and to expand and elaborate freely. The questions are the same for each interview, but the interview guide does not have ready-made answer options like in a structured interview (Flick, 2002). In the interviews, we used an interview guide, which guided the interview process. Our goal was for the individual interviewees to share their own experiences with us freely. In the interviews, we honoured the entrepreneurs' ways of building their answers to get the individual respondent's own views on the subject.

The interviews were recorded via smartphone (iPhone 5s) using the voice memos utility. After the interview, we listened to the recorded audio and transcribed the speech. The interviews took between 30 to 60 minutes, depending on the interviewees' openness. Interviews were held at the place that interviewees' chose, normally in their own offices. The interviewees were also given the chance to choose the date and time for the interview.

In total, our sample size was 11 interviews. After 11 interviews, we realized that from possible later interviews we would get few if any new insights. Flick (2002) refers to this as saturation, which means that no new data emerges from conducting more interviews. We decided after 11 interviews, that it was sufficient to make conclusions about the funding process. Already after 7 Uppsala-based tech start-ups interviews, we started to see patterns about the process. We wanted to confirm these patterns and we did four more interviews with Stockholm-based companies since the funding opportunities are quite similar in Stockholm.

3.3 Data analysis

To analyse the data from the interviews we conducted, we decided to code the transcriptions. We coded all of the transcribed interviews in two different rounds, first by "asking the data" what processes are involved and second, what challenges are involved. By doing so, we could break down our interviewees' statements about pre-seed funding processes and challenges in several categories showing our findings (Gioia, Corley & Hamilton, 2012).

To fill out our first-order codes, we used the phrases collected from the interviewees. We tried to find terms and phrases that occurred several times. After looking at the first-order codes, we categorised them based on the similarities and differences we found. Through that process we found different themes. Based on our first-order codes, we found seven categories, three in the process aspect and four in the challenges. We then labelled these categories to capture their meaning. We did that by questioning the respondents' answers.

In Figure 2 sample phrases which are examples of the first order codes and different themes are presented, explaining our data structure.

Figure 2. Data structure

1 st order codes	2 nd order themes	Aggregate dimensions
<ul style="list-style-type: none"> • <i>“We got a lot of feedback when we pitched related to our business model”</i> • <i>“We received instructions how to improve”</i> • <i>“We had to pitch it over and over again”</i> 	<p>Pitching</p>	
<ul style="list-style-type: none"> • <i>“Vinnova is more about man hours”</i> • <i>“They are not going to ring your door bell and bring you money”</i> • <i>“...requires you have to write a whole lot of pages of business plans”</i> 	<p>Time consumption</p>	<p>Process</p>
<ul style="list-style-type: none"> • <i>“Completely different depending on the investor”</i> • <i>“Different depending on what the investor could bring to the table”</i> • <i>“I guess build an incredible story”</i> • <i>“We’ve sort of framed the project”</i> 	<p>Framing</p>	

<ul style="list-style-type: none"> • <i>“You can’t use the money for salaries, so what are you going to live of?”</i> • <i>“You have your electrical bills, that you can’t use your soft-money for”</i> 	Limitations	Challenges
<ul style="list-style-type: none"> • <i>“There are many different calls there, and some of them you can apply for many times a year, but it is super bureaucratic”</i> • <i>“Applications are hard, you have to go through the lawyers”</i> 	Bureaucracy	
<ul style="list-style-type: none"> • <i>“We didn’t have the credibility to prove the concept”</i> • <i>“The credibility means everything when applying for funding”</i> 	Credibility	
<ul style="list-style-type: none"> • <i>“We don’t just want funding. We want knowhow with it”</i> • <i>It’s a serious challenge to find the right persons</i> 	Network	

3.4 Research quality

Every study aims to avoid mistakes, but still the reliability and validity of the research may fluctuate. Therefore, the reliability and validity of the research are evaluated in almost every research study. The quality of the study has been normally described with reliability and the competence of the study with validity. Reliability in a study means that the results or the findings are not random and that the results are reproducible. This can be confirmed, for example by investigating the same person at different times, and every time the results are the same. The results can then be stated reliable (Saunders, Lewis & Thornhill, 2007). In our case, and through our findings, we have been asking ourselves if we would have received the same results on other occasions and if the study was conducted in another country or region. Further to higher the reliability, we have aimed at maximum transparency through the data collected from the interviews.

We are aware that threats to reliability may emerge when we conducted the research for the thesis. These threats can be seen as subject or participant errors. Meaning that time plays a role when conducting interviews, e.g. another outcome Friday afternoon than Monday morning, therefore we have tried to gather data through interviews at a “neutral time” when minimum participant error can be found. Further observer errors can occur when conducting interviews by several group members. We have minimized this thread by having a high degree of structure in the interview schedule and questions. We are aware that observer bias is a thread to reliability as well, this has been minimized by discussing the data and looking at it from different views (Saunders, Lewis & Thornhill, 2007).

Validity, on the other hand means that the right things are investigated. Meaning that the study investigated exactly what was supposed to investigate. There are many ways for how to improve the quality of the qualitative research. This is important to keep in mind before starting the research, in order to avoid the pitfalls that threaten the validity of our thesis. It is important that all of the choices and solutions that have been made are motivated during the study. The threats to validity can emerge from generalisability, if our findings can be applicable to other research settings. In our case, we can question if our research of pre-seed funding for tech start-ups can be used in other domestic or global studies. If a similar study was conducted in another country it would be possible, but likely show other results, depending on the funding culture in the specific country. Other possible threats can be related to data collection, that our data collected can bring valid data about the investigated topic. In order to minimise this threat, one of the requirements to our interviewees has been that they had all been through the pre-seed funding process. Other things, such as data interpretation, can threaten the validity. When dealing with huge amounts of qualitative data, it can be a challenge to interpret and break down the data collected so that only the most important aspects are being analysed and included in the findings. In this case, we have been looking for patterns that emerged from the data, and this has been brought to the findings (Saunders, Lewis & Thornhill, 2007).

In qualitative research, it is also important to describe all the persons, places and events. For example, when doing an interview, it is important to mention the time used in interview, distractions or misinterpretations in the interview. In our case, when we have collected data for the thesis, we have assessed our data sources by questioning the research setting and the interviewee. The validity has been strengthened because we have been concise about our research topic, and only the pre-seed topic has been investigated. Moreover, we chose the methodology and research design carefully, which helped us to explore the unknown (Saunders, Lewis & Thornhill, 2007).

To improve the quality of this thesis, we have tried to describe our approach and what we have been doing during the research study as much as possible for the reader, as well as how we end up with our results.

4. Findings

In this chapter, we present our findings about entrepreneurial perspectives of pre-seed funding process from the interviews. First, we present the general background of the findings, including the sources from where our interviewees got the early-stage funding and in what stage their businesses were when they got it. Second, we present the findings about the funding process. Third, we present the challenges that entrepreneurs are facing during the funding process.

4.1 Sample description

The companies we interviewed all had in common that they were start-ups' which services involved technology development. They differed in sub-categories, representing different types of technology areas, as shown in Figure 4. Several of the companies were representing software, industrial and robot technology, where med-tech, drone technology and clean-tech were outstanding.

Figure 4. Types of industries and technology area for start-ups.

Types of tech start-ups					
Software	Industrial Technology	Med-tech	Drone technology	Clean-tech	Robot technology

Figure 5 presents the entrepreneurs we have interviewed together with their background. As the figure shows, there is a mix of how experienced the founders are in the start-up field. Four interviewed entrepreneurs were first-time entrepreneurs, where the most experienced were involved in four start-ups. Almost half of the companies had a ready prototype developed when they applied for funding. The remaining entrepreneurs only had the initial concept ready to present. There was an almost equal mix of educational backgrounds from either science or commercial studies. As expected, all the companies have received government-based pre-seed funds, and almost every founder has invested some of their own money in the company. Every entrepreneur we interviewed were planning on raising more capital in the future.

Figure 5. Background of entrepreneurs

Founders/ Start-up	A	B	C	D	E	F	G	H	I	J	K
Number of start-ups involved in	3	2	1	1	4	2	1	2	3	3	1
Had developed prototype before funding	X	X			X			X		X	
Background	S	C	S	S	S	C	S	C	C	C	C
Investor type	BA,F,G ,C	BA,F, G	BA,F, G	G	BA,F ,G	VC,F ,G	BA, F,G	VC,F ,G	VC,F ,G	F,G	F,G
Planning an IPO in the next future		X				X					
Received funds outside of Sweden						X					
Planning to raise more capital	X	X	X	X	X	X	X	X	X	X	X
Operational investors	X	X			X	X			X		

Explanation:

Background: S: Science, C: Commercial

Investor type: BA: Business angel, F: Founder, G: Government, C: Company, VC: Venture capital

4.2 Pre-seed funding background

As we pointed out earlier in this study, entrepreneur's own savings or money from 3 F's or banks does not always cover all of the funds that tech start-ups require (Spann & Adams, 1997). Many of our interviewees have done this kind of bootstrapping, but all of them have required external capital in addition to their own savings.

In Uppsala, there are several government-based organisations that provide early-stage capital for tech start-ups. Examples of these are Almi, Vinnova and Uppsala University Innovation, besides local and regional funding opportunities that exists. Entrepreneurs have the opportunity to reach outside borders and apply for funding programmes such as Horizon 2020, which is a funding programme for research and innovation run by the European Union. What we found from the entrepreneurs we interviewed is that Horizon 2020 is the most common to apply for research and

innovation loans. In general, there are differences in the funding structure of the loans and grants available in Sweden. They differ in terms of some being innovation loans, with fixed or variable interest rates, and some pure grants, in the start-up environment grants are also referred to as soft-money and non-dilutive cash. Almi provides different kinds of favourable loans and smaller grants, where Vinnova typically provides larger grants for innovative start-ups. We found that Almi and Vinnova are the most accessible and the first organisations where tech start-ups apply for pre-seed funding.

There are several benefits when it comes to public pre-seed funding. First, you typically do not have to give away equity when receiving grant based funds and you save costs when the company is in an uncertain phase. Therefore, the interviewed entrepreneurs agreed that these funding sources were the obvious ones to go to in the first place.

There can be different mixes of the founders' own money and government support in the start-up stage. Every start-up has its own way of structuring the funds depending on the investments necessary in the beginning. From our findings one entrepreneur shared the company's financial structure. The money was raised in two different rounds and this is how the model company has used funding sources in the pre-seed stage:

Figure 3. Funding sources

Organisation	Amount
Owners/founders	SEK 3,400,000
Almi loan	SEK 500,000
Almi/Vinnova innovation check	SEK 100,000

In this case, the founders and company owners are the main funding source for the start-up. Furthermore, due to the technical necessities and prototype development, a rather large amount of (SEK 4,000,000) has been raised.

As we explained in the theory part, typically raised pre-seed funds goes to product development. The money is used for product development and verification, and this is part of the first two steps of the innovation process and technology stages for tech start-ups. This is also confirmed in our findings, which show that the entrepreneurs we interviewed, had used most of the pre-seed funding for product development and prototype. Through our findings, we found that the main part of the start-ups has used most funds for product development, and only a smaller amount of money has

been used on promotion, office equipment and other non-product related spending. However, there are differences in how far the company has come in terms of product development when they received the pre-seed funding. Some of the companies had prototype already, and some entrepreneurs only had the initial concept or idea.

We found that the money raised in the pre-seed stage is typically used to accelerate growth, which can be done by testing prototypes and developing the core-technology that is essentially supposed to turn out to a product or service, either in the form of a minimum viable product, or a full commercial product ready for launch and taking in first customers. The entrepreneurs we interviewed typically have a back-end (where the software is coded and organized) that needs to be fully developed, related to software and service products or a clinical or hi-tech product that can be related to Medtech, pharma, robotics or other industries that require a technical product.

Previously in the theory part we explained that five steps of innovation processes and technology stages, indicates why tech start-ups' require more capital than traditional companies. This has been confirmed in our findings, as entrepreneurs pointed this out. The start-ups we have interviewed, explained that tech start-ups require different verification steps. This is one of the main areas where tech start-ups vary from regular start-ups. New technology requires verification, which makes the requirements to starting capital even bigger (Branscomb & Auerswald, 2002).

For instance, entrepreneurs referred to technological verification as:

“For instance, if you have a consultant’s firm, then you work and you get money back from your work. Here your work is to create something that in seven years or so meets the market and you can get your money then, so the financing of the whole operation is totally different.”

“Especially in hi-tech, with the verification steps, where you have new technologies, no one else has. The verification stages take much longer time than other areas.”

As entrepreneurs agree, tech start-ups in general require more capital investments. Reaching possible customers and the scale of the start-up, is factors that matters in the funding perspective. Companies referred to as unicorn companies, valued over 1BN dollars, have typically required several capital investments, at an early-stage, where start-ups reaching SME size will require smaller investment rounds to reach profitability.

“Start-ups’ who rely on strong network effects (airbnb, uber, facebook eg.) can in theory become a “winner takes it all” and they represent long term trajectories, meaning they require a lot of funding while B2B Saas startups e.g. may not require as much.”

All of the start-ups we interviewed were planning to raise more capital at a later stage in order to grow the company even further. The pre-seed stage can be seen as a preparation for coming financing rounds. A (first round), B (second round) or C (third round) rounds where larger funds or institutional investors come on board. In this stage, the tech start-up has shown proof of concept, initial customer base, and product market fit, and it is natural to raise more money in the new financing rounds. It is at this point where the start-up will typically also have a higher valuation.

“Now we are looking to do a large investment round, we are trying to setup big investment package. We will have a bank loan also, but that’s the plan. We have both one that are in the whole European market, and now we’re finalising one which is worldwide, with 9,000 employees.”

“Now we’re building a prototype, in one month we will have a finished robot with all the technologies and so. When this is done, we will put it in a lab, so we can show the performance, and investors will come on board.”

“At some point, we want to grow faster, initial funding for this is not going to cut it. We’re looking at strategic partners in local companies, we want to invite other investors, that have other connections.”

4.1 The funding process

Three themes emerged from our data analysis as important aspects in the pre-seed funding process of tech start-ups: Pitching, framing and time consumption. Our main findings show that one of the struggles of raising capital for start-ups is that the pitching and framing of the business is a process of repeating and refining the message and vision, that the start-up wants to present. The process is also time consuming, and consists of spending many “man-hours” in applying for funding in different government or private organisations that provide capital. In the following sections, we are presenting the main findings about the process.

4.1.1 Pitching

Pitching was a recurring theme from our findings. Pitching refers to the act of presenting for the purpose of raising funding. In this context pitching means presenting your business idea for external parties for example investors. Our findings confirmed that entrepreneurs made a sequence of pitching, meaning that they change or improve their pitch every time they present for a new investor. This means that the possibility of success improves with every pitch made. Because the funding process is long due to several presentations and pitches that must be made before receiving funding, entrepreneurs will have to improve the pitch many times, and in the end, it usually

becomes naturally presented. Further, the entrepreneur will typically be able to deliver a more concise and clear message for the audience presented for.

A few entrepreneurs expressed that pitching was recurring and improvements were made the more times pitched:

“We got a lot of feedback when we pitched related to our business model, we received instructions on how to improve. It was constructive feedback which we could use for the future pitches. “

“More concrete pitch as time went by, got feedback along the way on what the listeners reacted to and adapted the pitch accordingly. Enhanced the parts they found most interesting.”

Other entrepreneurs expressed that a sequence of pitches was made during the funding process and this was a recurring phenomenon:

“We had to pitch it over and over again to different business advisors. Every meeting there was a different person.”

4.1.2 Framing

Framing was one of the themes that emerged from our interviews. In this case framing means that entrepreneurs customize their business presentation suitable for the audience and situation. Some entrepreneurs argued that the framing of the business plan, the presentation and storytelling for different parties and organisations played an important role during the funding process. When entrepreneurs raise capital, the story and the effort behind the business is something investors take into consideration which is also something that is confirmed through our findings. Framing of the presentation could also vary depending on the audience presented to, as these has different competences and contributions to the start-up. Entrepreneurs made different pitches compared to which organization they were approaching. This is because the different organisations have different requirements to what they are looking for in the company, therefore entrepreneurs need to adapt their pitch to what individual funds are looking for. We also found that technological trends in the society and tech environment affected the framing.

One entrepreneur explained that storytelling was an important factor for successful funding:

“I’ve also been presenting this to different people in Pharma, investors and so on. I think it is quite provocative, but I think the reason why it has worked, is that we have sort of framed the project like these are the benefits for the patients, these are the benefits for society, this is how we are going to do it. And we have also been interviewing so many nurses, and been to hospitals -

like really done the footwork, and taking in very much input, so I guess build an incredible story.”

The framing and roadmap could also look different depending on which resources investors bring to the start-up:

“Same idea and vision, but the roadmap could look a bit different depending on what the investor could bring to the table”

“We made them more adapted to each different type of investor, shorter, longer, more focus on different topics based on investors’ interest and strategic focus.”

As another entrepreneur expressed the framing of the business presentation can change depending on the audience presented to and therefore adaption to the audience is necessary:

“Completely different depending on the investor. When you go to a pitch event, you are invited as 1 out of 10 presenting to a board of investors. That is different than sitting down and talk for an hour with an investor. The message to use is different every time.”

Several of the tech-entrepreneurs expressed that the technological trends in society are important factors for how they were framing their start-up and its future potential. Tech-entrepreneurs typically attempts to relate their projects to larger ongoing trends as investors are typically more willing to invest in a start-up if it is part of a bigger “disruption” or digital transformation in the society. Therefore, the trends can affect funding process, meaning that if a tech start-up is in the right place at the right time, funding is easier to overcome, as several entrepreneurs argues:

“We started as Medtech, very hard to raise capital. We could never do an IPO based on that, now we’re more an industrial company. But it depends on the trends, now it’s about digital transformation, before it was ecommerce.”

“...And if you are in our industry as AI, which is really hyped, everyday there are 10 articles on the biggest webpages, and new companies being bought by bigger companies every day, so of course they are going to attract more investors.”

4.1.3 Time consumption

As we pointed out earlier, the successful early-stage funding is a time-consuming process. Almost every start-up we interviewed said that it took time to go through the funding process. This was the case especially in government-based organisations. As we explained in the literature part, the time spent raising capital is time away from product development and customer acquisition. Much of the

time that should be spent on building a prototype is instead invested in raising capital. Several of the entrepreneurs emphasised this point, expressing their frustration how they typically need funding right away, but the process required much more than they accounted for:

“They are not going to ring your door bell and bring you money. It is a lot of work, at least with Vinnova stuff.”

“Vinnova is more about man hour. Everyone with a college degree, can make the application. But it takes time, you have to consider what they are asking for.”

The frustrations that entrepreneurs express about the funding process is that they know they should be developing the product but a lot of time is instead spent on raising capital:

“Of course, I should have spent all my time for product development, but instead I used all my time for raising money, that was really frustrating.”

“The process of getting money from them, requires you have to write a whole lot of pages of business plans. The problem with this is that each of the companies giving you money in a kind of way, they want to know certain stuff, and they have their own templates for doing it.”

4.2 Challenges

We found that there are four main challenges that entrepreneurs face during the process of raising pre-seed funding for their start-up. These are: limitations to where and how in the business the funding can be used, bureaucracy during the application and funding process and the credibility issues regarding the founders' and the start-ups' background, viability and ability to succeed and utilisation of network. In the following sections, we present the main findings regarding these challenges.

4.2.1 Limitations

For several entrepreneurs, soft-money comes with limitations, this is for example limitations in how the money can be spent. This being the case, the entrepreneur must consider what they are going to live for during the start-up phase? Soft-money means public financial support that comes with no ownership requirements in terms of equity or stock options. For many funding programmes, salary is usually not part of how this money can be spent. Often there are strict limitations, which puts the entrepreneur in a dilemma since they will be dependent on their savings or a second source of income during the development and launch of their start-up. The central paradox here is that development of a tech start-up is more than just developing the technology or prototype, it is

building a business, yet the funding available does not provide for this as it comes with the described limitations on usage.

Several entrepreneurs expressed that usage limitations of the soft-money are a serious challenge they are facing during the funding process since they need money for all expenses running the business and not just product development:

“But still when it comes to funding for start-ups, there are so many problems, relating to this soft-money thing. First of all, from Vinnova for example, and in many cases at least, you can’t use the money for salaries. So, what are you going to live of? That’s a big problem.”

“When it comes to soft-money, you have to find some sort of capital from outside that you can put in your company. That’s one of the pitfalls in soft-money.”

“The soft-money, it equates to +- zero in the end. But you have your electrical bills, that you can’t use your soft-money for, which drains the capital down to zero, then you have to restructure the company.”

4.2.2 Bureaucracy

What entrepreneurs generally agree on, is that several funding applications are very bureaucratic and they may need to even hire external parties to help with those applications. We found that the Horizon 2020 (an EU programme) applications seem to be the most bureaucratic, and the process of getting this funding appears to be the hardest. This is in comparison to Almi and Vinnova which are local funding providers, specialised in Swedish start-ups. For start-ups, the bureaucracy for funding programmes means that it usually is complicated, several actors are involved and it can be intransparent during the application process. As several start-ups point out:

“Now we’re applying for larger EU grants, called Horizon2020. There are many different calls there, and some of them you can apply for many times a year, but it is super bureaucratic. We actually get help from some consultants, that actually helps us just frame this”

“Also, they know about the 2020 European union money. Horizon 2020 it is called. That’s the EU unions innovation fund money. Those applications are hard, you have to go through the lawyers.”

4.2.3 Credibility

In the beginning of the start-up, one of the biggest challenges is to demonstrate the credibility of your company, your founders and the product. It is important for customers but even more

important for investors that your start-up is well established and reliable. Therefore, it is important for founders to create trust when they do not have a long track record to show.

“For the first time, we didn’t have the credibility to prove the concept. They weren’t convinced about the feasibility of the product.”

“Credibility means everything when applying funding. The product, the team, everything.”

Another problem that can occur in the process of applying for soft-money is that entrepreneurs do not yet have customers, and are therefore unable to show any traction. This is a dilemma for tech start-ups during the pre-seed phase. Since the start-up is exploring a new and usually untested business field, it can be quite a dilemma to show progress in terms of customers and reaching growth, when the start-up is dependent on a capital investment to even reach the first customers. The pitching process therefore automatically becomes difficult when your initial customer base depends on a prototype and vice versa.

“Then you go to Vinnova, and they say, who is your customers? Because you have to have customers for this hi-tech product, before you can get any money for this verification. And when we go to the customers they say, where is the prototype?”

4.2.4 Network

We found that the lack of network for entrepreneurs is a serious challenge. In the beginning of starting a new business the network is one of the key factors and the entrepreneurs has expressed that they need the right people to open the doors, for example when the start-up need to apply for funding. This was especially the case for the first-time entrepreneurs we interviewed:

“For us, it is a serious challenge to find the right persons around the company”

“We have also identified the competences, we don’t just want funding. We want knowhow with it.”

Several of the start-ups’ we interviewed has indicated the necessity of an investor who could contribute directly with their specific industry knowledge. This has been one of the main criteria for choosing this investment source. In this case, the entrepreneur becomes in charge of the funding process, as the entrepreneur picks the investor based on this, and avoid taking “stupid-money”. Stupid-money means money that comes without human resources or further contributions.

We found that the entrepreneurs we interviewed which had the most technical product or service developed, tried to pick the most beneficial funders which provided more than just financial support. This was expressed by several entrepreneurs:

“Then you get some angels in there, with a lot of connections and a big network, they have their lawyers, they have their bank connections, that’s good. They are not ligatures, at least not the ones that I’ve met. They are actually contributing, it’s not stupid money, that’s the most important thing.”

“From the beginning, to find some angels that are really contributing, either on the administrative side, with more financing, and contributes more than just with money, that’s really important, someone to talk to, maybe even organisation wise, maybe not start-up’s but they’ve been higher up in the hierarchy in big organisations. They can help with everything from marketing to HR.”

For the entrepreneurs interviewed, there are differences to the involvement from investors in the start-up. Some will be on a strategic level. A person you can call for guidance and with whom you can discuss core aspects of the business. Others will be operational, meaning that they will contribute with work or other directly beneficial tasks or assets to the start-up. It makes a difference if this even has been criteria or a factor that the start-up has had when they initially raised capital. However, most of the interviewees pointed out that the investors’ human resources have been an important factor to utilise, when it comes to the investors’ existing network, as these investors can open doors to established companies, important individual and powerful organisations.

“If you can get one from the industry and maybe tease them with a little bit of stakes in the company, that’s not a bad idea.”

“I think for pharma you need to have knowledge about licensing, and further financing and those things. So, we did a little checklist for that. We look at which competences we have, and which we need in the coming years, and after that. So, we don’t take only know how and we don’t take only funding. “

5. Discussion

In this thesis, we have investigated the pre-seed funding process for tech start-ups. Moreover, this thesis aims to investigate, how is the process of acquiring pre-seed funding and are there some challenges that entrepreneurs are facing during the process. The first part of this thesis is the literature review, where we have pointed out what is known about the pre-seed funding and the funding processes in general. The existing literature focuses more on the seed and later stages, therefore the research about pre-seed funding is limited as is the research of funding process. After the literature review, we have presented our methods for collecting the data. The data were collected with semi-structured interviews with tech start-ups that have been through the pre-seed funding process. Right after the method section, we have presented our findings from the interviews.

Our findings compared to the literature part, show that it is very likely that the money raised in the pre-seed stage goes to product development. As we have found in the literature and interviews, there are different verification steps for start-ups in which early-stage funding is used for development and verification. These are the innovation process and technology stages for tech start-ups.

As we explained in the literature part, and the findings from interviews, network plays a major role when it is time to acquire early stage funding. Several of the entrepreneurs have used their network to acquiring funding. It also seems to be important for entrepreneurs to establish a solid network since they need to attract people with specific knowledge to the company.

In the literature part, we explained that market uncertainties are high for investors, when new technology is introduced, which increases the risks for investors. Therefore, the credibility of the start-up one of the important factors, that entrepreneurs need to prove when applying for funding.

From the existing literature, there was not much written about the pre-seed funding process and challenges, therefore we wanted to explore this particular subject. We found that the processes and challenges are not an area that is investigated for itself. Our findings show that in the process there are different themes as pitching, framing and time consumption that entrepreneurs should be aware of when applying for pre-seed funding. Also, there are challenges that entrepreneurs are facing as e.g. limitations and bureaucracy which are some of the main challenges during the pre-seed funding process for tech start-ups.

This study can help Swedish entrepreneurs who are looking for early-stage funding for the first time to understand what it requires getting the financial support and how is the process of getting that. What are the hardest obstacles to overcome, and which of them can the entrepreneurs overcome more easily? And what are the main funding organisations in Sweden. As the landscape of funding sources is quite fragmented, it easily becomes hard for less experienced entrepreneurs to navigate between these organisations. The funding organisations all have in common that they wish to capitalise on start-up investments by providing capital, but the terms, horizon and engagement differ. We wish to use our findings to contribute to research and enlighten the reader about the funding landscape.

The contribution of this thesis was to investigate the gap in the literature regarding the pre-seed funding process. We knew very little about the pre-seed funding process beforehand, therefore we contribute by identifying out themes, that have not yet been researched in detail. We believe that our study shows some initial aspects about the funding process and the challenges that entrepreneurs are facing during the process. By gathering entrepreneur's own thoughts, who have experienced the process, we believe we get valuable data that can contribute to an area that seems unclear and complicated for many.

5.1 Limitations

Our study focuses on tech start-ups in Sweden, particularly in Uppsala and Stockholm, as these are Swedish cities that are suitable for start-ups, as there are several organisations working with innovation and research here. Therefore, our study is limited to the pre-seed funding environment in Sweden, and is not representative for other countries. It would be interesting to conduct the same study from a broader perspective and to include all of Sweden or other countries and to be able to compare findings on this basis.

Pre-seed funding is only a smaller part of the dynamics of the start-up environment, and our study is therefore limited to research regarding this topic. We are aware that investor preferences and seed financing also play a major role when it comes to smaller growth companies, such as tech start-ups. Therefore, we are aware that we are investigating a narrow part of the entrepreneurship field.

To get as truthful answers as possible, it might be better to interview the companies immediately after the funding process or even during the process. In our research, some of the companies have been through the funding process a few years ago. Can you still remember all the bad and hard things during the process? Or are you just happy that you got the funding and your business is

running? Of course, it might also be difficult to find companies and persuade them to be interviewed in the middle of the funding process, when the time can be hectic.

During the writing of this thesis, we had limited time, to conduct all the interviews, even though, we managed to get all the necessary interviews in place. Therefore, our sample size is big enough to get the initial views on the pre-seed funding process.

5.2 Future research

Since this study is focusing on the very first funding process, pre-seed, it would be interesting to know, how the funding process is in later stages, for example in seed stage. Is the process similar or does it differ a lot? That can be done using the same methods as in this study.

This study focuses on Stockholm and Uppsala, and it would be interesting to produce insight into the pre-seed funding culture in other countries. Are there differences between countries?

Further it would be interesting to dig deeper into how government venture capital and private venture capital can work together more efficiently, as they have different investment horizons and success criteria for exiting and profiting from start-ups. Further, some articles and papers argue that there is competition between these organisations, as they both provide venture capital for start-ups, and are therefore competing for investments in the same companies.

Another angle to take on the start-up environment is to look at which different kinds of stakeholders there are for a start-up. These can be internal or external stakeholders in the start-up: money-based, and non-money based relations (e.g. investors, tax-authorities and customer's external stakeholders with a money-based relation). The press and society in general are external stakeholders without any financial interest, and it would be interesting to investigate how they contribute with success factors to the start-up ecosystem.

6. Conclusion

To conclude this thesis, we can say that the pre-seed funding process for tech start-ups is time-consuming. The applications for funding organisations take up valuable time for the start-up. Further, entrepreneurs must consider the framing and pitching of the business when applying for funding, since getting the right message out is an important factor for convincing investors. There are also several challenges that entrepreneurs are facing during the process. These challenges can be seen as limitations in terms of how the money can be spent. Many of the funding programme applications are also very bureaucratic and some start-ups may need to hire external parties to help with those applications. The lack of network for early-stage entrepreneurs is a challenge, and several entrepreneurs expressed that they needed people with expertise in their technological field. For entrepreneurs, credibility is crucial when applying for early-stage funding. Entrepreneurs must convince investors about the viability and potential of the start-up, and this is particularly hard during early-stage.

The existing literature says that pre-seed funding is purposed to use for product development, which our findings have confirmed. All of the funds in the pre-seed stage go more or less for product development and to new technology verification. In Sweden, at least in Uppsala and Stockholm, there are many different organisations helping start-ups and entrepreneurs to succeed, for example with funding and other support. Almi and Vinnova seem to be the first organisations that Uppsala-based tech start-ups approach when it is time to acquire early-stage funding. Even though, the process is time-consuming and there are some challenges during the process, entrepreneurs agree that it is worthwhile and a path to success.

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