Impact of Overconfidence Bias on Entrepreneurs Financing Decisions

The Case of Growth-oriented Startups in Sweden and Germany

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Abstract

Background: Both Authors have many years of finance background and as well as studying entrepreneurship motivated to tackle the less researched area in entrepreneurship: entrepreneurs’ behavioural impact on their financial decisions. Such decisions in initial stages of startup formation have a critical impact on company’s future development which raises the importance of understanding the behavioural motives of the entrepreneurs. The paper tries to expand the knowledge in the area of behavioural science and entrepreneurship finance by creating research framework based on one of the key cognitive biases: overconfidence as well as external and internal financing environment.

Research Problem: The study explores the new perspective at which extent the entrepreneurial cognition biases affect the entrepreneurs, and more precisely: overconfidence bias shapes the growth oriented Startup’s financing decision process.

Research Questions: 1) How does overconfidence bias affect the growth-oriented startup’s entrepreneurs judgment on selecting the alternative financial source options? 2) How do Institutional factors also influence the financial decision-making process?

Methodology: This thesis is based on exploratory where a qualitative approach has been used in this study. The research is carried out as a case study analysis, by using multiple case studies.

Findings and Conclusions: The study indicates that in both geographical locations observed entrepreneurs have similar cognitive inclinations, including three overconfidence biases: overestimation, overplacement, overprecision. The most common biases among the entrepreneurs were overestimation; planning fallacy and illusion of control biases. The analysis also showed that overplacement and overprecision does not have a substantial impact on the examined entrepreneurs. There are several positive connections between their cognitive biases and financial decisions. In addition, institutional framework and environmental trends shape entrepreneur’s preferences towards external financing as well. Swedish entrepreneurs compare to Germans more actively use subsidy-based support. As Swedish entrepreneurs might as well mix the investment options with equity and credit-capital based funds, the German founders enjoy the privilege of maintaining their own control with the greater range of credit-based capital availability in their environment (bank loan).

Implications: As the academic implication, it gives contribution on understanding how overconfidence bias affects startup’s entrepreneurs are when it comes to financial decision-making processes. From the entrepreneur’s perspective it shows the importance to be considerate of their own biases. Understanding their biases would encourage them to process
necessary information to be able to reach a more rational decision and approach on choosing financial sources. For investor’s perspectives, this study will give insight to financial investors (ex. banks, VCs) to look at the startup’s entrepreneurs’ expectations towards investors and how risky are biases affecting the decision taken by the entrepreneurs to the firm where they put their investment on.

**Limitations and Future Research:** Deeper examination is needed to analyse the decision-making process of a firm that was co-founded by more than one entrepreneur (ex: the case of Founder F and G). To extensively analyse the research question, both quantitative and qualitative approaches might be needed. The study would gain more inclusive results with representation of all gender groups. In addition, the participants generational differences might have impact on the study results. Expanding the scope of the empirical data is worth to consider as well, point of analysis and profound analysis on overestimation and overplacement are also emphasized.

Keywords: Startups, cognitive bias, overconfidence, entrepreneurial cognition, capital financing, institutional comparison, entrepreneurship
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1. Introduction

The purpose of this introductory chapter is to provide an overview of startup’s financial aspects, entrepreneur’s cognition which may contain bias on its decision-making processes, and institutional factors. The bias might affect the process of how entrepreneurs chose its financing options decision. The discussion will lead into the research gap and study purpose.

1.1 Background

1.1.1 Financial decision making of Startups

Startup firms give crucial contribution to the sustainable growth of the business environment in the economy (Westlund, Olsson, & Larsson, 2011). They have a function of eliminating non-viable and less efficient enterprises through innovation and creativity (Singer et al., 2015). As Startups mostly start with small sizes, they suffer from a structural lack of tangible resources, such as machinery, buildings, land, current assets, which are the primary financial resources (Wymer & Regan, 2005). Sufficient financial resource is necessary to develop prototypes, purchase working capital, marketing services, and pay initial operational and living expenses (Parker, 2009).

In various stages of the firm’s development, from the initial stages where entrepreneurs decide to convert an idea to an opportunity, running the initial production and sales, cover financial shortfalls to meet their expenses, until the expansion of its activities and operations into more advance level – different financing options are available to Startups (Leach & Melicher, 2012). According to Parker (2009), to fulfill their financial needs, Startups supplied their finance by their form of personal equity (self-finance) or raised funds from external sources. Personal equity are often used on the initial financing stage, whereas external sources such as Business Angels, Venture Capitalists, Banks, Grant governments, Initial Public Offering (IPO) or strategic investors, will feed in to the prioritization of new owners ahead of existing owners in case of bankruptcy (Tariq, 2013).

The discussion between Startup and financial needs in the academic studies have been centered towards the financial supply side. The study of entrepreneurial finance have either been only
focused on a single source of financing (Cosh, Cumming, & Hughes, 2009), or external financing source from a venture capital (VC) together with angel financing (Amit, Brander, & Zott, 1998), and how the decision processes on investing capital from the investors to the Startup was made (Yazdipour, 2009). A lot of research is also presently available to identify how entrepreneurs are fulfilling their financial needs without relying on VC or Angel as external investors (Deloof & Verschueren, 1999; Meuleman & De Maeseneire, 2012).

However, on the financial demand side, there is still a considerable need for research on the entrepreneurial cognition characteristics of entrepreneurs in financing/investment decision (Wright & Stigliani, 2012). Fraser et al (2015) see the importance on having better understanding of financing decision for a firm and how entrepreneurs combine financial products. Several researches has been carried out focusing on cognitive effects in financial-decision making, e.g. the irrational psychological effects on financial decision of managers (Baker & Wurgler, 2012), the numbers of unidentified psychological-emotional-cognitive effects on how managers making financial decisions (Nguyen & Schussler, 2013). They also emphasized the need for concretization and further research on the mentioned topic. Huyghebaert and Gucht (2007) noted that very little empirical work on financing decisions of truly new firms has been done. As business startups are unique and they do not have prior financial or operating history and reputation, the possibility for them to use mix capital financing sources (e.g Venture Capitals and Banks) are there and it is needed to analyze (Huyghebaert & Gucht, 2007). Hence, on the decision to pick financing sources from startup’s perspective, the entrepreneur’s trait would interpret the reasoning behind the chosen financing options (Hutchinson, 1995; Chaganti et al., 1995; Hamilton & Fox, 1998; Kotey, 1999).

1.1.2 Entrepreneurial Cognition and Overconfidence Bias

In general, every individual has constrained on analyzing ingoing information which can create cognitive biases (Kahneman & Tversky, 1979a). Cognitive biases may appear when people process the reality or adopt ideological concepts with the lack of or insufficient amount of facts (Haselton, Nettle, & Andrews, 2005). In the entrepreneurial context, entrepreneurs also experience cognitive biases that create various consequences. Cognitive biases can change the trajectory of decision making by entrepreneurs, e.g. the tendency to avoid losses which might decrease their growth prospects due to lack of investment (Fraser, Bhaumik, & Wright, 2015), or subjectively analyze their capability which brings to wrongly calculated risks (Hmieleński &
Baron, 2009; Kahneman & Lovallo, 1994). That phenomenon can bring over-investment for the startups, which can lead to financial instability (de Meza & Southey, 1996).

The study of entrepreneurial cognition helps to provide arguments for biases. According to Gustafsson (2004), entrepreneurial cognition study contributes to understand their behavior and analyze on ‘why’ they do some of the things they do. From their study, Wright and Stigliani (2012) pointed out several published research that assessing the importance of cognitive variables in the entrepreneurial process, e.g. to the opportunities discovery phase (Mitchell et al., 2002), to the invention of new products, and necessary resources needed to run the business (Busenitz & Lau, 1996; Mitchell et al., 2002). This has also been supported by Mitchell et al (2002) argued that cognitive framework might be useful tool in helping to shine a light on least explored areas in entrepreneurial studies. In addition, it was observed (Bellavitis et al. 2017) that cognition factors can have a critical impact on entrepreneur’s financial behavior.

Among most important decisions made by entrepreneurs are those that in relation to the financial investment, as to start run a business venture (Yazdipour, 2009). Under certain condition, entrepreneurs are usually faced by the urge to take the initial decision. Thus, entrepreneurs tend to devote themselves to the initial judgment and subsequently make a decision biased by their subjective interpretation of an information (Hayward, Shepherd, & Griffin, 2006). Baron (1998a) stated that standard cognition aspects among individuals are not completely based on rationality, and human’s thought is frequently affected by potential biases and errors. As to entrepreneurs, they often meet the overwhelming situation above their capacity which leads to possible numbers of cognitive biases (Baron, 1998a).

Overconfidence is the most extensive types and relates to several other types of cognitive biases (Ehrlinger & Kim, 2016). Overconfidence is the widely appearing behavioral pattern of a person that is more believing in his capabilities or their choices than it is rationally proven to be true, therefore they are mostly cannot calculate their level of incorrectness. (Ehrlinger & Kim, 2016; Tversky & Kahneman, 1986). Busenitz and Barney (1997) argued that entrepreneurs are more overconfident than professionals in managerial positions. In spite their analysis concentrated on entrepreneur’s and the later stages of company’s development, the overconfidence pattern might have an impact on entrepreneurs since the evaluating process of the venture’s riskiness on the initial stage (Simon, Aquino & Houghton, 2000).
1.1.3 Institutional factors on startup’s financing

Another factor which the authors examined is the role of institutional context. In the next chapter authors will elaborate on the existing theoretical research on the impact of institutions more specifically cultural, financial and legal on decision making process of the startups. For example, Bellavitis et al (2017) argued that cultural context can even decrease the financing options. On the other hand, legal and investment ecosystem of the countries might be affecting the success or the failure of the startups (Blank, 2013). This is supported by Baumol (2010) that institutional factors do affect entrepreneurial environment in supportive or unsupportive ways.

1.2 Research gap, Purpose and Scope

The need to understand more on entrepreneur’s cognitive decision process is feasible, especially the necessity to explore deeper are available to enrich the growth of literature related to entrepreneurial ventures (Wright & Stigliani, 2012). This study is intrinsically driven by the research on financing in entrepreneurship and its connection to the growth by Fraser et al. (2015). On their paper, the phenomena of gaps exist between finance demand and supply between growth-oriented entrepreneurs has been discussed; started with entrepreneurial objectives, funding gaps in the market, venture capitals and business angels as the finance providers, and the growth of crowdsourcing, peer-to-peer lending, or accelerators as the emerging forms of funding providers (Fraser et al, 2015). In order to fulfil the gap, we decided to analyze how entrepreneurs decide to take different sources of capital into the fulfillment of the firm’s financing need.

Cognitive biases have an influence on entrepreneurs managerial and financial decision. As stated by Simon et al (1999) that individual’s cognitive capacity is limited henceforth the inaccuracy could happened and leads to numbers of biases. In entrepreneurs’ side, cognitive biases might negatively associate with their decision that followed by negative outcome to the firm (Simon et al, 1999), and overconfidence is one of the biases that create a substantial consequence in entrepreneur’s decision making (Zoe, 2016). Overconfidence bias have been chosen as the cognitive bias object in this study.

Question 1: “How does overconfidence bias affect the growth-oriented startup’s entrepreneurs judgment on selecting the alternative financial source options?”
Due to exploratory aspect and complexity of the paper’s research question, the qualitative approach has been chosen as a research method. Empirical data included seven semi-structured interviews. The entrepreneurs have been chosen based on an individual's high competency within IT-intensive industries equally from German and Swedish markets. The countries were chosen based on the current underrepresentation of those countries in modern entrepreneurship research in academia compared to American case base theoretical origin (Coleman, Cotei, & Farhat, 2016; Robb & Morelix, 2016). Both countries are also considered as venture capital intensive centre in the European continent. In addition, this study has also an emphasis on the role of institutional differences as a comparison to both countries.

Question 2: “How do Institutional factors also influence the financial decision-making process?”

Hence, the purpose of this study is to analyze in which extent that overconfidence as the entrepreneurial cognition bias shaped the growth-oriented Startup’s financing decision process. This has a direct relation to the cognitive biases as entrepreneurs tend to create bias when they are making a decision and to avoid risks. Indirectly, this study will also assess on how institutional factors might have an impact on the financial decision-making process.

This study would be academically valuable as large undeveloped segment in the connection of entrepreneurial cognition on financial decision making process (Wright & Stigliani, 2012), the individual-behavioral cognitive aspect of entrepreneurs that affect new venture performance (Hmieleski & Baron, 2009), and the role of institutional factors on entrepreneurial cognition (Fuentelsaz et al, 2018). A practical implication is also taken place as to provide valuable insights. To growth-oriented startup’s entrepreneurs, to study on entrepreneurial cognition presents the ways to apply simplifying frameworks and grow the company (Mitchell et al, 2002). For, financial investors, e.g. incubators and banks, it is beneficial to understand their possible future investments. In conclusion, the limitations and the possible studies as a further research are given.
2. Literature Review

This section consists of relevant literatures in regard to understand the theoretical aspects of the research question, mainly; different stages of technology-intensive startups, capital financing, entrepreneurial mindset, behavioural bias that may affect the decision-making process of entrepreneurs, and additional institutional aspects.

2.1 Technology-intensive startup and growth stages

Entrepreneurial landscape has changed over the years. Substantial breakthroughs are mostly done by the invention of new innovation and worldwide integration that create more competitive environment in entrepreneurial activity (Bettis & Hitt, 1995). It is supported by the study of strategic entrepreneurship that stated digital revolution re-shape the ways firm operate its business in order to make profit (Hitt et al, 2001; Stopford, 2001). Many of the small-young new ventures that create digital revolution are categorized into Technology-intensive (TI) industries. TI industries are classified as the companies that run in ‘high-technology’ area, or in broader definition as the companies that offer dynamic tech-competition with less barriers such as “…promoting shorter technology cycles, and more frequent innovating, patenting, competitive salary, episodic standards battles, and market repositioning.” (Vaaler & McNamara, 2010, p. 273).

A model of a stage-of-growth by Kazanjian (1988) is applicable to explain the stages of tech-based new ventures on variety of problems that they are facing along with it. The model has four stages that is illustrated in the figure 1 below.

![Figure 1 Technology-based new ventures stage of growth (Kazanjian, 1988)](image)
The first stage, Conception development, consist of the period where the entrepreneurs developed their ideas and the financial investment made were usually happened for the initial development and build the product. Then, in Commercialization stage, the entrepreneurs or set of co-founders are usually evolved along with the team, organizational, and product development stage happened until the product is ready to be marketed. Next, the growth stage, is when the product is ready to commercialize. In this stage, the more formal and specialized organization are formed to address a more serious level of problems that occurred. The last is Stability stage. Here the venture is usually have reached the position where the product has well-catered the market and the growth rate became slow. Thus, the intention of having the next generation product starts (Kazanjian, 1988).

However, technology was not the only booster on the firm’s business activity. In their study, as excerpted in Hitt et al (2001), Lee, Lee and Penning argued that tech-based ventures, along with the entrepreneurial orientation and financial resources are the biggest factors on boosting the venture’s growth. Entrepreneur’s growth intention plays an important role to derive the growth of the firm itself. As the startup’s entrepreneur has its control over the firm, their growth-intention will embedded on their way of controlling the firm will support the model of “the influence of actual control plays a role on small business growth...Control is likely to moderate the relationship between growth aspirations and the achievement of growth” (Davidsson & Wiklund, 2006, p. 17). The growth-intention of the founders in the startups will lead the firm to develop and move forward to the next stage which requires the need of obtaining financial investment in order to run its plan and realizing the vision.

2.2 Financing sources among Startups

Financial resources are one of the aspects to determine the venture’s growth (Hitt et al, 2001). The newly started firms have three options to finance their capital, with internal financing (entrepreneur’s own equity or funds from family and friends), by obtaining finance from external sources (Isaksson & Quoreshi, 2015), or by doing Financial Bootstrapping method to combine different financing sources. The discussion on these three financing sources will be proceeded on the points below.
2.2.1 Internal Financing Source

Internal financing is still becoming one of the essential sources for a startup to develop its business. At the very early stage of startup’s establishment, it is not uncommon to see that most entrepreneurs use their own personal funds to finance the firm’s capital. Several studies have found that “…most new and small ventures have sufficient capital, and the founders themselves are often identified as the largest source of finance in new ventures.” (Landström, 2017, p. 73). Entrepreneurs are mostly using their own personal savings, or even also their private bank’s credit card (Fourati & Affes, 2013). A study by Fourati and Affes (2013) presented the data of different sources of funding that entrepreneurial firms obtained. The data came from the United States government agency that supports entrepreneurs with their availability of government-backed funds. By their sample of 121 United States (US) new companies, half of the sample is initially run by fully entrepreneur’s capital. The rest of the US companies are also using the additional forms of funding that are coming from family, friends, colleagues, former employers, along with the major parts still funded by the entrepreneur’s contribution (Fourati & Affes, 2013). This is also aligned with the study done by Mauer and Steigertahl (2018) which stated that family and friends remain as the 2nd strongest financing sources of the European Startups, right after the private capital of the founders (Figure 2). This circle of investors can be also called as 3F – Friends, Family and Fools, as “…they invest their money into startup companies although all data shows that a great number of startup companies fail within the first three years of doing business.” (Calopa, Horvat, & Lalic, 2014, p. 27). However, it is also a good initial sign that there are external people, outside of entrepreneur itself, that believe on the idea and willing to take the risk on investing to develop the idea into further steps.

![Financing sources of Start-ups](image-url)
2.2.2 External Financing Sources

In terms of external financing sources, two of the most common external financial sources for entrepreneurs (both individual or groups) are credit cards and overdrafts (Landström, 2017). Overdraft financing facility occurs when the company’s checking account initiates a transaction that makes the balance negative, or more negative, then an available-to-withdraw amount of loan adds the credit amount to the checking balance in a timely period (Alan, Cemalcilar, Karlan, & Zinman, 2017). Overdraft transaction happens between entrepreneurs and banks, as the credit provider. However, several entrepreneurs need more external finance sources and longer terms to finance its capital, and thus in general, there are two kinds of money that entrepreneurs can utilize: debt finance and equity finance (Landström, 2017).

According to Landström (2017), debt financing is the capital that can be borrowed by firms that must be repaid with interest over the time period and usually secured with assets as its collateral. Differently, he stated that equity financing allows the firm to obtain capital without even having to repay a particular amount at designated time, and no collateral, but in exchange with ownership of the shares in the firm itself. However, when it comes to the early stage ventures, it is generally argued that debt capital is unsuitable because of the collateral and the increasing financial responsibilities (interest and amortization) of the loan will become a more burden for the early stage firms (Carpenter & Petersen, 2002; Landström, 2017). As the early stage firms usually have fewer assets to offer as collateral, equity finance is usually used as the more appropriate one than debt finance in the growth-oriented ventures (Amit et al., 1998). This is also supported by OECD (2015) which consider that the new, innovative, and high-growth firm are fit into the criteria of receiving equity financing as they have the high risk-high return profile. Supported by Cheong (2015), equity financing is generally required for funding the Startup assets for the firm’s initial expenses as no sufficient income are generated by the firm’s cash flow to pay the debt, if they decided to pursue debt financing. In favourable of startup’s that uses equity financing, several advantage and disadvantages of equity financing can be found in figure 3.
In his study, Landström (2017) stated three different types of equity capital providers: crowdfunding, informal investors (such as BAs), and formal VCs. Crowdfunding is an approach to raise money online, for a capital financing purpose, through social networks and targeting large numbers of investors who are willing to invest a small amount out of the total funding needed (OECD, 2015). Crowdfunding investment varies in different kinds of forms, which are donation-based, reward-based (e.g., sponsorship), and crowd investing (pre-selling, lending, or equity-based) (Kirby & Worner, 2014). The equity-based crowdfunding could be a compliment or substitute of early capital financing for Startup that is struggling to raise capital from conventional sources (e.g., banks), and it suited as Startups relatively request small amounts of funding (Helmer, 2011; OECD, 2015). Several platforms of equity crowdfunding are already globally available, for example, namely Crowdcube (UK), Seedmatch (Germany), and FundedByMe (Sweden). The study of crowdfunding stated that as the entrepreneurs have more responsibility to the great numbers of individual investors, it drives them more to accomplish the goal and not disappointing the community (Medziausyte & Neugebauer, 2017).

Business Angel (BA) is a wealthy individual who invests their personal funds and give additional assistance to the new ventures and entrepreneurs (Politis, 2008; Mason, 2006). Looking back to the explanation of different types of equity capital providers, BAs is the only category of the informal investors market (Landström, 2017). Most BAs is an expert in their field. They have climbed over the corporate ladder or has previous entrepreneurial experience as their major to apply it to investment, thus they sometimes use their intuition rather than data analysis (Schulz & Schmuker, 2017; Haines et al., 2003). However, according to Mason et al.

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<tr>
<th>Advantages</th>
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<td>Less risky as the firm does not have to pay back its shareholders in a short-term period</td>
<td>Lose some portions of the ownership.</td>
</tr>
<tr>
<td>Valuable business assistance and help enabling companies to tap investor networks and thereby enhance their credibility</td>
<td>External investors will have control over the business</td>
</tr>
<tr>
<td>If the business was at risk, the investors would understand that when the business failed, they would not get their investment back</td>
<td>If the business took off, the firms have to share portion of its earning to the equity investors</td>
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Figure 3 List of advantages and disadvantages of using equity financing (Cheong, 2015)
BAs are a heterogeneous group which could take dissimilar path in anticipation of investing. This is also supported by Avdeitchikova (2008) who explained several investment roles of BAs, namely Micro-investor role, Knowledge-oriented role, Capital-oriented role, and Business Angel role, with the possibility of their behaviour, tend to change over time.

The last one is the formal Venture Capitalists (VC). VC is a single or group of professionals that arrange funds from third party (e.g. pension, banks, insurance, corporate funds) and distribute it as a capital investment to entrepreneurial ventures (Mason & Harrison, 1999). Few investors and entrepreneurs regarded the VC market as an essential element of the development of new entrepreneurial firms (Landström, 2017). Compare to the former two equity capital types; usually, a VC invests on larger amounts of funding to high-risk-high-return firms, but with a longer process on identification, assessment, and the investment decision making (Landström, 2017).

2.2.3 Financial Bootstrapping Method

In between obtaining either internal or external financing sources, there is also a term called financial “Bootstrapping” method. Financial Bootstrapping method is defined as “the use of methods for meeting the need for resources without relying on long-term external finance from debt holders and/or new owners” (Winborg & Landström, 2001, p235-236). In practical manners, financial bootstrapping means that the entrepreneurs use all the resources the he/she has, e.g. earning money from working in other businesses, getting helps from their networks, sharing/borrowing resources from other businesses, delaying manager’s salary, etc. Entrepreneurs are basically doing everything that he/she could do to make sure the business are running, without relying on any typical long-term external financing sources, even it means that they are facing an intense need of financial requirement. In their study, Winborg and Landström (2001) concluded that there are three types of financial bootstrappers, mainly: The internal mode, who use the resources that are found inside of the business, The socially mode, that characterized to use resources from personal relation at no financial cost, and The quasi-market mode, who use institutional subsidies or facilities to secure its need for resources.
2.3 Entrepreneurial mindset & behavioural biases

According to McGrath and MacMillan (2000, p. 15) the main characteristics of entrepreneurial mindset are the “…ability to rapidly sense, act, and mobilize, even under highly uncertain conditions”. The authors argue that entrepreneurs are aware of existing opportunities, however, they are not chasing them parallelly. Instead, due to limited resources, they are concentrating on the projects which are following their vision and can be the most profitable. In order to conduct such projects, they adapt to the fluctuating environment to maximize their opportunities. To achieve that, they exploit their internal and external network connections (McGrath & MacMillan, 2000).

On the other hand, Ireland et al., (2003, p. 968) concentrate more on “Optimistic” bias presenting it as a “way of thinking” that gives the entrepreneur competitive advantage by concentrating more on positive sides of future uncertainty. According to Ireland et al., (2003), the entrepreneur creates meaning even in sophisticated and complex situations by his/her cognitive potential.

Haynie and Shepherd (2007, p. 9) present an entrepreneurial mindset as a result of metacognitive consciousness and as the “ability to adapt the thinking process to a changing context and task demands”. Furthermore, Baron (2014) discussed the uniqueness of the entrepreneur's behaviour, more precisely the combination of thinking, reasoning, goal setting, and decision making. Baron (2014) argues that entrepreneurs can connect seemingly different patterns by enabling their inner framework which is formed by knowledge, experience and networks. In addition, the external environment forced them to think differently. Entrepreneurs are usually not applying normal cause and effect logic when it comes to transforming ideas towards the actual projects, they do rather filter the information differently (Baron, 2014).

Moreover, McMullen and Kier (2016, p. 664) sharing the general idea regarding behavioural patterns of entrepreneurs with above mentioned authors. However, they focus more on presenting a key distinction by suggesting that Entrepreneurial mindset is activated only when entrepreneurs are concentrated on promotion. They explain the promotion focus as a motivation of pleasure. In the case of entrepreneurs, it can be associated with a successful return on investment or other achievements (McMullen & Kier, 2016).
2.3.1 Prospect theory

Prospect theory is a considered as a theory in economics based on behavioral sciences which elaborates that people’s decision making is built from the probability of losses and gains value, instead of the final outcome only (Kahneman & Tversky, 1979b). This theory was developed by Kahneman and Tversky (1979b) in order to defend the former Expected Utility Theory that was introduced by Bernoulli (1738).

According to Bernoulli (1738), people are making decision of a prospect under the rationality on the expected value of an asset. While, Kahneman and Tversky (1979b) see the imperfection, and found that people tend to behave towards risk or losses aversion. This statement has been illustrated as a curved value function on Figure 4 (Marchand, 2012).

![Figure 4 Hypothetical value function (Kahneman & Tversky, 1979b)](image)

According to Kahneman & Tversky (1979b), In the Prospect Theory, individual decision making under risk aversion distinguish by two phases; 1) framing and editing, and 2) evaluation. They stated that on the first phase, framing and editing, consists of initial analysis and selecting the offered prospects to the easier image, embed with the framing effects, and selected framed prospects will come as a result. Framing phase has become one well-known part in the literature as the systematic cognitive biases in individual decision-making processes (George, Duffy & Ahuja, 2000). The framing effect is “controlled by the manner in which the choice problem is presented as well as by the norms, habits, and expectancies of the decision maker” (Tversky & Kahneman, 1986, p. S257). In the more personal territorial, McDermott (2001) stated that people are regularly framed information they receive and persuasions they undertake, often without being aware of it.
The second one, evaluation, is where the framed prospects are going through assessment and resulting to the chosen one with the highest value prospect (Kahneman & Tversky, 1979b). These two processes could also be simply understood by a simplification and detection of dominance in regard to analysing gains or losses in financial outcomes, by eliminating the risk probability of losing. In simple words, if people were given two options to choose, Prospect theory recognized that people are choosing the less value over the higher one, as to minimize the risk of losing. This happened as a way to avoid the past experience of loss, which is more hurtful than the delightfulfulness of having higher values (Kahneman & Tversky, 1979b).

In the entrepreneurial studies, Baron (2004) argued that Prospect theory might play in the decision of individuals to become entrepreneur. The gain and losses consideration might contribute in the risk seeking of entrepreneurs to gain more in the future, and avoiding the losses incurred by the chance they did not take (Baron, 2004). Framing phase in entrepreneurs, especially, are where cognitive biases could take an impactful role inside, as it could affect their cognitive process on making important decision (McDermott, 2001). Furthermore, the explanation of cognitive biases on the entrepreneurial decision-making process are discussed further on the next section.

2.3.2 Entrepreneur’s cognition bias

Human cognition consists of many features such as the way of our thinking, purpose, language choices, its application and preservation (Barsalou, 1992). When it comes to entrepreneurs, the term ‘entrepreneurial cognition’ is defined as the entrepreneur’s intelligence structure that are used to guide them to assess the information, analysing possible business opportunities, growth possibilities (Mitchell, Busenitz, et al., 2002; Le Roux, 2005). These entrepreneurial cognitive factors could also become the factors that determine either successful or failures result in running their businesses (Baron, 2004). A study by Amato et al (2018) showed the difference between non-entrepreneur and entrepreneur’s cognition. Non-entrepreneurs tend to be adaptive while lack of initiatives, while entrepreneurs tend to be very active in pursuing new opportunities, with creative style, work autonomously, and ability to manage social skills (Amato et al, 2018).

However, Baron (1998) stated that one exciting possibility is that entrepreneurs are particularly suffering more from heartbreak over failing or mislaid on opportunities, compare to non-
entrepreneurs. In relation to Prospect Theory, Forlani and Mullins (2000) suggested that even though entrepreneurs tend to be careful on risk and possible losses, interestingly, they mostly also preferred higher risky choices as long as it considered on par with its gains (Forlani & Mullins, 2000). Here is where biases could take part, as they may find themselves reasoning their ability on running successful businesses (Baron, 2004), and take the risk. In his earlier study, Baron (1998) also concluded that “…entrepreneurs may regularly find themselves in situations that tend to maximize the potential impact of various biases and errors” (Baron 1998, p. 278). This statement came out as entrepreneurs are more likely to experience overload information, high-uncertainty situation, complicated feeling and thought interplay, high time pressure, and with a less optimal physical condition, that are depicted on Figure 5 (Baron, 1998). Such situations lead to entrepreneur’s susceptibility of biases or errors.

![Figure 5 Factors influencing differential susceptibility to cognitive errors by entrepreneurs and others (Own illustration, adapted from Baron, 1998)](image)

While there are many biases that apply to individuals in general, there are several cognitive processes (biases) that potentially relevant to entrepreneurship. One of the biases that have been studied in financial researchers is the Overconfidence bias. Baron (2004) stated that most entrepreneurs have the strong optimistic bias tendency (overconfidence), as to “believing that their likelihood of experiencing positive outcomes is much higher than objective data suggest” (Baron 2004, p. 224). That is for the reason that the failing numbers of businesses are bigger than the successful ones (Baron, 2004). Overconfidence bias has an essential effect as it may create substantial consequences in many fields, importantly in financial decision making of investors and also entrepreneurs (Zoe, 2016). In his study, Zoe (2016) stated that understanding overconfidence bias could not only help to manage a more precise quantification in financial investment but also to behaviourally predict the matrix of financial decision making.
2.3.2.1 Overconfidence bias

Overconfidence may happen when individuals do not adequately make assessment after receiving new information (Le Roux, 2005). Individuals might not realize to which extent their assessment is incorrect, and their certainty ease with a memory that support its confidence (Simon et al., 1999). Entrepreneurs presenting overconfidence usually treat their assumptions as facts without realizing, or even ignoring (Simon et al., 2000). Overconfidence bias manifests itself in many forms. Excerpted in Gustaffson (2009), McCarthy, Schoorman & Cooper (1993) stated that in regard to decision-making process of investments, entrepreneurs were likely to make the escalation of commitment, often based on overconfidence. While seeking information, entrepreneurs also tend to pledge their decision even with insufficient information and their limited rationality, where again, overconfidence played a substantial role in this decision-making process (Hayward, Shepherd, Griffin, 2006). According to Moore and Schatz (2017), Overconfidence is defined in these three distinct ways: overestimation, overplacement, and overprecision (Table 1). In a short manner, these are explained as the following: overestimation is the individual inaccuracy towards themselves, overplacement is an individual’s superiority thinking towards other, and overprecision is the immense believe that the individual has the correct answer (Moore & Schatz, 2017).

2.3.2.2 Overestimation (Illusion of Control and Planning Fallacy)

Overestimation is an optimistic forecast that has been driven by a hopeful thinking of the individual (Sharot, 2011; Taylor, 1989). Two stand out research topics that have pointed out specifically at the consistent level of overestimation are Illusion of Control bias and Planning Fallacy bias.

Illusion control is defined as the individual tendency to misjudge their control over future results (Presson & Benassi, 1996; Moore & Schatz 2017). People tend to examine, reach a judgment, and estimate their own control to determine their influence on top of a result (Thompson, Armstrong, & Thomas, 1998). In startup’s founding perspective, entrepreneurs tend to be confidently miscalculated (overestimate) their future prosperity as the result of their businesses (Hayward, Shepherd, Griffin, 2006). Thus, the possibility of entrepreneurs with illusion of control bias to choose debt financing is also higher, as they expect less equity claims on its future overvaluation expectation (Landier & Thesmar, 2006; Hayward, Shepherd, Griffin,
Illusion of control bias is particularly likely to occur in several environments where “...in setting that is characterized by personal involvement, familiarity, foreknowledge of the desired outcome, and a focus on success” (Thompson, 1999, p. 187). However, entrepreneurs might not have any sense of overestimating their personal control. As Illusions of control bias could sometimes give a positive contribution as entrepreneur to have an exaggerate idea of their competency and run the business confidently (Drummond, 2009). To follow his statement, as the example, an entrepreneur might not start a business if they were thinking too deeply about the risk of running the business. This bias could also help founders to attract greater financial resources as the show their confidence in assuring the positive economic outcomes of its business opportunity to the prospective stakeholders (Hayward, Shepherd, Griffin, 2006). Notwithstanding, it does not diminish the risk for entrepreneurs, as Thompson (1999, p. 190) stated that “…illusory of control may be reassuring in a stressful situation but lead to people to take unnecessary risks when they occur in a gambling context.”

Next, Planning fallacy is when individual tends to underrate the difficult tasks, or overrate the easy tasks, which creates a wrong expectation in terms of time completion (Moore & Schatz, 2017). The study of Buehler & Griffin (2003) stated that this bias caused by the overconfidence aspect in individuals towards “…over optimistic prediction of project’s completion times”. This bias has the inclination to believe that their project can be viable as expected even when being informed that the previous experiences have shown alike project ran behind time (Kahneman & Tversky, 1979a). The individual subject tends to overestimate of the timely accomplishment and having the tendency of ignoring the past experience (Buehler et al., 1994). However, this bias happens to most people, including entrepreneurs; who is certainly on a higher level of fallacy as to different degree of their dynamic environments (Baron & Markman, 1999). In their study, Kruger and Evans (2004) argued that one factor on why people overestimate the timely accomplishment and underestimate the project tasks is because they did not unpack its subcomponents of work-projects. In terms of entrepreneurial project, entrepreneurs tend to do as ‘making it up as they go along’ and see the present situation as unique or different from their previous experiences (Baron, 1998a). In his study, Baron (1998a) argued that the entrepreneurs “tend to focus primarily on the future in an extent that is greater than other people do and would tend to operate more strongly in the kind of situations they face” (Baron 1998a, p. 287). Thus, in the timely predictions of finishing tasks, this Planning Fallacy bias might create serious consequences for its ongoing business operation.
2.3.2.3 Overplacement and Overprecision

Two other overconfidence forms, overplacement and overprecision, are still under discussion among researchers. The evidence of overplacement is alongside with ‘better-than-average’ beliefs, and many researchers have measured it with unclear measurement (Moore & Schatz, 2017). For the example, same-sex university students have been asked to rate themselves compare to average student with a scale begin with ‘much worse than average’ into ‘much better than average’ (Moore & Schatz, 2017), which can be considered as uncertain comparison as different students might have different ideas about the average.

However, even with the existence of several critiques, Moore and Small (2007) explained their focuses is on the uncertainty in the people’s beliefs about performance, to proof about the concept of overplacement. Their study compares about people who tends to know about other people’s score in a set work, and it reveals the evidence of predictions (Moore and Small, 2007). It could be seen as a strong interconnection between overestimation and overplacement, as the opposite of those people who know nothing about other people’s score tend to overestimate others (Moore & Schatz, 2017). In entrepreneurship studies, overplacement tendency shows in the study of Shane and Stuart (2002). They argued on the possibility that entrepreneurs with its new ventures are more likely to believe they can compete over their competitors even though they have less resource of endowments. Similarly, Hayward, Shepherd and Griffin, (2006) argued that overconfidence entrepreneurs with high risk inherent tend to think they can pursue the prospective opportunities better than their competitors and chase its high estimation of possible future gains.

Overprecision means that one has excessive faith in themselves, that he/she knows the truth, while underestimating the diversity of possible outcome (Bernoster et al, 2018). Overprecision, on the other hand, is the most noticeable forms in overconfidence yet also the least understood one (Moore & Schatz, 2017; Åstebro et al, 2014). In their study, Bernoster et al (2018) also argued that the result was also discover a tendency into overestimation rather than overprecision as he was only using general measurement. General research on overprecision tendency in individuals has been done, e.g., the participant’s confidence on specifying their right answer over questions in percentage (Gonzalez-Vallejo & Bonham, 2007; Koehler, 1974) or researcher who specify the actual probability distribution in their studies (Moore, Carter, & Yang, 2015). This approach could show how people are express confidence in their everyday life but also
problematic as the measurement focus on their belief of assured answer – whereas the accuracy will fall below confidence (Moore & Schatz, 2017). In entrepreneurial field, a group of researcher study on how overprecision affects exploration and exploitation of entrepreneurs (Herz, Schunk, & Zehnder, 2014). They found out that this bias is negatively affected the entrepreneurship’s opportunity experimentation. Still, most studies come with the consistency of overprecision but also unwarranted as most it relies on few exact quantitative measurements (Moore & Schatz, 2017). Thus, these raise the possibility of further studies of overprecision as one form of overconfidence.

2.4 Institutional factors

In the Startup’s entrepreneurial context, Bellavitis et al (2017) also argue that cultural context can even constrain the financing possibilities of the Startups. That includes aspects as risk aversion, credence, financial markets transparency levels. Ranges of study in the institutional comparison in business innovation between countries have been done by several researchers, i.e. startup’s innovation ecosystem in three southern European nations (Basso, Balzar, & Andonova, 2018), institutional comparison in startup’s valuation across thirteen countries (Berger & Köhn, 2018), or business system comparison between thirteen Asian countries and five western states (Witt & Redding, 2013).

In fulfilling financial gaps, the institutional level of support plays a part of entrepreneurial decision making. The country’s economy regulation and investment structure influence the startup innovation economy on every country, which might lead to failures or successful business developed by the entrepreneurs (Blank, 2013). Study by Landsström (2017) stated that entrepreneurs are not only depended on business-specific assets, e.g. business capital intensity, business growth. He found that the context of the financial market characteristics and the legal system of the country, where the capital providers are located, might also contribute to financial decision making of entrepreneurs. Similarly, a study by Vekic & Borocki (2017) addressed the role of government is mainly to assure a smoother process for startups to receive funding and boost their growth. At the same time, funding organizations such as Banks, BAs, VCs, gave a clear financial support as its functions (Vekic & Borocki, 2017). In line with Landström (2017) statement, Baumol (2001) classifies four institutional foundation that is conceivably supporting an entrepreneurial economy. As stated in Griffiths et al (2012) interview to Baumol, these four institutional foundation are as follow: 1) easiness in forming a business, 2) institutional
financial support for entrepreneurial activity, 3) restrain governmental cooperation that create unproductive entrepreneurial activities, and 4) better incentives for larger and more established companies to innovate and grow.

In the institutional financial support level, Landström (2017) addressed three types of the financial support system that are available for young and growing ventures in different countries; Equity capital-based system, Credit capital-based systems, and Subsidy-based systems (Bornefalk, 2014). Funding organizations such as BAs and VCs categorized to play most roles at the equity capital-based system, banks and microfinancing companies are leading at the credit-capital based system, while government funds and agencies topped its financial assistance to startups in subsidy-based system’s countries (Landström, 2017; Basso, Baltar, & Andonova, 2018). With these contexts, the USA is often characterized with equity capital-based system, Germany regarded as credit capital-based financial markets, and Sweden has subsidy-based financial markets for entrepreneurial ventures (Landström, 2017).

2.5 Conceptual framework

To create an understandable picture of this study, Figure 6 illustrates the conceptual framework that consolidate the theory and literatures that have been described above.

![Figure 6 Conceptual framework, based on Kazanjian (1988), Kahneman & Tversky (1979), Moore & Schatz (2017), Baumol (2010), & Landström (2017)](chart.png)
The growth-oriented startup is represented in venture stage based on theoretical framework by Kazanjian (1988), that shows the financial and investment needed by startups in order to grow. The process of identifying and choosing available financing sources create a decision-making journey for startup’s entrepreneurs. Entrepreneurial bias and institutional system took part on the journey itself. Internally, the entrepreneurial bias may occur in form of risk aversion and overconfidence bias that might embedded in the individuals; the theoretical foundation of Kahneman & Tversky (1979) and Moore & Schatz (2017) are being used.

Aside from entrepreneur own self-bias, the institutional support system also matters as one indirect factor in choosing an investment that are available to support entrepreneurial activities; the theoretical foundation by Baumol (2010) and Landström (2017) are being used. These foundations supported this study’s conceptual framework in order to create analysis and answer the research question that has mentioned before.
3. Methodology

This section explains the approaches that have been enabled on this study in regard to answer the research question, mainly; research design, research context, interview guide, respondent selection, data collection method, data analysis method, reliability, validity, generalization, and the ethical consideration.

3.1 Research design

This study is conducted as an analysis to see in which extent that the cognition bias affects their financing decision process of the growth-oriented startup’s entrepreneurs. The authors created qualitative research design which is synchronized with the art of the research problem and the question. From the main types (Creswell, 2013) of qualitative approaches: Ethnography, grounded theory, case study, and phenomenology the case study method was the design of the first choice for this paper. It can be explained with the fact that case study approach is mostly done through deep research and observation on person, collection of individuals or other type of social groups (Polit & Beck, 2017).

The authors create a research design as it is a helpful tool to support any researchers making the process of essential data accumulation and analysis to arrive at the solution (Sekaran, 2003). The element of research design on this study has been illustrated in the Figure 7 below:

![Figure 7 Elements of Research Design](Self illustration adapted from Sekaran, 2011)
3.2 Research context

The research context of this paper is the current entrepreneurial environment and its challenges. More specifically the firm’s financing behavior connected with the founder’s cognitive biases. The authors exploring that real-life context which gives the study exploratory nature. For that reason, authors have chosen qualitative approach as the most suitable one. Qualitative research explores the natural contexts where person or groups operate or interact, because it tries to present deep vision of the problems in reality (Polit & Beck, 2017). Qualitative approach gives more tailored tools to collect and analyse empirical data. Qualitative data includes acquiring non-numerical data, which gives more detailed layers of information to decipher rather than numerical data tables. According to Bryman and Bell (2003), a qualitative approach is time cross-sectional, which is better to apply for analysing why various processes are happening. The existence of many variables and their complex interconnection creates a necessity for deeper understanding. Another method is called as quantitative approach. Quantitative method analyses a study using numbers (Bryman & Bell, 2003), which can numerically show the scale of when and how much financing was attracted by entrepreneurs and the possible equivalence with the chosen financing options. However, that method would not be able to explain the behavioural motivation and entrepreneurs reasoning behind their decisions.

The research strategy of this thesis is case studies, mainly by using multiple case studies. According to Sekaran and Bougie (2011), case studies analysis fits into qualitative data which discussing about certain organizational topics as “picking the right cases for study, understanding and correctly translating the dynamics to one’s own situation, are critical for successful problem solving” (Bougie, 2011, p.55). Considering the area of research of this paper where the authors were trying to understand the behavioural factors impact onto organizational financing, this approach is appropriate. This method creates a more cohesive environment for the process of defining the connections and patterns during the analytical process.

3.3 Development of interview guide

During the planning of interview guide a set of 25 questions has been formed to provide information to answer the research question raised in this study (Appendix 2). The questions consisted of three parts, mainly about the firm’s general information, capital financing processes, and cognitive biases. The interview was conducted through a direct meeting, video
call, and phone call. The use of Skype, WhatsApp, and regular phone call have become the platform of communication. The interview process was started with the description of this study and verbal consent proposal to the respondent, which related to the entrepreneurs and the firm’s information. Later on, the questions and answer began between 30-60 minutes.

After the series of the initial semi-structured interview to the seven respondents, the authors found out that there was a need to do one follow-up interview in order to collect more information regarding to the biases. The follow-up interview conducted through a direct meeting and written survey by e-mail to the seven respondents (Appendix 1), with the questions varied and listed in the Appendix 2.

3.4 Respondent selection

The empirical data of this study is categorized as primary data. Sekaran (2003) stated that primary data refers to the information that is collected independently by the researcher. Authors chose mostly technology intensive startups as an object of case study due to the fact that such companies having shorter business cycles and innovating more often (Vaaler & McNamara, 2010, p. 273). That creates a need of financial resources in order to provide dynamic growth.

The respondent scope is limited into two countries: Sweden and Germany. Those two European countries as they are considered as startup hubs that is surrounded by the finance network and are approachable by external capital investment. Study by Novick (2018) described both countries are included in the list of top five countries by the biggest investment size and quantity to fund the early stage (startups) ventures in European continent. The study of Mauer and Steigertahl (2018) also listed its capital cities in the top 10 of European startup hubs. In addition, both countries have the least physical proximity as the authors are both reside in each country.

To follow the above consideration, the potential respondents in this study were approached based on three main criteria, primarily, 1) Tech-based startup in Sweden and Germany, 2) Entrepreneur’s growth intention which shown by the firm position at growth stage (Figure 1; Kazanjian, 1988), and 3) Entrepreneurs who has pursued alternative sources of financing into their firm. Based on the above-mentioned criteria, the authors have sent an interview proposal through e-mail as the medium to 25 startups (15 Swedish Startups and 10 German Startups).
The potential respondents contacts have been gathered through the recommendation of several existing contacts that are owned by the authors, including colleagues, academia, and local-owned government entities. Out of 25 Startups, seven accepted to be interviewed, while five refused to participate due to unavailable time and thirteen did not give any responses. The list of seven growth-oriented startups can be found in table 1 below.

<table>
<thead>
<tr>
<th>Startup</th>
<th>Founded</th>
<th>Gender</th>
<th>Company Size (Employees)</th>
<th>Respondent Position</th>
<th>Communication type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swedish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founder A</td>
<td>2015</td>
<td>Male</td>
<td>11-50</td>
<td>CEO</td>
<td>Skype Interview</td>
</tr>
<tr>
<td>Founder B</td>
<td>2018</td>
<td>Male</td>
<td>&lt;10</td>
<td>CEO</td>
<td>In-person Interview</td>
</tr>
<tr>
<td>Founder C</td>
<td>2013</td>
<td>Male</td>
<td>&lt;10</td>
<td>CEO</td>
<td>Call Interview</td>
</tr>
<tr>
<td>Founder D</td>
<td>2016</td>
<td>Male</td>
<td>&lt;10</td>
<td>CEO</td>
<td>Skype Interview</td>
</tr>
<tr>
<td>German</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founder E</td>
<td>2013</td>
<td>Male</td>
<td>51-200</td>
<td>COO</td>
<td>In-person Interview</td>
</tr>
<tr>
<td>Founder F</td>
<td>2016</td>
<td>Male</td>
<td>&lt;10</td>
<td>CEO</td>
<td>Skype Interview</td>
</tr>
<tr>
<td>Founder G</td>
<td>2016</td>
<td>Male</td>
<td>&lt;10</td>
<td>COO</td>
<td>In-person Interview</td>
</tr>
</tbody>
</table>

Additionally, the distance proximity between Sweden (Scandinavia) and Germany (Western Europe) generate an interest to analyze the two institutional setting based on respondent’s answer, as the two countries would have quite a different approach to the financial decision-making process. Baumol (1990) stated that the availability of financial resources is one of the decent institutional framework results on supporting productive entrepreneurship in every country. Also, as the theories in this study is originally based on the United States phenomena and its context, it is stimulating to see how this theory is applicable in the European context by digging to the phenomena of the Swedish and German cases.

3.5 Data Collection

Data sources for this paper is qualitative material produced by primary sources that have been gathered through semi-structured interviews with seven individuals as our sample sizes. The authors use interview as the data collection method, as it is the most suitable method to handle the situation and understand the phenomena of exploratory research better (Sekaran, 2003). Interview is categorized as “either structured interviews, semi-structured interviews, or in-depth interviews” (Saunders et al., 2012, p.374). Semi-structured interview has been chosen for
this study as it allows the authors to increase or decrease the amount of questions during an interview that might further explore specific details (Saunders et al., 2012, p.374).

The data collection has been done in a cross-sectional study over a period of March-October 2019. As Sekaran (2003) describes, the cross-sectional study is a study that gathered the data at one point of time, such as days, weeks, or months. Further details on the respondent criteria, preparation and execution of the data collection process are available on the subsequent parts as follow.

Next, this study has the causal type of investigation. According to Sekaran (2003), the causal study is the type of study where the scientist tries to define the root of one or more problems, thus defining the cognition bias factors that affect the decision making of entrepreneurs fits into this investigation. The authors follow the natural way of the respondent’s communication, with a non-contrived setting, and they would answer our question with very minimal interference from us as the researchers.

3.6 Data analysis

In order to analyse the data that has been collected, with the permission of interviewees the interviews were recorded and fully transcribed in written forms. As referred to Sekaran and Bougie (2011), the authors reviewed the written transcripts and applied the data reduction. After the completion of data collection, we conducted our analysis in relevance of our objective. The process of data reduction was done through coding and categorization.

Firstly, authors tried to define the codes which are usually consist of words with compressed meaning of some research areas which are being used to represent the data in different ways (Erlingsson & Brysiewicz, 2017). In the analysis 2 main type of codes has been used: codes related to financing sources; for example, and not limited to, Venture capital, bank loan, bootstrapping, and overconfidence biases (overestimation, overplacement, overprecision). In the next step of the analysis authors separated the codes into categories. According to Erlingsson & Brysiewicz (2017) categories are combination of codes which are correlated with each other based on their context and content. Multiple cases of the individuals then categorized into both types, taken into data displayed to get through the cross-case analysis (Appendix 3). More specifically categories are formed by codes which present the data in the same manner.
and logical connection is visible. According to Gioia, Corley & Hamilton (2012), these categorisations would help us as the authors to seek similarities and differences for the more relevant themes. In this manner, the study’s categorisation was developed based on the financing type and behavioural biases type based on the literature. For the institutional comparison part, the authors are using an emergent strategy on its multi case analysis. Emergent (or opportunistic) strategy is used to draw the analysis that emerge from the collected data (Palinkas, et al, 2015). The similar type of emergent analysis strategy was taken by Amable (2003) to study and compare different models of European economies. These data analysis process illustrated in the Figure 8 below:

In addition, during analysis authors created several matrixes which compare research objects based on specific characteristics and codes. For example, financing sources codes were organised in 2 categories (external and internal), which later compared through the matrix of overconfidence bias category and its subcategories. The analysed German and Swedish markets were compared by its institutional-based comparison afterwards.

3.7 Validity and Reliability

The exploration of trustworthiness is crucial in order to guarantee reliability in qualitative research (Golafshani, 2003). Reliability shows how comparable and similar will be the results of the study if it was conducted again in a different period or by another author (Gripsrud et al.,
Reliability is a benchmark which can show the trustworthiness of the research; however, it can be tough to calculate the reliability in case of qualitative research. One of the factors which can affect the qualitative research reliability negatively is the risk of a biased point of view in the interviews both by interviewed entrepreneurs and authors. Consequently, authors should analyze themselves during interviews as well. Especially, when the voice intonation and other nonverbal communication methods which might show possible prejudiced opinions, and therefore have an impact on the participant's answers (Saunders et al., 2012). Therefore, interview questions mostly were designed for open answers instead of leading entrepreneurs into designed answers choices.

Another characteristic which shows high validity of the analysis is the concept of triangulation when the empirical data from more than two different sources are compared (Yin, 2011). As the data of this study has been collected from several sources it also helps to increase validity. In order to achieve reliable results from the interviewee's, the authors prior to the interview provided both in written and verbal form the introduction and research question of the thesis. In addition, before interviews, the authors have done secondary research on entrepreneurs' companies and their background through available online sources such as business platform: LinkedIn as well as companies' official websites. One of the challenges regarding qualitative studies, which is also relevant to this thesis is the difficulty to replicate since participants opinions are subjective, and their understanding of past experiences can change by the time.

Most qualitative researchers suggest that the validity is only compatible for quantitative studies (Golafshani, 2003). However, they realized the need for qualifying check or measure for their research, and it leads to many interpretations of qualitative study validation that affected from the researcher's perception of his/her choice of paradigm assumption (Creswell & Miller, 2000).

3.8 Generalization

Gioia, Corley and Hamilton (2012) argue that even with research with small sample sizes especially case studies it is possible to generalize to broader phenomena. Main condition they state is that the case studies involved should generate ideas and findings which has the direct interconnection to other domains. The authors have developed the generalizations towards the events and data from respondents to achieve better validity in this qualitative study. Sekaran and Bougie (2011) argued by doing generalization, the attention has been directed towards common concerns by putting attention to even smaller number of events which increase more
accurate data representation. It is important to mention that chosen case studies are also intended to generalize to the theories in the theory chapter. Yin (2009) suggests that research based on case studies can be generalized into theoretical assumptions but not into populations. Author argues that the purpose of the case study can be to enrich and generalize theories instead of counting the deviations (Yin, 2009: p. 15).

3.9 Ethical Considerations

According to Saunders, Lewis, and Thornhill (2009), ethical issues is at the utmost importance of the research part “as it requires ethical integrity from researcher, research sponsor, and the organization’s gatekeeper” (p. 187). The respondent’s consent and sensitive personal data are one of the emphasis on maintaining ethical on the research. From the initial data collection proposal, the authors make sure that the respondents know the intention, the research purpose, how the information given will be used, and to give their consent on related matters.

In order to ensure the confidentiality of the respondent’s identity and the company the belong to, the authors have also asked the permission of an anonymity is taken as the identities. This was also taken due to the consideration on the disadvantage of presenting respondents with the real names will create the risk to hide or wrongly interpret important information, and therefore would create the possible harm of the reputation of the related enterprise.
4. Empirical Data

This section presents the data collected from seven founders of growth-oriented start-ups that are based in Sweden and Germany. In each founder part, describes the company background, its capital financing fulfilment process. These data taken by entrepreneur’s interview to dig deeper the possibility of biases in the founder’s decision-making process in relation to their startup's capital financing.

4.1 Founder A

Founder A established a security-tech startup in 2015. Based in Sweden, the company creates a specialized product in the form of a scanner or machine, which can verify a genuine and reveal false ID documents, mainly ID card, passports, and driving licenses. Its product is currently used by wide ranges of industry (e.g., banks, telecom operators, car rentals, hotels). Currently, they have 467 customers in around 22 European countries. The scanner helps businesses to avoid fraudsters and create a safer working environment for the staff. The idea of this company came as he saw the limited availability of ID verifier in the market, with the increasing number of ID fraudster. He looked over the market demand by contacting several companies on whether they need an ID checker. Thus, he realized that there is a huge demand in Sweden for the typical machine. From here, he started to begin the journey of creating the business in 2015 and having nine employees at the time being.

4.1.1 Capital financing decision process

For the last four years, his firm’s capital has been fulfilled through several stages including equity financing (2015-2017), and personal financing (2018). The equity financing was obtained in the initial and production stages. First, in the initial stage, the capital was financed by three main sources: personal fund, corporate partner shares, and ALMI, a state-owned company in Sweden that offers startups loans, risky capital and consultancy. The initial funding has been used to create the value of the company. Founder A stated that the financial support from governmental agency in the initial stage is less hassle compare to others “to try to get some money to be able to create value of the company and proven of concept, so it was very practical to borrow money from ALMI (Government funds)”. Later on, ALMI invests additional fund to support the development of the prototype, hire employees, start the product development stage and minimize the risk of personal funds.
Next, coming to the production stage, then he realized that they need big numbers of additional funding to sustain product development. In terms of financial planning, founder A stated that sometimes the calculation goes wrong and more investment needed thereafter. He stated that “...in terms of growth, it takes longer time than you expect, more money, and you should calculate everything with PE ratio 3x, as finally you realize that you need 3 times more money than you expected.”. Thus, the investment round happened every year. Later on, with the proven concept and the risen of the company’s value, he started to approach the venture capitals and big investment firms. With them, the possibility of having a dialogue is available, but it took plenty of times and huge workloads.

In the third round, He started to obtain personal financing from relatives, family, and friends. This mainly comes by the needs of capital to provide more ID scanners to its biggest customers in Sweden. Though the amount was not as big as before, He tried to minimize the time consumed on getting external finance with less effort, as compared to obtaining funds from venture capitals. As Founder A stated on the interview “At the same time, I have this very operative role in the company so it’s a high workload. We didn’t take in that much money, so that was just to get the money as easy and smooth as possible”. In Sweden itself, there are several ranks in the venture capitals market, as different venture capitals have different investment structures and objectives on investing to specific goals or stages of venture creation.

Several considerations on choosing external financing sources have also been taken, such as workloads and amount invested. On the workload, for example, short-term venture capital investors give the requirement to have an exit in 3-5 years, which increase the work and stress among employees. While long-term venture capital creates a more conducive environment to work efficiently, when it comes to amount, the bigger the capital invested could also close doors for other opportunities. There was also a condition where there was no win-win solution for himself and other partners, which leads to a no-deal solution. Moreover, Founder A did also not take external expertise assistance when several situations did not come out as expected. To seek an external assistance would be something that he realized he should have chosen in the past. These factors came as Founder A have had several former experiences on building numbers of firms before he started this firm; thus, he learned the most from his experiences when it comes to choosing any external finance sources.
There was also a condition where the value realization did not meet the target expected. As per control, He used to believe that he is able to predict the market, to predict the competitor “I thought I could predict the total market demand, but now I know that I can’t.”. However, He still believes that the firm will bring huge values – as per current condition that his competitors are mainly multi billion dollars company, but his firm managed to sell 3,000 scanners to the whole Sweden. Founder A thinks of having full control over the company is a necessity, as he runs every details of the firm’s operation by himself. The possibility of abandoning the project after a lot of financial resources involved is also available depend on the potential itself. He argued that closing the company might be the path chosen if there will be consecutive losses. However, he aimed to still improve the product and invest more money, even if the firm experiencing losses. With the case of possible profitability occurred, he is a risk-taker by having the willingness to invest more money and change the product, as his main goal is to exit and sell this company at one point in the future.

4.2 Founder B

Founder B is a Ph.D alumni of one of the public universities in Sweden. As the spin-off of the Ph.D. dissertation, he creates a startup that aims to revolutionize the way mobility disorders are treated through wearable technologies and advanced algorithm. The main business idea is to analyze the way patient’s move in their everyday lives in, as there is relatively time gap between the serial of hospital-visit treatments for months and years. Their wearable technology product is helping to provide objective analysis and see whether the medication or rehabilitation are working properly. The technology supports a better decision making on the side of medical personnel and also to give additional value to the patients. Additionally, this technology could be used for not only humans but also horses, as horses have similar problem with human if one of its feet got lame and could not be detected by their caretakers. Established in 2018, founder B and six other core team members started the firm and received many external supports including his former university and an external incubator program.

4.2.1 Capital financing decision process

Founder B’s startup has gone through two different capital financing phases: before and after the firm creation. The initial financial capital comes from his personal fund and two grants by government funds (Inovationskontoor and ALMI). After the establishment of the firm, he
decided to participate in several entrepreneurship competition and take more part on proposing public investment funds. The firm was successfully receiving several grants, both in the form of government-backed fund by Vinnova, and cash prize by winning couples of business competition.

To obtain an investment, Founder B stated that he developed an initial business plan as a basic business requirement without any intention to obtain any external investors investments. He had no exact target on obtaining financial investment nor nominal investment target expected. He, however, has an open behavior of receiving support and expecting suggestion from the external advisors while try to balance the suggestion to apply them internally. Thus, he chose government-backed fund firm. He argues that the government agencies are usually giving entrepreneurs plus support and assistance, as addition of the fund itself. Subsequently, no obligation to give the part of shares and a regular business quality checking, which he sees it as a push to encourage the firm’s performance in a positive way.

In addition to the former investment, he and the team also started to take a special interest loan from Sparbankstiftelsen, a foundation under Swedbank that aims to promote business, education, and research to work for the economy in Sweden. He stated that to win this loan “…the competition was difficult, and we get a very good soft-loan”. After all, he believes that the product itself is the main key of getting external funding. As long as the product has its own strength and the criteria that investors are looking on, there are a lot of ways to get a capital investment.

If the firm was succeeded, the result was perceived by both support of external investment and the team’s ability to execute the process. As he awares that the firm is always at the shortage of liquidity is exist, thus he chased all the possibility that is available around at any possible time. Neither forecast, nor profit-making are his main consideration to choose funding, but the support, network and channels to drive the business further. In terms of control, Founder B argued that to predict market demand and competitors are impossible, though the faith of bring successes to the business is still there. He made research on the external investors that they are targeting to and will try to adapt the approach depending on the situation and context. Sometimes, the investors decision is unpredictable by entrepreneurs. He saw that the possibility of abandoning the project or close the company will be depend on the project value.
considerations. It is possible to improve the product and invest more money, even if the firm was experiencing consecutive losses, or the profit realization was weaker than expected.

4.3 Founder C

Founder C is a founder of a tech startup based in Stockholm, Sweden. By establishing his firm in 2013, he and his team creates a specialized tech-product for collaborative structured problem solving that is mainly used in the product development process area. His motivation on creating this product is to support an improvement of collaborative discussion, helps people to have a better-structured argumentation, and democracy of a company. He managed a team as a founder and CEO, with two other co-founders alongside seven main employees. In the early years of development, there was a fundamental change on the core product due to a mismatch of the market needs. The direction has once changed based on the knowledge and experience earned through past failure. Founder C is currently running his firm with a better idea and new directions. In terms of decision making, the consensus of all founders has always in his main consideration, as he stated on the interview "I have the bigger stake of shares, but I would not do something without making sure that the other founders were agreed. We always had consensus in all decision we have made." (Founder C).

4.3.1 Capital financing decision process

His firm’s capital has been financed through the internal and external sources of financing. Founder C created a well-prepared business plan in the initial startup stage. However, he understands that the initial forecast was unrealistic. In the process of fulfilling financial needs, he considers two things that could be the option: 1) Doing additional consultancy work, or 2) Obtaining external financial capital. He chose the latter option, as the first one would create a huge possibility of distraction in the process of developing the core products. The option of obtaining the external financing is intended only to fulfill the financial requirement to develop the product, as it has not bringing any profit from the income yet.

However, there was a situation where things did not go as expected, and the firm changed its total direction. In terms of planning, founder C argued that there was a difference between the planned and actual time related to fulfilling the financial resources. He, however, is still having
a high confidence level in terms of new finance availability to fulfil the liquidity target with external investors.

In the process of re-constructing the initial investment, he invested his personal fund into the firm, and he was successfully invited several business angels later on. In the current year, he is optimist to get one more capital financing round by an investment from a business angel. He stated that “…to listen more on the external expert’s suggestions was one thing that could have been done better in the past”, thus, the nature of BAs investment suits the firm better. To obtain a capital investment from venture capitals has yet come into his consideration. He perceived that the nature of VC’s investment only suits to certain startup’s stage “We had the discussion earlier about the shares of the company and the time to go for venture capital is when the product market is very clear, and the goal has been proven.” Based on his experience, VC’s investment would affect the escalation of the speed on the firm’s product development. Which might create a negative impact on the company itself. His startup is still in its early stage of development, thus, to be patience is needed in terms of product development. Angel investors are typically having more patience, and that is more suitable to this stage of the company.

The numbers of angel investors in his firm were chosen based on the good relationship that he has gained through his professional career journey from his previous employment. However, not only the personal relationship has been developed in a long time period, but he also considers that these angel investors are the mix of competent people in their fields. As he mentioned “It was not only that I knew these investors, but also that they are very competent people and I value their opinions. That is why we invite them to invest because we want their experience.”

As per control, he believes that to control the two external variables, such as total market demand and market entry of the new larger competitor, are out of their reach. He thinks rationally, try to project things based on the empirical data on hand, and predict the favourable outcome based on the synergy of the team. Founder C has taken the lesson from an unsuccessful experience in the past which forced this firm to change its direction, he took it as the cost of absorbing knowledge and not repeat it anymore. But if the same case would happen again, the possibility to shut the company down in the future would not be based on the cost they have spent. The chance of closing down only exists if the potential future profits is very low and all stakeholders could not be convinced anymore.
4.4 Founder D

Founder D established a tech-based startup in 2016. With the head-quarter based in Lund, Sweden, he and his team create a technology which can help the users to maintain and control their house heating system through the connection of a smart fuse to an app. The operational of the company runs by him as the founder and a CEO, along with two co-founders, and four employees, where everyone is giving their contribution as a part-time worker. The main idea to create this technology came when he was previously working as a consultant within energy business. He realized that people need a technology that can help them to control the heating system in their house easier. Enabling this such system could help the people, mainly those who are using the Scandinavian type, to be able to reduce unnecessary heating cost, energy waste, CO2 emissions, and also give a better comfort at home.

Currently, Founder D argued that the firm is in the software development stage (Beta), where the company has already got the paying customers who use it, but the product is still not yet ready for higher scale market. Current customers are seen as the testing customer, where they do pay for the services, but the full support is given when the technology goes wrong and more development is still needed. As the founder D said, “I would say that we are at the Beta stage...the product itself is not quite ready for scale-up but we hope we would achieve that by the end of this year.”

4.4.1 Capital financing decision process

Founder D’s startup has received mix of different financing: government funds, accelerators, and personal funds. The first financing came from an acceleration program under a company called E.ON, a private energy company, as a grant and support as the part of acceleration program. In the initial stage, there was no formal business plan as it was not a vital thing to do as he stated “...a 1-page written plan would be fine but not too long”. Financial forecast has just been made after 1.5 years establishment of the company. The ongoing activity is currently assisted also by external party: incubator. Followed by, he managed to receive several government funds namely from Swedish Energy Agency, ALMI, and Vinnova, and later on, another acceleration program fund from Climate kick, which is funded by European Union (EU). In addition to these grants, the firm were also obtaining loan from ALMI. In terms of personal financing, Founder D stated that he put the money himself as a part of investment without drawing any salary from the ongoing business “...we are still not profitable right now,
and I am investing my money into it.”. While running this firm, Founder D is also working partly in another place as a way for sustaining himself materially.

Since the initial financing, the intention was to get the capital investment in order to develop the product. Thus, the type of grants and funds that they have received was good enough only in the scope of developing the business application into a product, as stated by Founder D “The external financing has never been granted to pay me any salary for example. I survive on another income, so the funding has just been to develop the product and be taken closer to the market, that was the motivation”.

In terms of amount, he mentioned that Vinnova gave the best condition that they can fully finance the project. The most money came from the public fund projects in Sweden, except the one from Climate Kick. Though the funds obtained from EU, all the process was taken in Sweden and by Swedish representatives. There was a case when he tried to obtain another funding that fully originated outside Sweden, but this did not go as planned. Founder D realized that they should have had an external expert specialized support in the past, such as product development expert. He stated that during the implementation of business plan, there were delays on product development and financial plan was sporadic. He had no clear plan in terms of obtaining finance, and the phase of liquidity shortage was there.

However, all of the external investments in the form of grants gave an ease requirement during the investment process. The most attractive one was that they did not require any equity-sharing at all “we still own all the equity, all of the shares ourselves. So, we didn’t have to give up our control to obtain the financing, there was one deal, but basically everything has been a good deal for us”. Founder D is usually taking the lead on making the move to chase the external investors. He always initiates the application and discussion process until the external investors agreed to invest, then the co-founders are mostly following the step. He has tried to attract several BAs, but it has not become a good match so far, as usually BAs could give only parts of the required capitals and he demand a capital that is capable to finance the project in a full round. The amount of time needed to pitch BAs or VCs are also taking longer time than other types of external investment. Thus, in the current stage, he’d prefer not to spend the equal amount of time to look for VCs and BAs investment, as he mentioned “…we found other sources of money and it takes so much time to get BAs and VCs. So, we have chosen for now to not spend so much times for that process.”
For control consideration, he argued that it is very hard to predict the total market demand to the firm. Since his product is a new innovation, he believes that no peer-to-peer competitor are comparable to predict the accurate competitor in the market. Thus, no accurate answer could be deciding on controlling in making the business success or fails for its chance in the market. Founder D is willing to keep going until reach a point where he thinks that the project is no longer feasible, even after a financial investment still shows if the profit was weaker and the company was making loss. He also stated that the improvement of the product, or risky investment, would be happen in the future depend on the necessity and the timely condition.

4.5 Founder E

Founder E established a tech-based startup in Berlin, Germany in the second quarter of 2013. It was started with him and 3 other co-founders, while later only him and 1 other co-founder are still active managing this company until now. It started as an alternative media Product provider for rapidly growing tech environment in the region. The selection of Berlin was planned due to the booming startup environment. He planned and designed a unique range of effective online and offline media campaigns, both for local and international customers. As he describes: “The company’s original business model was to offer media-for-equity deals. At the time of founding the company in spring 2013 there was no independent media-for-equity service company which was independent. We then fulfill the need in the market and the original business model was quite innovative”. The main mission was to support growing businesses to scale their operations and expand in new international markets. Time showed that business model is reliable which transformed into steady growth. In addition, client's loyalty and satisfaction grew accordingly. Companies competitive advantages are transparency, high return on investment as well as online performance management. In 2014, he drove the company to start the internationalization process. The first branch outside Germany was founded in Singapore, which later followed by other Asian expansion to Jakarta, Indonesia. Founder E’s firm has also several offices in the US, France and UK.

4.5.1 Capital financing decision process

Founder E decided to use bootstrapping method in the initial stages of financing. He generally thinks that to cover the capital needs by your own is the best ways to do. He had a ‘pragmatic’ business plan due to necessity to present it to secure funding from the investors for the approval.
Fortunately, the company’s earnings turned out better than what he expected previously. And by doing so, he emphasizes the importance of having the influence and freedom of decision making by yourself, in your own company, as he stated “Most attractive from a founder’s perspective is to cover your cash needs from a positive cash flow from your business activities. However, this is not always possible, but doing so you maintain the most influence and freedom in your company”. Moreover, as bootstrapping method is usually not involving the dilution of company’s shares to other parties, thus this method satisfied him to keep the control “(to have control is) important, because that is really one of the most important differences between being entrepreneur and employee”. He understands that this is not always possible to do when you obtain an external financing investment to a firm.

In the next step in order to scale up, they did a small equity round by obtaining funds from a network group of BAs. Founder E argued that young companies are usually loose its own control when they do the financing rounds, so it is important to negotiate and pay attention to details rather than thinking only about the company’s valuation. In Germany, when it comes to equity market (or VCs), Founder E argued that it is still relatively easy to obtain money for firm’s capital financing if the volume needed is low (less or equal to 100,000 euros). “Let’s say that if a capital-intensive type of business need above 100 million euros, it would be much more difficult as no German VCs are able to invest such sums” added him. Furthermore, to grow bigger in the media agency business, there is no possibility that new big competitor will enter the market, but the existing agencies network are getting stronger. In addition, he was aware of market trends in their industry and understands the grey area of awareness. Nevertheless, he still optimistic on business performance with the stress on learning from other’s mistakes, “Yes (I believe to be succeeded), but it is important to analyse why other fail” (Founder E). Founder E believed that he cannot predict market demand, but possible to analyze such the tendencies and trends in the industry.

Followed after, founder E obtained another funding by bank loans. He stated that to get another equity round their shares will even be more diluted, “if you are making an equity round our shares get diluted, depending on the valuation and the amount of the round, the impact can be drastically.”. Thus, he preferred to avoid that and take a capital injection from bank loan. For a bank loan, he understands the negative side of it is that the interest is usually very high, and this will affect the firm’s earnings “When you take a loan, especially for young companies the interest rate is very high, this will affect your earnings”. In general, he argued that the most
attractive source of financing is internal financing, more precisely positive cash flow from the business activities. To have a full decision-making control is the main motivation for the intention to sustain the company ownership. As for the case of consecutive losses that might happen in the future, he is willing to close the company as well as rational analysis on importance of the projects.

4.6 Founder F

Founder F created an online education startup in Berlin, Germany, in February 2016. The mission was to bring education transparency in the German education market. The firm had a very small team consisted by 2 people; himself and another co-founder. Founder E has a strong specialization in marketing and sales, and he co-founded the startup by one partner that is strong in IT infrastructure and other technology related areas.

In Germany, there is a high demand for tutoring services; however, back in 2016, there was no unified web platform with listed service providers. Founder E understood that need in the market and started to provide its services. Initially, the focus was on tutoring. Worked together with his partner, they listed a large number of education providers which users could choose based on various factors such as price, subject of education, or distance. The platform was providing both tutoring options: online and offline. In addition, users were able to rate learning providers and help other users to find the best tutors. The monetization strategy was based on the platform's commission on successful deals between parties. They were aiming to attract traffic (potential users) organically through Google Search platform, instead of advertising. He believed in the strategy due to relevant experience in Dating applications industry where the main traffic was coming directly from search platforms.

4.6.1 Capital financing decision process

Initially, he started to finance the company with their own resources by using his savings and salaries. From the company's inception, Founder F had written business plan which he was confidently that it was objective enough that financing organization were interested to invest in the business along with another co-founder, and the sales will be going well. In spite that his certainty on the sales forecast, however, it was not ambitious enough to guarantee sustainable growth which eventually led to the closing of the business, “We had a formal written business
plan. I think this is absolute necessary if you want to secure funding. For our internationalization we made the plan and research a bit more pragmatic and hands-on" (Founder F).

In the next step, they applied for external financing to KFW: German state-owned investment Bank, which is an active investor in German Startup area. He used outside experts when they were about to choose on financing options. After presenting their business plan with estimated sales and profit, the investment bank offered them the needed financial resources in the form of low-rate credit which he thinks it would be enough to sustain the business at least 9 months. However, KFW had one condition: to have the ability to control in the decision-making process regarding its fund's allocation. More specifically, the bank was insisting on using the funding amount exclusively on advertising. Nevertheless, it was contradicting their values of growing organically with fewer costs, thus they refused the offer.

He stated that it is important to have a full control over your original business idea. In spite of their unsuccessful experience on external financing, the founder was sharing the opinion that it is easy to get funding for startups in Germany if they present an interesting idea and are able to present realistic growth strategy. At the same time, He thought that they are pioneers in the market with that idea and be a winner even though other similar business would fail. Though they expected that new competitors will enter the market at some point.

Thereafter, probability of liquidity shortage was high since the capital was limited and for initial stage before the organic return external finance was needed. Founder F kept on believing that initially they predicted the market demand accurately, as “attract 1000s of new users through organic growth through search engines optimization without any other type of advertising”. It results to the lack of advertisement might as well incur the negative growth and its shortfall. Eventually the business was closed due to unsuccessful operations even though they believed in the potential. However, even after the company’s failure, he still believes that with bigger budget and more risky strategy the business idea can be profitable. Founder F realized that there was a criticatl difference between planned and actual spent time and resources. It causes from the beginning of the project participants are more ambitious and energetic which motivates them to finish the planned tasks faster than expected. To improve the performance of the company, he realized that business idea and strategy could have been done better.
4.7 Founder G

Founder G creates an innovative media agency startup based in Berlin, which was founded in 2016 with his extensive experience in digital advertising, together with his partner. The company is specialized in offline media management, which includes TV, print media, radio advertising, and marketing campaign management. The team consists of Marketing professionals with different cultural backgrounds. The firm’s provided services include planning and advisory on marketing campaigns with optimization suggestions. Since he and his partner are also operating digital media startup, they use that advantage in order to generate productive synergies. The company intensively using digital analytic and tracking tools to calculate and predict critical indicators such as CPA (Cost per Acquisition), CPI (Cost per Install) and CPL (Cost per Lead). It allows them to provide a high return on investment to its clients.

4.7.1 Capital financing decision process

Initially, the startup was financed through founder G's and his co-founder own resources, which were mostly generated from their other successful startup in the digital media industry. However, in order to scale up the business, they needed to attract external finance in the form of the bank loans. In the offline marketing industry to provide services, the companies required to negotiate with media providers such as TV and Radio channels for advertising spots. Those media company's industry is a requirement to pay for the advertising beforehand as a prepayment. For media agencies that means having large amount of liquid financial resources as one of the company’s board argues it is especially challenging for newly founded companies such as them where in the early stages of formation it was hard to finance marketing campaigns from the internal revenues.

In terms of planning, he planned slower growth rate than in reality. Due to industry specifications, especially in TV advertising, the media campaigns are usually large scale which means the successful marketing deal can assure instant high returns. Working business strategy provided them faster growth rate and they had to change their initially planned growth strategy. He was also sure that he can provide better deal than their big competitors, by offering lower fees, higher discount and analytical and big data tools with the help of their related digital media company. Thus, though he predicted the shortage of liquidity because of the large budget
standards for offline marketing, however the successful client deals assured them financial gains faster than planned.

He previously had financing strategy that involved more external financing. As the organic growth was better, he finally decided to decrease the fulfilment of external financing taken. The main external financing source which the company used was bank loans. They were attracting bank loans through combined loan applications for their other entities as well, which were already profitable and was showing more credibility. Founder G stated that it was important to have control over the entity, and bank loan financing nature supports it. This was stopping him from considering financial options and it is including sharing the ownership with third party companies. With this reason, he avoided to take form of any form of equity financing (ex: VCs, BAs) as he preferred to not get any interference from external. To improve the performance, he would better try to plan the startup by creating better response during rapid growth.

As having the experience at creating startup from a scratch, Founder G managed the business application and did not use any external assistance initially; however, he acquired talents from competitors with the intention to have all needed skills and information about the industry. He believed that this startup would become successful because they had already success in previous startup. He was trying to implement the same approach in this company in order to gain the similar level of success. In terms of competitor, he is confident to address any larger or new competitors as the market is limited and he often acquired former talents from his competitors. Though, He doubts that whether he can predict the market demand as too many external variables within the industry. Founder G stated that if the company would perform worse than expected than he would try to find out the causing reasons and understand why others would fail. If it would be possible to fix, he would still be investing on that project, otherwise they would invest in more profitable business.
5. Analysis and Discussion

In this section, the analysis and discussion of the data collected is presented in three parts; the firm’s financing structure, overconfidence bias tendency on each entrepreneur, and additional institutional aspects between Sweden and Germany that evolve through the comparison between founders. The discussion shows several similar factors involved in the financial decision-making process and also possible overconfidence bias tendencies of entrepreneurs.

5.1 Financing structure and its consideration

All founders, with their firms, are at the growth stage (Kazanjian, 1988), where they position themselves with a ready product and grab more of its market share. As they have passed through the early stages: conception development and commercialization (Kazanjian, 1988), they have gone through the process of capital financing fulfillment as well. Figure 9 shown one or more combination of financing sources that has been chosen by startup’s founder, with ranges of consideration, and likely to suit to meet their capital needs at the timely settings.

![Figure 9 Startup's founders and their chosen financing sources (Own illustration)]

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5.1.1 Internal Financing

Financial capital is the basic essential requirement of the entrepreneurs to run its business initially, internal financing is the essential capital for all of the seven founders that ignite the business operation to the next level (Landström, 2017). They used internal funds as part of their source of financing with everyone invested their personal funds, and four of them mixed it with bootstrapping method.
The use of personal funds was seen as the early, necessity, and easiest ways to fulfil the capital requirement to the seven founders (Landström, 2017). This is also a way to show that they create their internal connection and commitment to the business, as not only putting effort but also invested their own money to take the risk of developing the businesses. One limitation was in terms of the amount that can be fulfilled. Founder A, B, D, F perceived this limitation in a similar way. The more capital is needed the higher the risk that will the owners endure if one has to fulfil everything by himself. The amount will not enough for the company and to sustain their life at the same time. As to founder A and D, they took additional job to fund themselves personally. With this limitation, Founder C looked at it as a way to also co-founding the companies with partners. Not only to cooperate with a co-founder to build a sustainable business together, the affiliation of two co-founders is also mean that they are making their contribution to the company’s shares. Nonetheless, the majority of the shares in the company belongs to him, while the rest is shared between the other two co-founders. As he stated on the interview “I have the bigger stake of shares, but I would not do something without making sure that the other founders were agreed. We always had consensus in all decision we have made.”. This was similar with founder F. However, as the co-founder was still a student and did not have any job, so all the initial capital was borne by himself.

5.1.2 Bootstrapping method

The five out of seven founders chose to mix their personal funds with bootstrapping method to fulfil their capital needs (Winborg & Landström, 2001). Founder A went through the social mode orientation by utilizing the financing source from his personal relations on the firm’s third financing round (Mauer & Steigertahl, 2018). This method was chosen as to minimize his time and effort to focus more on his operational role, as he stated “At the same time, I have this very operative role in the company so it’s a high workload. We didn’t take in that much money, so that was just to get the money as easy and smooth as possible” (Founder A). Founder B used the two out of three orientation towards bootstrappers: the internal mode and the quasi-market mode of resources (Winborg & Landström, 2001), while founder E & G used their organic growth income and alternative cooperation with clients as its orientation (Winborg & Landström, 2001). Founder B look towards any kind of financial resources that was having a high feasibility to access, as to received cash funds by winning over many business competitions, institutional subsidies type of bootstrapping, and pushed the income of the
ongoing business. These were all similar with founder D, but he also received grants from private company. Both founder B and D argued that one of the strongest advantages of using this method is that this type of capital enlargement did not affect any change in ownership. This is identical with Founder E, G. They were using bootstrapping as one of the financing models by arguing its reliability and security. This method is considered by founders as supporting the firm’s organic development and more preferable in ownership perspective, which means it is not affecting the ownership structure of the company. Respectively bootstrapping keeps control of the entity to entrepreneur’s hands. As supported with the Founder E statement “Most attractive from a founder’s perspective is to cover your cash needs from a positive cash flow from your business activities. However, this is not always possible, but doing so you maintain the most influence and freedom in your company” – Founder E. The possible factors identified from the founder’s consideration to take personal funds & bootstrapping summarized in Figure 10.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Founders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal funds</td>
<td>All</td>
</tr>
<tr>
<td>Initial commitment</td>
<td>C, F</td>
</tr>
<tr>
<td>(Internal Financing)</td>
<td></td>
</tr>
<tr>
<td>Co-shared responsibility</td>
<td>A, B, D, E, G</td>
</tr>
<tr>
<td>Easy access</td>
<td>E, G</td>
</tr>
<tr>
<td>Bootstrapping</td>
<td>B, E, G</td>
</tr>
<tr>
<td>Ownership security</td>
<td></td>
</tr>
<tr>
<td>Organic growth enlargement</td>
<td></td>
</tr>
</tbody>
</table>

Figure 10 The factors behind the use of personal funds and bootstrapping method

5.1.3 External Financing

As to add more capital requirements, all seven founders tried to obtain external financing sources (Isaksson & Quoreshi, 2015). One founder obtained BAs investment as their only external financing sources. The rest six founders took capital investment in the mix form of bank loan, government fund, and/or VCs. However, one out of six founders tried to approach bank loan’s investment but did not manage to pursue any deal with investors at the end.

Bank loan and government fund are still seeing as an attractive external financing source among startups. Founder B, D, chose to obtain both forms as they preferred to take the benefit of both natures. As to government fund, the ease of getting support, regular quality checks, and no part of shares given, became the aspects that the founders desired the most. This view is also
perceived by founder A ““to try to get some money to be able to create value of the company and proven of concept, so it was very practical to borrow money from ALMI (Government funds)”. However, both founders received government fund’s support in the forms of grant and loan. In terms of bank loan financing, though well-known as an expensive source of funding considering the high payment on interest and collateral requirement (Cheong, 2015), however, founder B and D managed to receive special form of loan with lower interest (usually called as a soft loan) which attracts them the most. Founder E, F, G, perceived this statement similarly as they also took bank loan as their only form of debt financing.

Conversely, Founder F faced crucial side of obtaining bank loan. When he successfully applied for the low-interest loan by the German state-owned investment bank, there was a condition that the bank presented. The bank insisted on the type of agreement on which the loan must be applied, more specifically investment bank wanted him to spend the invested money on advertising which is unfavourable tool for his business growth. Nevertheless, Founder F had a different idea on a growth strategy, which contradicted with the institution’s model. Eventually, it caused the founder to decline the offer. Conclusively, five founders (A, B, D, E, F, G) were similarly agreed on advantages of bank loan as the safest type of external financing especially in the controlling perspective. The disadvantage could be considered higher interest rates among other external financing. As Founder E stated: “When you take a loan, especially for young companies the interest rate is very high, this will affect your earnings”.

However, none of the founders chose crowdfunding as their financing method. Founder A was the only founder who chose to receive VC’s investment. While, Founder C and E were the ones who considered and received BA’s investment on their financing capital. Obtaining an investment from VC, Founder A had the intention to raise the value of the company. He argues that to chase VC’s investment, one must put big efforts, spent loads of times (Landström, 2017), and make sure to have the proven concept on-hand. The hard work paid him off as the investment came in a large amount and successfully increased his firm’s value. Contradictive, Founder C perceived VCs investment differently. He argued that VC investment could lead to a situation where startup is increasing their speed although its product market was not ready, and it will create a risky position later on. As founder C stated, “We had the discussion earlier about the shares of the company and the time to go for venture capital is when the product market is very clear, and the goal has been proven.” As he managed his own evaluation to his firm, he chose BA’s investment as his best external investor choices. One other essential choice
in choosing BAs is the personal relationship factor. Founder C & E looked at this factor in a similar way. Through his connection, founder C managed to catch the interest of BAs to invest on his firm’s capital. Similarly, to Founder E as the group of BAs that invested their money on him were his former colleagues at his previous employment.

BAs and VCs are considered as equity investors (Landström, 2017). One common value that they wanted to attain from equity investors was they want to obtain the investor’s knowledge on doing things. These types of investors are most likely to have a strong background and years of experience on their expertise, whether as a single individual or as a group of investors. It is worth noting that these startups are still in their growth stages, and they do need advices and suggestions from those who are having more experience on the field. Two respondents have illustrated the benefits of having external advisors that come from their investors circle, mainly founder A who obtained VC’s investment “to have the investor that is hand-able, which you can have a dialogue with, so we could operate the company as we had planned.” and Founder C who obtained BA’s investment “It was not only that I knew these investors, but also that they are very competent people and I value their opinions. That is why we invite them to invest because we want their experience.”. This is in line with Politis (2008) and Mason (2006). Moreover, observation showed the motivation behind choosing equity financing is as an alternative to debt financing (bank loan) especially in the perspective of young and growing startups (Amit et al., 1998). Debt financing creates liability for the company, which eventually becomes a burden in the long term. Whereas, equity financing creates no liability but divides the ownership or decision-making right of the entity. This was stated by founder E “if you are making an equity round our shares get diluted, depending on the valuation and the amount of the round, the impact can be drastically”. The possible factors identified from the founder’s consideration to external financing summarized in Figure 11.

<table>
<thead>
<tr>
<th>External financing</th>
<th>Factors</th>
<th>Founders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Loan</td>
<td>Low interest loan</td>
<td>B, D, E, F, G</td>
</tr>
<tr>
<td>Ownership security</td>
<td>B, D, E, G</td>
<td></td>
</tr>
<tr>
<td>Government Fund</td>
<td>Business assistance</td>
<td>A, B, D</td>
</tr>
<tr>
<td>Ownership security</td>
<td>A, B, D</td>
<td></td>
</tr>
<tr>
<td>Crowdfunding</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Venture Capital</td>
<td>Higher start-up's valuation</td>
<td>A</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Business Angel</td>
<td>Fit start-up's stage</td>
<td>C</td>
</tr>
<tr>
<td>Personal connection</td>
<td>C, E</td>
<td></td>
</tr>
<tr>
<td>Professional expertise</td>
<td>C, E</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 11 The factors behind the use of external financing*
5.2 Overconfidence bias tendencies on entrepreneurs

The authors decompose the overestimation bias into three subsegments; overestimation, overplacement, and overprecision (Moore & Schatz, 2017), and the connection with financing behaviour becomes more vivid. The phenomenon of overestimation on its own consists of two specific biases: Planning Fallacy and Illusion of control, thus the following observations were made. The possible overconfidence bias tendencies on all founders summarized in Figure 12.

<table>
<thead>
<tr>
<th>Illusion of Control</th>
<th>Planning Fallacy</th>
<th>Overplacement</th>
<th>Overprecision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founder A</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Founder B</td>
<td>–</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>Founder C</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Founder D</td>
<td>–</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>Founder E</td>
<td>✓</td>
<td>–</td>
<td>✓</td>
</tr>
<tr>
<td>Founder F</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Founder G</td>
<td>✓</td>
<td>–</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Figure 12 Overconfidence bias analysis on startup's founders (Own illustration, based on Moore & Schatz, 2017)*

However, as the use of personal funds was chosen as the necessity among the initial firm’s capital investment for all seven founders, the biases that attached to personal funds as the chosen financing sources will not be discussed further in the subsequent parts below.

5.2.1 Overestimation

The observation showed that most founders have the overestimation bias tendencies (figure 12), respectively two founders with Illusion of Control tendencies, three founders with Planning Fallacy tendencies, and two founders are having both tendencies. The extreme case came from Founder F, as he inhibited all tendencies of biases without taken any external financing investment.
5.2.1.1 Illusion of Control

Literature claims that illusion of control biases could be seen by the founder’s inaccuracy towards own control over the future result (Thompson, Armstrong, & Thomas, 1998), which may happen or may not happen. According to table 2, four founders inhibited the tendency of illusion of control. The two out of four chose bootstrapping and bank loan as their financing sources, while one founder decided not to obtain any investment other than his own personal investment.

<table>
<thead>
<tr>
<th>Illusion of Control</th>
<th>Chosen financing sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>✓ Bootstrapping</td>
</tr>
<tr>
<td>E</td>
<td>✓ Bootstrapping</td>
</tr>
<tr>
<td>F</td>
<td>✓ Bootstrapping</td>
</tr>
<tr>
<td>G</td>
<td>✓ Bootstrapping</td>
</tr>
</tbody>
</table>

Table 2 Illusion of control bias tendency and the chosen financing sources (Own illustration)

The inhibition of illusion of control bias was seen as several founders have high level of confidence on predicting the total market demand or future competitor, as Founder A stated that “I thought I could predict the total market demand, but now I know that I can’t.”. He was also associated the positive impacts in the firm as a result of his abilities, as it may seem he has an exaggerate idea of his competency (Hayward, Shepherd, Griffin, 2006). Practically compare, founder F has the similar perception with Founder A, while Founder E argued that market demand could be predicted by understanding the industry better while competitors are easily predicted as the industry players are limited. In terms of Founder F, though the startup has failed, he still believes that they had initially predicted market demand correctly. He argues that with more financial resources and more aggressive growth strategy, they could achieve needed profitability. This shows that Founder E’s illusion of control regarding his ability to influence the external and internal processes of the business has motivated him to consider a possible result of larger amount of profit in future (Thompson, 1999).

In relation to external investors decision making, most founders believe that to create business plan and make a well-prepared research about the investors would likely increase the possibility of receiving the external investment. This control over predicting the coming future investment, it showed a subtle sign of illusion of control bias. It is arguable that some investors would prefer
a short brief plan on deciding to give an investment, as founder D argued “It’s not very important at the very beginning, maybe you can write down a 1-page. What is my product and who is my customer – that was what we had (to get initial investors).” The similar argument also came from founder B. Past failures experience were also shown as the lack of founder’s openness to receive external feedback (Drummond, 2009). This factor is inhibited by founder A, E, G, as the sign of illusion of control as overconfidence tendency that cause them took the wrong decision which led to bad results.

5.2.1.2 Planning Fallacy

The five out of seven founders inhibited the tendencies of planning fallacy bias. As per table 3, three out of four founders with planning fallacy tendencies are having similar pattern to choose bootstrapping and government fund, with bank loan financing in another layers.

<table>
<thead>
<tr>
<th>Planning Fallacy</th>
<th>Chosen financing sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>✓ Bootstrapping Government Fund</td>
</tr>
<tr>
<td>B</td>
<td>✓ Bootstrapping Government Fund</td>
</tr>
<tr>
<td>C</td>
<td>✓ Bootstrapping Government Fund</td>
</tr>
<tr>
<td>D</td>
<td>✓ Bootstrapping Government Fund</td>
</tr>
<tr>
<td>F</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Table 3 Planning fallacy bias tendency and the chosen financing sources (Own illustration)*

The below statement is a post factum self-observation of occurred events that captures the existent of planning fallacy bias in founder A, “...*in terms of growth, it takes longer time than you expect, more money, and you should calculate everything with PE ratio 3x, as finally you realize that you need 3 times more money than you expected.*”. The planning miscalculation at the financial needs of the business leads to redundant short financial condition every year (Moore & Schatz, 2017). At the 1st and 2nd initial round, they managed to receive funding according to the timely vision, but then they realize the quantification was still is not enough. This condition enforced the company to have an investment round every year since its establishment, as it may hamper the business process (Buehler et al., 1994). Hence, they went through bootstrapping method by tried to attract personal networks, like family and friends, to get the capital funded and receive investment with a short period of time. It was also easier to process compared to other equity investors instead of obtaining fund from venture capitals, which consumed plenty of time and efforts (Landström, 2017).
This is in line with founder B, as he shows the existence of planning fallacy always been where the condition is slightly different. Founder B stated that he has no expected forecast on capital investment (Kruger & Evans, 2004). However, he realizes that the company has always been short of money. As neither forecast nor planning has been made regarding targeting external investors investment, He relies more on building the network, product, and channels that can support the capital better, which by means is using bootstrapping method and getting low-interest bank loan as a special product for startups. From here, the authors recognize his preference towards external investment is fit with their current external investors, as it consists of mostly government grant-based, where connection and network play an active role in it (Landström, 2017; Basso, Baltar, & Andonova, 2018). Similar considerations taken by founder A, however he also pursued VC investment as to get more professional insight.

Relatively defined planning fallacy bias was presented at Founder F. As he stated, “attract 1000s of new users through organic growth through search engines optimization without any other type of advertising”. The reality showed that during three years of operation it got low numbers of active users which much slower growth rate was than planned, which brought shortfall of benefits as well. Planning fallacy bias consecutively contributed to Company F’s financial decision-making behaviour. Because he had a higher planned expectation for the turnover, they tried to attract external financing in the form of low-interest rate loans from government-backed investment bank but then rejected it. He planned to use that resources for their operations based on their estimated user base growth rate. However, as mentioned above, their forecast was again too optimistic (Buehler & Griffin, 2003) and eventually, the external debt was not necessary.

5.2.2 Overplacement

Four out of seven founders inhibited the tendency of overplacement bias. This bias assessed through their positive view on the business result towards themselves even when their peers were relatively experiencing failures in the market (Moore & Small, 2007). Two out of four founders chose Bootstrapping and Bank loan as their chosen financing sources (Table 4). The use of these two financing sources considered as the two founders with overplacement tendencies would be likely to keep their own control, as the nature of these financing require no shares given.
In this bias, founders are more likely to see their firm as developing at its current stage. Founder E & G put this future prospect more optimistically compared to other competitors that are failing (Moore & Small, 2007), however they also keep being realistic. He put into consideration that by doing market assessment would help to decrease such case to happened as well in their own firm, as Founder E stated “Yes (I believe to be succeeded), but it is important to analyse why other fail”. Similar with founder E, founder C believed to keep the improvement on teamwork, as that is an essential part on how to make the firm succeed compare to any other businesses.

In case of founder F, he had the thought that his firm was the pioneer in the market, but things did not work out as expected. He chose bank loan as to assure the full control on its own but rejected the loan offer as the terms and condition that the bank offer was unfit for him. Going with his own direction by believing that his way of doing was the best strategy for the firm, he finally realized that the firm had no good potential after time passes by (Shane and Stuart, 2002). He and his partner ended up terminated the firm. This has clearly shown the exposure of overplacement bias in the decision-making process of founder F.

### 5.2.3 Overprecision

Three out of seven founders inhibited the tendency of overprecision bias. The chosen financing sources of different founders are quite scattered; however, two out of three founders do bootstrapping method while mix it with other debt or equity financing sources (Table 5).

<table>
<thead>
<tr>
<th>Overprecision</th>
<th>Chosen financing sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>✔ Bootstrapping Government Fund VC</td>
</tr>
<tr>
<td>F</td>
<td>✔ Bootstrapping  Bank Loan</td>
</tr>
<tr>
<td>G</td>
<td>✔ Bootstrapping  Bank Loan</td>
</tr>
</tbody>
</table>

*Table 5 Overprecision bias tendency and the chosen financing sources (Own illustration)*
Founder A associated the positive result of the firm in merely his ability of the chosen financing strategy, while founder G believe that he should prepare a better strategy towards the past failures without asking external assistance. They seemed to have the high level of confident that he has the all the solution and answer needed (Moore & Schatz, 2017). The recognizable overprecision bias tendency presented by Founder F. He had an immense belief on himself to make his firm succeeded as he did a well-researched plan, understanding the market and its demand. As the bank wanted to give loan by controlling the firm’s spending direction into advertising, he rejected the suggestion and applied his own idea to grow the firm organically (Bernoster et al, 2018). It turned out that the losses incurred consecutively, and the organic growth did not work as expected, until he decided to terminate the firm. This has clearly shown the exposure of overprecision bias in the decision-making process of founder F.

5.3 Overconfidence bias and chosen financing source

The effect of overconfidence bias on entrepreneur’s decision-making process seems evident, however each form of bias created different influence on entrepreneurs to choose the investors. For example, planning fallacy bias that is appeared on Founder C does not create any direct effect on the process of having BAs as their investor. He does have the consideration of taking BAs due to the investor's ability to contribute its expert insight as the additional value beside money, however Founder C has been taken BAs since the beginning of the firm’s creation. No such changes have ever happened in terms of the capital investors structure, despite his awareness of taking more external suggestions would have been done better in the past experience. Thus, the possession of planning fallacy bias does not play any role in choosing BAs (as the external investor) to his firm’s external investor.

Similar with Founder A, he does show that Planning Fallacy bias has an impact on choosing external investors. In the 2nd investment round, he decided to take external investment from VCs with a hope of gaining the big volume of investment. Initially, he somehow ignores the time length of the process that would be taken, and it resulted in being longer than he expected. Thus, as he came across the 3rd round of investment, he chose to go for his personal relatives. Planning fallacy bias plays the role here, as he would not take the risk of longer time length in chasing the investors, no matter how big the enjoyment of gaining big numbers of investment comes after. He had rather choose the smaller amount of investment with more assurance of
knowing the shorter time period he would spend. This was also aligned with the definition of Prospect Theory, where individual preferred to gain less value in order to avoid the risk and the planning fallacy bias do exist in the framing phase of the founder A’s consideration on taking personal relatives as the external investors.

Whilst next consideration, the direct effect of biases to the external investor choices does present on the 2 of growth-oriented startup’s entrepreneurs. Founder F in the initial stage of the company’s operation had an ambitious growth strategy based on his estimated market demand. Observation shows that he has inclined to all aspects of overconfidence bias, with overestimation shown as the strongest one. In order to grow more rapidly, he found external investors in the form of the government-backed investment bank. However, the investment bank had a requirement on how to use invested money, which the founder declined. Founder F was confident that his business strategy was more effective than the bank's advice, which eventually brought investment cancellation and after three years the closing down of the company.

Founder F on having well researched and analysed business plan said, “We had a formal written business plan. I think this is absolute necessary if you want to secure funding. For our internationalization we made the plan and research a bit more pragmatic and hands-on". The financing requirements motivated them to analyze their financial and business situation in “Out of box” perspective. Some financing organization has advisory services for the startups they are interested in investing in. It concludes to the idea that external financing may also influence an entrepreneur’s behavior by decreasing their overconfidence bias.

5.4 Institutional comparison

Institutional analysis done through comparing the interview responses of Swedish and German entrepreneurs, which then emerge into the pattern that is comparable through the literature of institutional level support (Baumol, 2010; Landström, 2017). Table 6 shows the comparison of all participants using the combination of different institutional finance supports.
The support from governmental agency plays an important factor on providing external capital on Swedish respondents. Subsidy-based system is accurately applicable and chosen in Swedish startup context (Landström, 2017). Founder A, B, D stated that they use the funds provided by ALMI, a Swedish government agency that giving support to the creation of new ventures. Moreover, they even received multiple funds from the same agency. Other than ALMI, several names have been mentioned as well, e.g Vinnova, Innovationskontoor, and Swedish Energy Agency. The nature of funds offered by the Swedish governmental agencies are usually less complicated compare to other financing alternatives (Vekic & Borocki, 2017). However, other alternatives are also available in the form of equity and credit capital-based investment. One bank (sparbanktiftelsen) has given a special investment support in the form of soft loan for startup B. Though the firm should pay an interest, it isn’t as high as normal and is very competitive to get (Founder B).

The business assistance that the agency provided are also the factors that Swedish founders are looking for, as to grow the business bigger while having the expertise to stand along-side with essential feedback (Founder B, D). The Swedish founders recognize the risk of bringing external investors will lead to the dispossession of control over their business (Founder B). However, most of their experience taught them the risk of unleashing the control at one point of time in the future with the higher purpose on their forethought (Tversky & Kahneman, 1986). The rational of bringing capital in to boost the core business development and performance at times are more emphasized to be able to move forward.
From the Germany side, Credit capital-based system is accurately applicable and chosen in German startup context (Landström, 2017). All German founders chose bank loan on top of their consideration. The credit-based capital is aligned with their high concern on having the full control over equity and decision-making, by which German bank loan took zero percentage of shares while at the same time being able to give special rates for new ventures development (Founder E,F,G). Along with their experience, German founders showed the high level of risk aversion on losing control over its firm (Tversky & Kahneman, 1986). In relation to overconfidence bias, this also support the statement Hayward, Shepherd, & Griffin (2006) that overconfident entrepreneurs tend to have risk-aversion towards diluting their ownership to investors because of their strong personal need of control. This bias tendency was shown on German entrepreneurs. Additionally, in comparison to bank loan, founder E stated that BAs or VCs investors are only accessible for the certain millions of euros. He adds “a capital-intensive type of business that need above 100 million euros would be much more difficult as no German VCs are able to invest such sums.” (Founder E).

Generally, both Swedish and German founders are looking at external investors in the same perception; as for a support to develop its product and scale up their businesses. The consideration of obtaining either equity-based, credit-based, or subsidy-based are mostly depended on how accessible the fund is, and how attractive the investment offer. These aspects are indirectly affecting the entrepreneur’s decision making on choosing the investment form.
6. Conclusion

This section consists of the final part of the study which describes the answers developed throughout the study process in relation to possible explanation for the research question. The practical and academic implications, research limitation, as well as possible future studies are also mentioned.

The objective of the thesis was to analyse on which extent the overconfidence bias affects the financial decision-making process of the growth oriented startup's founders. This objective was derived from the paper Fraser et al (2015). This study tried to understand the possible connection between cognitive bias based financial decisions and capital investment trajectories. However, the authors add institutional factors in order to see the comparison between two entrepreneur’s origins that have been assessed: Sweden and Germany.

To answer the research questions of “How does overconfidence bias affect the growth-oriented startup's entrepreneurs judgment on selecting the alternative financial source options?”, the theoretical framework of cognitive bias (Kahneman & Tversky, 1979) and mainly overconfidence bias from Moore & Schatz (2017) were used in order to see the decision-making process of growth-oriented entrepreneurs, represented by current firm growth stage (Kazanjian, 1988). The empirical data was taken based on a semi-structured interview with 7 Tech-Intensive startup’s entrepreneurs from Sweden and Germany. To answer the second research question on institutional comparison “How do Institutional factors also influence the financial decision-making process?”, the authors use the theoretical foundation by Baumol (2010) & Landström (2017). From the interview, we attained the information on how they consider the financing options; the factors behind the consideration; the accessible investors; and the chosen investors.

As the result of empirical study and analysis, this study showed that there are several positive connections between overconfidence biases and entrepreneurs financing decisions to the firm. Among three forms of overconfidence biases, overestimation (Illusion of Control and Planning Fallacy biases) is the most common biases among entrepreneurs. The firm with overestimation bias’s entrepreneurs tends to receive debt financing capital over other forms. Those with Illusion of Control possession chose bank loan capital investment. This might be shown as the entrepreneurs prefer to keep the control by themselves, thus no part of shares would be given
away. While, those with Planning Fallacy possession prefer to obtain Government fund investment, as the additional assistance and guidance might be helpful to have a better planning and strategy. 

However, the analysis showed that the last two biases: overplacement and overprecision does not have a substantial impact on the examined entrepreneurs. The firms that run by entrepreneurs with overplacement tendency shown the equal decision between debt and equity capital financing. Same condition with overprecision bias, as there was no substantial distinction on the chosen investment between debt and equity as well. The authors also found out that the more biases that entrepreneurs possessed, the greater they chose bank loan (equity financing) as capital source of investment, which was shown in Founder F & G. In general, majority of the entrepreneurs also chose bootstrapping method as addition to personal fund to fulfil their firm’s financial needs.

6.1 Theoretical contributions

These findings contribute to current literature on overconfidence bias in financing behaviour of entrepreneurs in several ways. Firstly, it expands the scope of understanding the impact of specific overconfidence types on entrepreneurs in Behaviour finance literature (Gustaffson, 2009; McCarthy, Schoorman & Cooper, 1993). Then, this paper goes one step further from current understanding in theory of overconfidence impact in overfinancing by linking the specific types of cognitive biases with different financing channels (Hayward, Shepherd, Griffin, 2006; Drummond, 2009).

Eventually, the institutional framework compares how entrepreneur’s preference towards external financing also formed by investor’s availability and trend in their respective environment. Swedish entrepreneur’s firms reaped more benefit from subsidy-based support compare to Germans. Swedish entrepreneurs might as well mix the investment options with equity and credit-capital based funds. Meanwhile, the German founders enjoy the privilege of maintaining their own control in the firms with the greater range of credit-based capital availability in their environment (bank loan).

The study complements the current literature on the role of culture and environment on financial decisions (Bellavitis et al, 2017, Berger & Köhn, 2018). In addition, it adds to current literature
of new empirical examples from German and Swedish entrepreneurial environment and confirms the impact of Institutional support and regulation on selection of financing channels (Basso, Baltar, & Andonova, 2018).

6.2 Practical Implications

Practical implications are also emerging from this study. For growth-oriented startup entrepreneurs, the authors found out that the entrepreneur with the most biases was the one who did not manage to get any fit investment. And unfortunately, the business also could not sustain any longer. Thus, this also shown the importance of entrepreneurs to be considerate of their own biases. Understanding their biases would encourage them to process necessary information to be able to reach a more rational decision and approach on choosing financial sources. Institutionally, this paper helps the entrepreneurs to prepare the investment factors and options that are available in their respective country. For investor’s perspectives, this study will give insight to financial investors (ex. banks, VCs) to look at the startup’s entrepreneurs’ expectations towards investors and how risky are biases affecting the decision taken by the entrepreneurs to the firm where they put their investment on.

6.3 Limitations and further research

This study has reviewed growth-entrepreneur cognitive biases and its relationship with financing decision, along with institutional comparison. However, the authors believe that there are still remaining limitations that can be assessed through the future research.

Deeper examination is needed to analyse the decision-making process of a firm that was co-founded by more than one entrepreneur (ex: the case of Founder F and G). The study relied on empirical data collected only from entrepreneurs from the same gender which might limit the implications of the results. The study would gain more inclusive results with representation of all gender groups. In addition, the participants generational differences might have impact on the study results. More research might be needed for determining the connection between the entrepreneurs financing decision making behaviour and their generational differences. Expanding the scope of the empirical data is worth to consider as well, point of analysis and profound analysis on overestimation and overplacement are also emphasized. To extensively analyse the research question, both quantitative and qualitative approaches might be needed. That can assure higher level or reliability and validity.
References


Marchand, M. (2012), Behavioral biases in financial decision making. Tilburg University.


Dear Mr. [Name],

I am Suci, a Strategic Entrepreneurship Master’s student at Hamstad University. I am currently writing my master’s thesis in Financing Decision of Startup’s Owner.

Currently, I am conducting interviews as part of my research study to increase our understanding of entrepreneurial cognition. My area of concentration is the decision-making process related to the financing options of startups.

The interview takes around 30-60 minutes via Skype/Phone call and is very informal. I am simply trying to capture your thoughts and perspectives on deciding which investors/finance options you chose for your startup.

If you wish, your responses to the questions can be kept confidential. Upon request, you can also see my preliminary questions before the interview date, however some questions can be modified and added during the interview depending on the course of our conversation.

Your participation will be a valuable addition to the research and findings could lead to greater understanding of entrepreneurial cognition and decision-making process of startup/new ventures.

Please feel free to suggest any other date and time that suits you. If you have any queries, please do not hesitate to contact me. I promise to not take too much of your time.

Kind Regards,
Suci Ariyanti

MSc Candidate in Strategic Entrepreneurship for International Growth
Class of 2019, Hamstad University
sucari17@student.hh.se
Tel: 00 00 00 00 00
Appendix 2

The Interview Guide – growth-oriented Startups owner

Title: Impact of Overconfidence Bias on Entrepreneurs Financing Decisions; The case of Growth-oriented Startups in Sweden and Germany
Students: Suci Ariyanti, Hayk Mnatsakanyan

Hej xxx,

First let me introduce myself, my name is Suci/Hayk, a master student from Halmstad University. Thank you for your time and willingness to be interviewed by me. I am currently writing my thesis with a partner who resides in Berlin, so he gathers some data about German startup, and I gather data on Swedish startup (or another way around).

This interview will be recorded and used for the necessity of the study, however once I have finished the thesis paper – I will send it to you and delete the recording. For ethical and safety reason, I would like to put your name and company anonymized in the paper so the information that you’ll share remain confidential.

Let’s start.

Interview questions Respondent: xxx (entrepreneur’s name)

1. Please tell us a brief introduction of (startup’s name), such as age, product, employees, stages, and the motivation to make this company.
2. How many founders have involved from the beginning until now?
3. In which startup stages are you now?
4. How was your company financed in the different stages? Are they a venture-capitalists, or business angels, or government funds?
5. What sources of external investors were the most attractive to you, given how they differ in terms, and why?
6. Who’s taking the initiative and decision for choosing the external investors?
7. How about the other investors (such as VCs/BAs/Government Funds/Personal connection), have you tried to obtain any of that?
8. Did you consider the risk of losing your control when you choose your external finance?
9. How important is for you to control and own the business?
10. Do you look for some material gain or lose (profit/loss metrics) after external finance investment made?
11. Were there other factors involved when you choose the external financing sources?
12. How easy it is to obtain funding in Sweden?

Overconfidence bias related questions

13. Do you think of having well researched, formal, written business plan in the initial stage will help you to attract external investment? Do you have one?
14. Yes. So, can you describe that whether the initial company financial forecasts were realistic or not?
15. Was there a difference between planned and actual time when it comes to fulfilling the financial resources needed for your main projects? Yes / No. Why?
16. During the foundation how much you estimated the probability of the company’s shortage of liquidity?
17. Would you use outside expertise to solved problems related to management/growth? Why?
18. In terms of past performance, have you experienced a failure that makes you realize that you should’ve chosen between: 1) Preparing the Startup better internally, 2) Seeking external assistance to solve problems.
19. Do you believe that you can accurately predict the total market demand for your firm and attract your investors with your prediction? Why?
20. Do you believe that you can accurately predict when a larger competitor will enter the market? Why?
21. Do you believe that you can succeed at making this firm a success with external investment?
22. If your company has used a lot of financial resources involved, what will you do? would you abandon it in later stages of development?
23. If you had experience loss, will you invest in improving the product in order to increase the sales? Or close the company?
24. If the product was profitable, will you do risky investments and change the product to make it more successful?
## Appendix 3

### Illusion of Control

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<th>Illusion of Control</th>
<th>Chosen financing sources</th>
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<tr>
<td>E</td>
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<tr>
<td>F</td>
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### Planning Fallacy

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<td>C</td>
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### Overplacement

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### Overprecision

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<td>G</td>
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### Financing sources

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