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THE FINANCING OF START UPS:

A Survey on the Current State and Challenges in Finland

Master's Degree Programme in Accounting
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ABSTRACT

Prior studies have highlighted the problematic state start ups find themselves in, while acquiring financing. Many of them experience issues while acquiring funding for their business, due to their lacking track record, proof for viability of the business model and lack of suitable investors. While prior studies have examined the financing of small businesses, little research has been conducted with regard to start ups. The intent of this study is to examine the capital acquisition decisions start ups make and the issues they may face in the process.

This study also aims to examine whether certain entrepreneurial or business characteristics affect the outcome of financial negotiations, as well as their capital structure. In analyzing the data gathered through the online survey, this study will employ Spearman's rank correlation coefficient and logistic ordinal regression.

The findings of this study largely differ from prior research with regard to financing sources, difficulties in accessing capital and capital structure. The most important sources of external finance for the start ups in the sample of this survey were angel investors and governmental institutions for equity and financial, as well as governmental institutions for debt. This study finds that having an audited financial statement, intellectual property rights and having received external equity investments best predict the capital structure of a start up. Businesses with no external equity investments, were likely to have lower levels of all other capital classes.

KEY WORDS: Start up, Capital Structure, Financing, Issues, Finland, Survey

1. INTRODUCTION

1.1 Research background and motivation

The importance of small business entities as the pillars of economic growth has been widely acknowledged in prior financial literature. While corporate finance has been well documented and documented, there has been little research into the financing start up businesses. Small businesses are not generally able to access the public and private capital markets that large corporations have access to and are therefore not easily comparable to large businesses in terms of available financing options. (Berger & Udell 1998; Fluck, Holtz & Rosen 1998; Huyghebaert & Van de Gucht 2002)

Most start up businesses can be defined as recently established, growth-orientated and innovative companies that oftentimes has limited ability to create profit during their infancy (Puttonen 2010). In addition to having limited profit generation, many entrepreneurs of start up companies lack the business management skills and knowledge of accessing financing options. Due to the fact that start ups oftentimes are in search of a new and repeatable business model, their reputation and credibility can be much lower than for other small businesses. Furthermore, many start ups may require far larger investments in order to begin operation than businesses with traditional and proven business models.

The lack of ongoing operations, revenue or especially credit history, combined with the volatility of possible earnings and growth make the evaluation of a start up a difficult one. Due to these issues, many start up companies will not qualify to receive bank finance at a reasonable interest rate, if at all (Keuschnigg & Nielsen 2004). Alternative investors, such as venture capitalists, angel investors or governmental funders may agree to carry high risk at an expensive rate of return.

This study is motivated by the will to understand the issues start ups face in the process of acquiring finance and the effect of these issues on subsequent decisions and capital structure. Small business entities largely account to economic growth and it is therefore important to understand the financing needs of small business entities. This knowledge may eventually lead to more suitable policies that will allow for better financing options for start ups and thus possibly contribute to economic growth.

Regardless of all the issues, many start up companies will be successful, and have been able to develop countless innovations that have led to economic growth throughout the years. For example, of the 60 most significant innovations in the United States, over 30 have been made by start up companies. An explanation to this according to Wetzel (1982b) is the fact that small and medium enterprises (SME'S) make 24 times more innovations on every dollar spent on product R&D, compared to large companies.

Start up businesses have been known to be significant employers in sectors that have seen major layoffs. A large number of laid off employees in the 1980's recession in the United States, established small businesses, start ups in the very business sector they were laid off from, thus employing themselves (Van Osnabrugge 2000).

In the recent years, there has been an increasing amount of research conducted on start up businesses. The most notable example of recent empirical evidence can be drawn from the Kauffman Firm Survey (KFS). The panel survey contains data over the 2004-2011 period on 4,928 companies that were founded in 2004. In short, the selected companies were monitored for an eight-year period and were asked to answer questions associated to the sector of business activity, financial structure, and entrepreneur and location characteristics. In addition to these themes entrepreneurs were asked to identify major problems in their line of business. Approximately 36% of all entrepreneurs identified the slow sales or loss of sales as the largest issue, and 28% the volatility of their business. (Sanyal & Mann 2010; The Kauffman Firm 2011)

The second largest issue start ups faced in the 2011 survey was that 20% had their new or renewed credit application repeatedly denied. The 2010 study also reveals that some of the entrepreneurs cited tighter regulations on financing or collateral. In addition, a smaller percentage of 18.1%, compared to 19.2% of previous years, indicated that they did not apply for finance at all, in the fear of being denied. Of all businesses in the sample over 55% had gone bankrupt through the 2004-2011 period, making the survival rate a meager 44.6%. (Kauffman Firm 2011)

Start up businesses go through four distinct developmental phases during their lifespan: (Osnabrugge 2000)

- Seed-phase, during which the entrepreneur has a concept regarding a possibly profitable business idea or product. The idea will need to be proven to work.
- Start up-phase, which is defined as the finalization of product development and the start of marketing. (This phase commonly takes place during the first year of existence).

- Early phase, during which the business begins to sell its products or services and attempts to expand, often without making much profit
- Final phase, which is often called the expansion phase. The business has become profitable and may have the ability to reduce capital borrowing costs through a bank loan and or an initial public offering (IPO).

The study of start up companies has been seen as an individual research area, as the funding required by start ups differs largely from publicly notarized companies. This limits the available financial theories to explain the financing of start ups. (Denis 2004)

However, it is noted that, even though start up finance varies from traditional finance, there are two issues that are universal; Information asymmetry and the principal-agent problem. The theory of start up finance merely differs in these issues in the extent of the problem. (Denis 2004)

1.2 Research purpose, objectives and questions

The main objective of this study is to shed light on financing used by start up companies and to examine possible financing issues affect them. This study's secondary interests lie in examining the capital structure of start ups and whether certain characteristics can predict the capital structure. Other objectives lie in finding out whether there are quantifiable differences in financing options between certain types of start up entities.

While there have been studies on start ups across the world, prior studies have not examined the financial issues faced by start up companies in Finland. This study aims to address and attempts to fill that gap of knowledge, by surveying start up entrepreneurs with a self-completion questionnaire.

At the very beginning of the theoretical approach will be a discussion of the factors that define the corporate landscape in Finland. Secondly in the literature review the study will examine many of the concrete sources of finance start ups. Additionally, this study will elaborate on capital structure theories and the determinants of financing issues of start ups. In the empirical section of this study, it will go through the methodological procedures in procuring the data, which will then be explained and analyzed in more detail.

1.2.1 Primary research questions

This section will introduce the primary research questions, which will be answered through the survey examined in more detail in sections four through five. Following each research question, will be a preview into prior research and expectations for the results of this study.

1. What are the most used forms of finance for start up companies?

The Kauffman Firm Survey was conducted on 4928 small businesses in the United States of America during 2004-2011. The data, analyzed by Robb and Robinson (2010), show six groups of capital sources. The vast majority (75%) have insider equity in some form or fashion, with an average amount of \$40 500. Only 205 businesses out of 4928 (4%) possess any kind of external equity. However, the average amount of external equity for those businesses that received such investments, is over two times the total capital of the average business. This makes external equity an undeniably important source of financing for some businesses. Internal financing is defined as financing that originates from shareholders, entrepreneurs, friends, family or other individuals that are already in close connection to the business. External financing on the other hand may originate from parties that do not have prior contact, stake or other vested interests in the business.

Both insider equity (5%) and debt (10%) seems to play a small role in the capital structure. Turning to external debt, the data show that external debt is the largest financing group of all. External debt was found to be seven times greater than the average amount of insider-debt. Additionally, there are three times more businesses relying on external debt than internal debt. Even in businesses that have received equity financing, through angel investors or venture capital, there is a reliance on debt financing. On average, a business that has received equity investments, still has approximately 25% of its total capital in the form of external debt. The average firm's total capital amounted to \$109 000.

As this study will be conducted on solely start ups, a larger average percentage of equity investments compared to debt is expected. Many start ups may not be able to access bank debt, due to the innovativeness and newness of the business model. Since start ups may need large amounts of capital to begin operations, this study expects to see a larger average total capital.

2. What are the largest issues impeding financing described by start up entrepreneurs?

There are numerous difficulties that start ups face during their infancy. Many of which are concentrated on acquiring adequate levels of financing, in order to begin, grow and maintain operations. These difficulties are commonly caused by capital market gaps in entrepreneurial finance, which are due to the lack of willing financiers for certain businesses.

The OECD (2004) states that start ups based in countries, which do not have a substantial or developed equity market, may be forced to acquire debt financing. Debt finance may not be the most appropriate type of financing for start up entities and may therefore limit their potential or impede financing. Frydman, Khan and Rapaczynski (2015) argue that the venture capital market in Europe tends to favor low-volatility industries, while American venture capitalists seem to favor high-growth industries.

In terms of issues relating to acquiring bank debt, the US-based Kauffman Firm survey (2013) finds the following reasons for credit denial: tightening restrictions on credit approvals (75.8%), insufficient collateral (28.5%) and bad business credit history (40.8%). In study on Swedish start ups by Bjuggren and Laufer (2014), it was shown that 53% of the businesses were denied bank loans due to perceived difficulties. 25.5% were denied on the grounds of insufficient collateral, 13% due to the lack of personal guarantees, 8.5% due not being able to understand the business idea and 6.5% due to the interest rates and terms of debt.

Fluck et al. (1998) discovered in their research that the lack of reputation during start up may cause the business to increase internal financing during its infancy. That is, the lack of reputation impedes them from accessing external finance.

Hyytinen, Pajarinen and Rouvinen (2015) argue that innovativeness of the business has a negative effect in obtaining external finance and ultimately, on survival. Anginella and Mazzù (2015) also argue that innovativeness can be a detriment to the financing outcome for a start up.

This study expects to find the same difficulties in terms of access to bank debt. The difficulties in acquiring equity finance have not been extensively examined in prior studies. This study intends to find out what these difficulties are by conducting a survey on start up businesses.

3. Do financing issues start ups face affect their capital structure?

As a result of difficulties in acquiring capital, small business entities seem to have a significant reliance on debt capital (Van Auken & Neeley 1996). The OECD (2015)

explains that, due to capital market gaps, many firms are forced to increase leverage, even when it would be beneficial for the company to de-leverage its capital structure. Market gaps can be a reason for start ups to be unable to access much needed capital.

Robb and Robinson (2010) add that capital market frictions may cause start ups deviate from their growth potential or from starting up at all. With such frictions, start ups may be forced to acquire finance through informal channels or rely on trade credit.

Fluck et al. (1998) find in their research that due to the lack of reputation, internal financing seems to dominate external financing during infancy. The proportion of external financing increases and exceeds internal financing as the business matures. The research conducted by Bjuggren and Laufer (2014) concludes similarly. In their Swedish sample, they find that internal equity is much more present and important than external debt. Internal equity amounted to 21-100% of total financing for 162 out of 194 firms. They add that internal debt is of almost equal importance than external debt.

Zaleski (2009) suggests that entrepreneurs might favor debt over equity due to the intrusiveness of equity owners. Atherton (2010) argues that another reason for new business entrepreneurs to avoid equity is to maintain control of the company.

Following the previously examined evidence, this study expects to find that businesses lacking reputation or without equity investments, may have proportionately more insider capital and/or external debt. Alternatively, businesses that have experienced difficulties with acquiring external debt may have proportionately more internal financing. The lack of reputation may manifest itself in the form of difficulties in the financing process.

1.2.2 Research structure

This thesis will be divided into six separate sections. The first section introduces the research subject and goes on to provide the research questions, objectives as well as limitations. The second section discusses the theoretical background for the empirical part of the study. The theoretical background includes the corporate landscape in Finland, primary sources and forms of finance that start ups, factors that affect financing decision-making, as well as how they impact the capital structure of start ups. Section three to five will be the empirical part of this study. Section three will include the description of the methodological approach, data collection tools and means of analysis. In section four we will describe the obtained data, which will be analyzed in section five. Finally, in section six will conclude this thesis with final conclusions.

2. THEORETICAL FRAMEWORK

2.1. Business landscape

In order to fully understand the financing of start ups in Finland, this section will discuss the inherent characteristics of the observed corporate environment. An integral source for this section is the extensive 34 country wide research carried out by the OECD in 2015. It reports on the current state of debt, equity, asset-based finance and framework conditions for SME's and entrepreneurial finance in each of the observed countries during the time period of 2007-2013. Although there is abundant data on all of the 34 countries, this study will concentrate only on Finland.

There are underlying differences in how a small and medium business are classified. Under the Finnish classification, any businesses with less than 250 employees are defined as SMEs. In 2012, 99.4% of all Finnish firms were SME's, amounting to 97 290 individual businesses. The majority of these SME's (81.7%) are categorized as micro-enterprises with under 10 employees. Only 620 of 97 290 (0.6%) companies employed over 250 people and were thus classified as a large company. (OECD 2015)

The state of SME lending has been relatively unstable after the beginning of the recession in 2008. New business loans peaked in 2010, but dropped extensively during 2011-2012. The year 2013 saw the recovery in new business loans by a 13.3% percent margin. At the same time, SME lending in general saw a decrease of 38.3% over the period of 2009-2013. (OECD 2015) The OECD's estimations as to the sharp decrease in lending include solvency problems among SMEs, a lowered demand in loans, and stricter credit conditions for banks and lenders.

According to the survey conducted by Statistics Finland (Ministry of employment and economy 2007), 23% of all SME's will need some kind of external funding during the next 12 months of their existence. 84% of these companies will apply for bank finance, while 31% will apply for finance from Finnvera, 15% will apply from other parties, 11% from venture capitalists and 5% from insurance companies. Until 2007 Finnvera was the most significant institution providing debt finance and financial support, but since then its operations have been handed over to TEKES (Finnish Funding Agency for Innovation)

The trends that were visible in 2007 seem to have continued unchanged. In a study carried out by the Bank of Finland (2013a), named the Corporate Finance Survey (Yritysrahoituskysely), it was noted micro-business finance is heavily reliant on bank finance. Roughly 70 % of all businesses that applied for finance, negotiated financing

with a bank. The Bank of Finland (2013b) states that in Finland, as well as in other European countries, corporate finance has been very bank-centered. The second most important source of external finance were Finnvera-backed loans. The businesses that most frequently indicated that they faced difficulties acquiring finance, were micro businesses with a proportion of almost 40 %. Over half of these businesses did not receive financing altogether. The Bank of Finland (2013b) states that, regardless of the imperfections in the SME credit market, the financing conditions for SME's in Finland are above the Euro area average.

The Finnish Business Angels Network (FIBAN 2016) identified that its' members contributed to a record amount of 21M€ in investments in 238 companies during 2014. The amount of angel investments has risen by 90%, from the 11M€ of 2013. When combined with the angel investments made by Finnvera (12M€), the total investment figure would be approximately 33M€. Fiban estimates that, when taking into account all of the investments made by unregistered investors and registered investors, the total business angel activity would amount to 60-70M€.

While there is no specific data on the crowdfunding capital market size in Finland, the European average should represent a fair reference point. The total amount of capital raised through crowdfunding in 2014 amounted to 3.25B€. (Crowdsourcing.org 2015)

As seen above, the equity market in Finland is still, comparatively speaking undeveloped. There are subsequently many governmental financial institutions that offer equity investments to suitable businesses. The OECD (2004) however, states that direct funding by the government rarely is an efficient way to finance businesses, as the government lacks the means to monitor portfolio businesses. More on governmental agencies can be found in sections 2.2.6-2.2.10

The Global Entrepreneurship Monitor (GEM 2009) carries out an annual report on the global social values towards entrepreneurship, entrepreneurial ecosystem and entrepreneurial finance. The report groups countries by economic development, based on the GDP per capita and the proportion of exports of primary goods in all exports. Finland is classified as "innovation-driven" society, which has reached basic national condition-requirements and divert their focus on entrepreneurial framework conditions. In the 54-country large GEM survey, more than 180 000 adults were interviewed with no less than 2 000 per sample. The survey interestingly concludes that in Finland successful entrepreneurs are highly respected (88%), while the majority of people see getting into entrepreneurship as a bad career choice (55%). There are specific advertising and media campaigns in place to promote entrepreneurship in Finland. Interviewees in Finland

exhibited a low fear of failure and perceived the media attention of entrepreneurship (high). The most significant differences between the 2009 and 2014 sample was the rise of perceived risk of failure (26% to 36.8%). (GEM 2009)

It is worthwhile to compare the start up finance market to the US market, in order to gain an objective view on the performance of such Finnish and European capital markets. According to Frydman, Khan and Rapaczynski (2015), there are national differences between Europe and the United States that shape the early stage capital market and thus entrepreneurial equity financing as a whole. The main differences they discovered are as follows:

Firstly, the European capital market is much smaller and much more scattered than in the United States. Fundamental attitude differences with respect to entrepreneurial finance are evident in the tendency for the European capital market's focus on buy-outs instead of early stage investments. While a large number of US venture capital funds are supplied by relatively passive and patient pension funds, in Europe over 30% of venture funds come through banks and financial institutions, many of which are in direct ownership of venture capital firms. European venture capital firms tend to be therefore staffed by their own bureaucratic and conservative personnel that prefer safe and less speculative investments. This creates an inherently inefficient venture capital market, which has a tendency to supply early-stage capital to low volatility industries, instead of high-growth industries. (Frydman, Khan & Rapaczynski 2015)

The US-based venture capital firms tend to be more entrepreneurial in spirit, when compared to venture capital firms in Europe. In addition, venture capital firms in the US are commonly formed as independent limited liability partnerships. Instead of merely making an investment in the target business, American VC firms will help build necessary channels and contacts and operational guidelines (Frydman, Khan & Rapaczynski 2015)

These differences may be a factor in the large size difference in venture capital markets between Europe and the United States. During Q1-Q3 of 2014, Finnish start ups managed to acquire approximately 77 M€ in VC investments, while US start ups were able to receive \$47,3B in the same time. (The Federation of Finnish Enterprises 2014; CBInsights 2014) National differences have to be taken into consideration, but even when weighted by the respective populations, US businesses received investments in a ratio of \$148.3 per capita, while Finnish ones received only 14.5€ per capita (Federation of Finnish Enterprises 2014). The European average is considerably lower at 4.8€ per capita (European Private Equity and Venture Capital Association EVCA 2015).

2.2. Sources of financing

The point of view of this section will be linked to the definition of start ups expressed in the introduction. The term start up is currently very loosely defined and is used for various types of businesses. However, during the following sections, the start up business will be assumed to be a newly established, innovative business that requires considerable amounts of financing to begin its operation in the intended scale. These start ups can range from manufacturing businesses to business that provide services, but still may require large initial investments.

The importance of finding ways to lower operational costs during the development is at its highest. During the initial start up, lowering costs may eliminate or postpone the need for long-term external financing. The act of lowering operational costs in the developmental phase by using creative ways or benefitting from customers' and supplier's resources can be referred to as bootstrapping. Entrepreneurs may try to lower expenses by such tactics, as buying used equipment instead of new ones, withholding the entrepreneur's salary and deliberately delaying payments, in order to be able make due with tight financial constraints. Winbord and Landström, in their 900 small business wide survey, identified a total 32 individual bootstrapping methods used by many SME entrepreneurs. (Winbord & Landström 2000; Ebben & Johnson 2005)

At the beginning of the life cycle of a start up company, funding is mostly gained through existing social ties, friends, family or professional connections. In some investment contracts the transference of an equity share to the investing party may be needed. Kotha and George (2012) argue that the prior social connection allows for more certainty and trust in the desired behavior of the business partner, in the case of equity transference. Investors, to which the entrepreneur has close social ties to, are more willing to contribute to the company without the guarantee of full repayment.

According to the survey conducted by the Arthur Andersen Enterprise Group and National Small Business United in 1997, 34% of the surveyed start up entrepreneurs used their credit card account during their seed stage. Entrepreneurs have been known to open up numerous credit card accounts in order to receive quick funding for business expenses. Most financial institutions will expect entrepreneurs to take part in initial funding, in order to commit their interest in the company. Institutions want to make sure that key figures have a personal investment in the company. This may provide a further incentive for the management to act with the best interest of the company and investors. (Benjamin & Margulis 2005: 87).

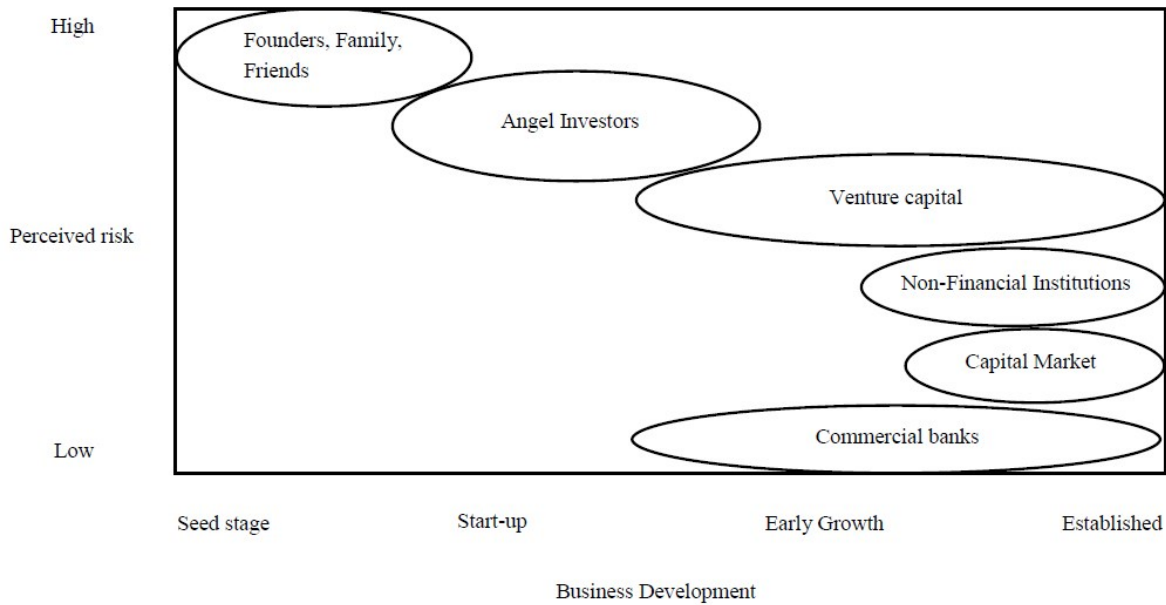
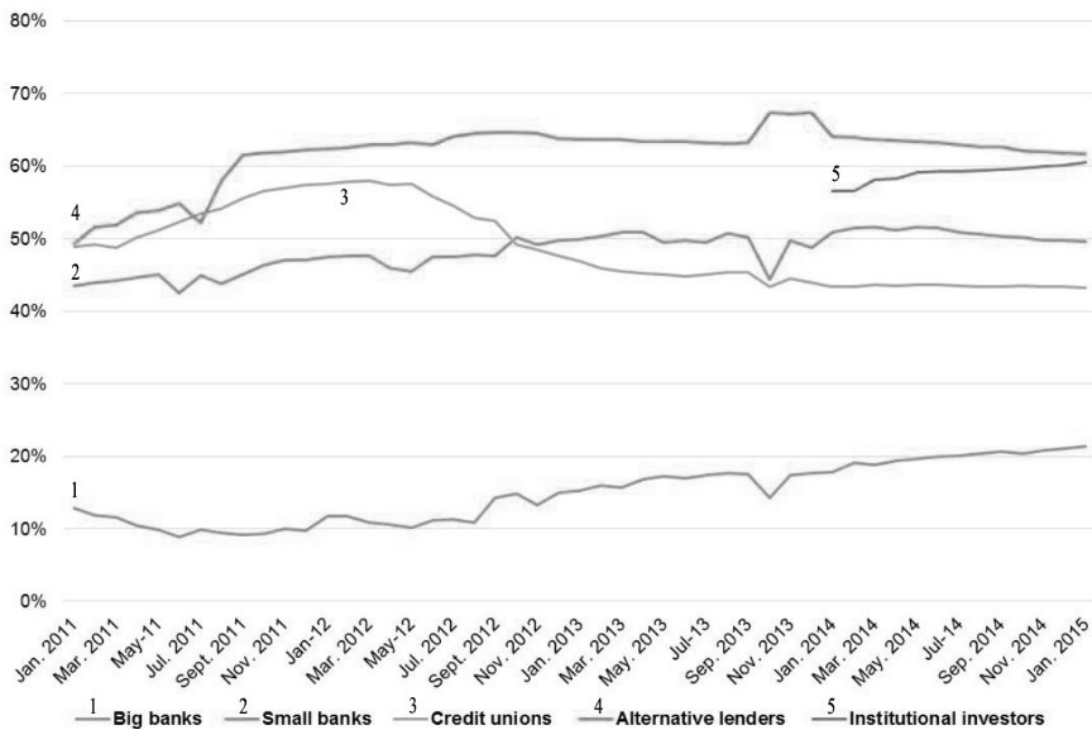


Figure 1: Suitable investors at various developmental stages (Osnabrugge & Robinson 2000)

Certain investors seem to prefer certain types of companies as investment opportunities. Unofficial investors such as angel investors tend to prefer start up-companies that possess highly innovative and untraditional products or services. Financial institutions favor already established, stable businesses that have well-selling, known products. These institutions traditionally tend to prefer start up-companies that have highly experienced entrepreneurs. It should be noted that production technology carries little relevance in the positive financing decision, contrary to common belief. (Nofsinger & Wang 2007)



According to the TradeUp Fund and NexTrade Group (2015), the lending approval rates of small businesses are as follows; “Big banks” as in banks with over 10 billion dollars in assets had an approval rate of 21.3%, an improvement of 3.5% from January 2014. Small banks’ approval rate was 49.6%, which is slightly less compared to the 50.9% of a year before. Alternative lenders approved 61.6% of all loan applications, constituting a decrease of 3.5% compared to January 2014. These alternative lenders will be discussed in the following sections.

2.2.1. Angel investing

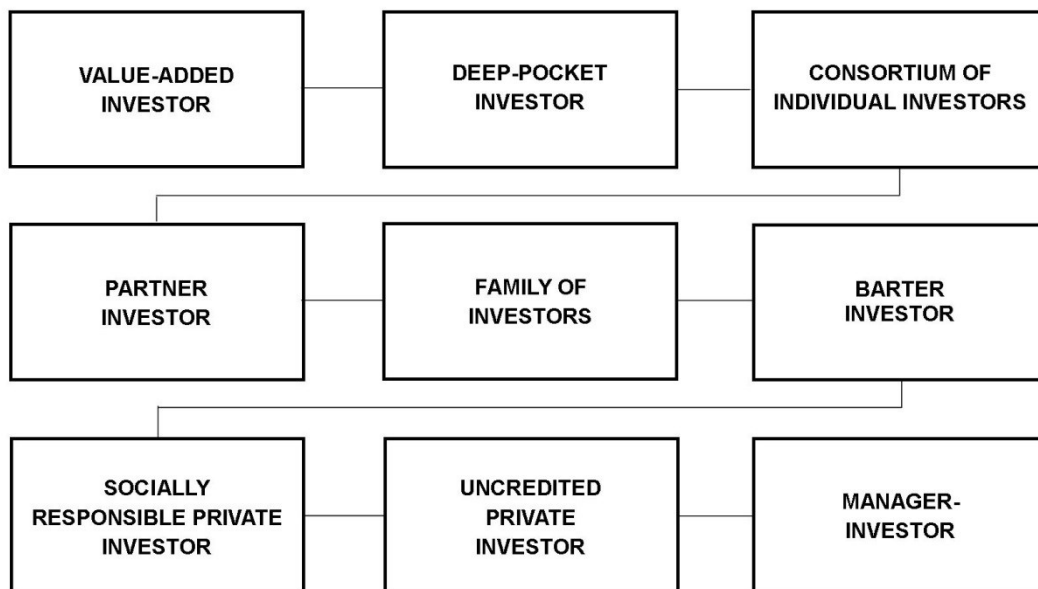
Angel investors can be classified as affluent individuals that invest in high-risk business start ups. These individuals tend to have a background in business and entrepreneurship prior to becoming an angel investor. The terms and amount of the provided finance vary case to case, as they are the end result of the negotiation between the angel investor and entrepreneur. Elements such as the valuation, perceived information asymmetry and moral hazard also affect the outcome. Due to the unofficial nature of angel investing, there are no existing communication channels or means of bringing potential investors and investees together.

The main incentive for the angel investor to provide funds, lies in the appreciation of the purchased shares. Angel investors generally step in, when all available funds belonging to the entrepreneurs and their close connections have been exhausted. Additionally, angel

investments usually take place before any negotiations with venture capitalists begin. (Prowse 1998)

Angel investors are of most importance to start up businesses, due to the fact that the required funding, usually ranging from 100 000€ to 500 000€ is normally too small for any venture capitalist to be interested (Van Osnabrugge & Robinson 2000, 63). According to Posner (1993), angel investors are responsible for over 44% of all investments in companies with revenues under \$3 million. Yet they only supply 4% of all external investments in businesses with revenues over \$10 million dollars.

As a group of people, angel investors are a very diverse one. Most of them have a prior experience in business, through which they usually accumulate their wealth. Angel investors can be divided into two groups: Active and passive ones. The defining characteristic between these two groups is the level of involvement the investor has in the business. Active angel investors take part in the businesses activities and try to help the progress of the business through their vast contact network. A passive angel investor in turn does not take part in the business affairs and the sole motive for investing is profit. (Prowse 1998)



Benjamin & Margulis (2005) classify the vast array of angel investors in the following way:

- **Value-added investor**
 - is an experienced investor, who most commonly has a background in banking or venture capital. Usually makes investments ranging from \$50 000 – 250 000, either in debt or equity.
- **Deep-pocket investor**
 - is a person that has recently sold their business and wants to invest in companies in the same line of business. They are after an annual profit of 50% and invests \$50 000 – 100 000 a few times a year.
- **Consortium of individual investors**
 - is an informal consortium of 3-6 angel investors that do not always invest at the same time. The consortium has experience in start up investing, but are more passive than others. Investments range from \$50 000 to 500 000.
- **Partner investor**
 - is a “buyer in disguise” that invests in order to receive a deciding role in the business. I.e. Presidency. This investor will generally invest between \$250 000 and 1 000 000.
- **Family of investors**
 - This investor experienced member of a family, who invests on behalf of the family in a start up for generally a short period of time. The initial investment is between \$100 000 and 1 000 000.
- **Barter investor**
 - A barter investor integrates himself early on in the businesses life cycle and oftentimes offers items instead of a monetary investment. This investor values a capable management and will invest up to \$250 000.
- **Socially responsible private investor**
 - This investor will only participate in businesses that possess high moral values or strive to eliminate social problems. The investments are oftentimes large in size.
- **Uncredited private investor**
 - Compared to other angel investors, this investor is far less experienced and will invest in seed-stage start ups. Investments are usually under \$25 000 and duration of the investment is 3-5 years.
- **Manager-investor**

- A manager-investor is a top management member or former business owner, who buys himself into a new job. This investor is looking for a long-time participation in a slightly more advanced company. Investments range from \$100 000 to 250 000.

(Benjamin & Margulis 2005: 141-179)

Despite the importance of angel investing, it is stigmatized as a very inefficient and unofficial source of finance, due to the lack of predetermined communication channels. According to Van Osnabrugge and Robinson (2000), many angel investors have reported that if more interesting start ups came to their attention, they would be willing to invest in excess of 3 times the value of their current portfolio. Another explanation to the friction in the market is that the investors prefer to stay anonymous to the general public. An angel investor does not want to become known for being one, as it could increase the amount unwanted solicitations from start up entrepreneurs. Another reason is simply that angel investors do not receive enough propositions that would fit their portfolio. Due to the issues stated in this section, angel investors and investees encounter each other randomly and therefore the full potential of the market is not being used. (Van Osnabrugge & Robinson 2000: 46-47)

2.2.2. Crowd funding

Crowd funding is an internet-mediated means of collecting fund through an unlimited group of small investors. It is a way of receiving funding for a project or even a start up business from large amounts of non-professional investors that each contribute with small monetary investments (Schwienbacher & Larralde 2010). The amount of raised funding depends to a great extent on the size of the project and the objective the project administrator has set. Generally, the amount of funding received does not exceed 1 000 000€. The same principles that govern debt and equity based funding apply to crowd funding as well. Mollick (2014) states that the projects that signal a higher quality, have a higher probability to receive funding.

In essence, crowd funding is organized through various websites that provide the founders access to a vast number of funders by placing their business or project plan out in the internet. Of all 50 businesses that received the highest recorded amount of funding on Kickstarter, 45 are still operating. (Mollick 2014)

Crowd funding can differ from debt or equity financing especially in terms of investor compensation. There are 3 types of approaches with regard to investor compensation. In

the first approach the investor is given a small equity share. This method is however highly regulated and makes up only 5% of all crowd funding investment. Another variation of the first method is to offer some sort of return to the investment, i.e. return on a loan. The second method promises no return or benefit to the investor. This is common practice for projects or businesses that promise to alleviate social or environmental issues. Funders with philanthropic ambitions generally are the ones to participate in such returnless investments. The third and last method is to offer a non-monetary reward in return to the investment. Compensations range from being credited in the project, to being allowed to access or buy the product produced by the project earlier than others. (Mollick 2014)

According to Schwienbacher and Larralde (2010) approximately 80% of all projects offer their funders monetary return or a free sample of the product made possible by the project. Moreover, crowd funding can serve as an effective means for marketing. A business that's purpose for the project was to launch a product, can through crowd funding gain valuable information on the demand of the product. Crowd funding can furthermore engage potential customers to becoming investors.

Crowd funding appears to have a convincing effect on other possible financiers as well. For example: Pebble "Smart Watch" had been rejected for venture capital prior to having a successful project on Kickstarter, but after raising capital with the crowd funding project, the venture capitalist was persuaded to invest. (Mollick 2014)

According to Schwienbacher et al. (2010) crowd funding is a viable option for finance, if the business meets these qualifications:

- **The business is in need of a small amount of seed capital only.** The legislation across European countries restricts the amount of shares a business can issue and therefore large amounts of capital cannot be raised without large individual investments. There are however businesses that have bypassed the legislation.
- **The project has to be innovative and interesting to the public.** Because the compensation is rarely monetary, the investor has to have other interests in the project
- **The business has to be ready for openness or at least ready to listen to the opinions of others.** Potential investors want to be listened to and taken into consideration in the course of the project.
- **The business has to be willing to communicate with investors using the internet and social media.** Communications can be maintained through other channels as well, but at higher a cost and with more time spent.

2.2.3. Bank finance

This section will discuss bank finance primarily in the context of SME's, as there is limited public information on start up finance. The theory however applies to start up businesses, as they are an inherent part of SMEs. According to globally conducted studies, bank finance is the most common source of financing for SME's (Beck, Demirguc-Kunt & Maskimovic 2008). The SME classification consists of businesses that employ under 250 people, have a turnover of 50 million and book value of 43 million at its highest (European Commission 2013). In research carried out by Beck et al. (2008) the perception of the term SME in the point of view of 91 banks in 45 different countries was studied. The participants were asked to classify SME's in one of the following criterion: revenue, book value, or employee count. The findings revealed that 85 % of the interviewees perceived a SME as a business with revenue ranging from \$200 000 to 4 000 000.

Åsterbro and Bernhardt (2003) researched the survival of US-based start ups that received financing between 1987 and 1991. Based on their research, there is a negative correlation to be found between receiving bank debt financing and survival, which indicates that start ups that received bank finance fared worse and were more likely to go bankrupt than start ups with other sources of financing. Nonetheless, the businesses that received bank finance had higher revenues at the beginning of their life cycle than their counterparts. Alternatively, receiving debt financing from a bank can be seen as an indication to the competence of the entrepreneur, as there was clear negative correlation between receiving bank financing and the level of education of the entrepreneur. Åsterbro et al. (2003) additionally discovered a definitive positive correlation between being financed by close social contacts and survival.

However, receiving bank finance can be a defining factor in predicting survival in two ways. The first factor has to do with the increase of credibility, as receiving bank financing is an indication of good financial health. For instance, receiving financing from friends or family does not increase the credibility of the company, as friends or family are not likely to screen businesses as strictly as banks. The second factor is the fact that receiving financing eases on the financial constraints a start up experiences. Nevertheless, there is apparent adverse selection with bank financing, due to the possible inability of banks to evaluate the financial state of a start up. (Åsterbro & Bernhardt 2003)

The nature of financing issued by a bank may depend on the size of the bank. In previous research, it has been noted that banks smaller in size are more probable financiers to start ups, due to their possibility for the entrepreneur to form a relationship with the bank. Relationship lending refers to the way a bank gains knowledge of the SME through the

use of locally available knowledge and the relationship and trust gained with the entrepreneur. Smaller banks are capable of having a closer and more continuous ties with the entrepreneur and by doing so, are able to decrease information asymmetry. (Beck, Demirguc-Kunt & Maskimovic 2008)

Most research to date has discussed bank finance in the context of relationship lending, because of the expansive empirical evidence available to researchers. Recent research however has had conflicting findings as to the competence related to the size of the bank in start up financing. According to Beck et al. 2008 larger banks have an advantage in start up finance, as the lending process is governed by the arm's-length principle. Arm's length in most research refers to the independence and equal footing of the participants in the financing negotiations. The lack of a particular relationship allows the financier to base their judgement on purely financial information, without the influence of social or local knowledge. A focal characteristic for arm's-length lending is the fact that most financing applications are done electronically and in person at a bank office. It is worth noticing however that ultimately the criteria for financing are identical for banks using either one of the mentioned evaluation methods. (Agarwal & Hauswald 2007; Beck et al. 2008)

Loans issued using the arm's-length evaluation are less frequently available, but at lower interest rates. Banks have to use, both private and public financial information in their decision-making and therefore are forced to compete with other banks. The competition between banks can lower interest rates, increase adverse selection and may cause unprofitable business to be unable to repay their loan in a timely manner. Consequently, this induces credit losses in the bank, and may cause them to hesitate in issuing similar future loans. Banks using relationship lending in turn use their non-financial information and can issue a loan with a higher interest rate, but with more assurance. (Agarwal & Hauswald 2007)

As reported by Agarwal and Hauswald (2007); the size, profitability, age or ability to give collateral of a business do not have an effect on an SME choosing between relationship and arm's-length lending. However, the further away a business is situated from a bank's office, the more probable it is for the business to choose a bank using the arm's length principle. Furthermore, the findings of Agarwal and Hauswald (2007) indicate that the longer a business has been a client of a certain bank, the higher the probability is for the bank to make a positive financing decision.

2.2.4. Online non-bank financing

Online Non-Bank lending refers to the digital platform that allows borrowers to access high speed debt finance at a higher approval rate than in traditional banking. As the name suggests, many of these non-bank lending transactions take place in the internet and in order to assess the credit worthiness of the borrower, the lender uses propitiatory analytics, such as owner credit records, social media feedback and other non-financial algorithms (TradeUp Capital Fund & NexTrade Group 2015). The proper evaluation of the borrower though these unconventional means are vital, as most loans are not secured by collateral (Mild, Waitz & Wöckl 2015).

Table 1: Examples of Online Non-Bank firms (TradeUp Capital Fund & NexTrade Group 2015)

	Online Balance Sheet		MarketPlaces		P2P	
	OnDeck	Kabbage	Fundera	Biz2Credit	Funding Circle	Prosper
Instruments	Loans - direct	Cash advance to buy inventory, equal monthly transfers	Array of loans, lines of credit, and other instruments - loan request will be matched to the lending criteria of our network of lenders, including other platforms	Array of loans, lines of credit, and other instruments - loan request will be matched to the lending criteria of our network of over 1,200+ lenders	Market place/ P2P	Direct Loans
Amount	\$5,000 - \$250,000	\$500-\$50,000	Up to \$1 million	\$5,000 - \$1 million	\$25,000-\$500,000	\$2,000-\$35,000
Terms	3 – 18 mo (average 6 - 9 mo)	Flexible	Varies	Varies	24-60 mo	36-60 mo
Interest Payment	15% (avg) Daily	2-10% in the first Monthly	Varies Varies	Varies Varies	9-21% Monthly	6.73-35.36% Monthly
Sector	Over 700 different industries, including restaurants, retailers and other service	Various	Various sectors and segments	Various sectors and segments (women, veterans, etc.)	Small Businesses	Small Business/Personal

Table 1 reports on the various online non-bank lenders and the type of financing they offer. Table 1 shows that the types of tech-based online non-bank lender fall into three categories. Companies such as OnDeck and Kabbage raise capital from institutional investors for themselves and then distribute among suitable small businesses using non-financial risk scoring algorithms (Mills & McCarthy 2014). The total amount of loans issued by these lenders is estimated at \$1.5B as of Q3 of 2013 (TradeUp Capital Fund & NexTrade Group 2015). Secondly there are so called online marketplaces, such as Fundera and Biz2Credit that connect borrowers with a wide array of banks and other newer kinds of financiers.

Lastly, peer-to-peer lenders, such as Lending Club, Prosper and Funding Circle are in the business of connecting prime and super-prime quality borrowers with consumers and suitable institutional investors (Mills & McCarthy 2014). The estimated size of the peer-

to-peer loan market is \$4.78 billion as of Q4 2013 (TradeUp Capital Fund & NexTrade Group 2015).

In case of P2P the value proposition to the lenders is two pronged. Unbankable borrowers, meaning borrowers with low credit scores are drawn to the P2P platform due to the lack of required collateral. In addition, borrowers are able to acquire loans with lower interest rates as conventionally. As to the value proposition to investors, some P2P lending businesses have been claiming annual interest rates of over 10%, which are considerably higher than interest rates offered by banks. Consequently, many P2P lending businesses have attracted the attention of large institutional investors as well as hedge funds. (Yum, Byungtae & Myugsin 2012)

Mills and McCarthy (2014) suggest that the absence of regulations concerning online non-bank lending could lead to the next sub-prime lending crisis. An inadequate evaluation of credit risk can be a threat to financial system, as seen in the crisis of 1929 and 2008. (Mild et al. 2015) However concerns regarding the lack of a regulatory entity most commonly stem from traditional and regulated institutions that are concerned with the growing online market (TradeUp Capital Fund & NexTrade Group 2015). Large banks and credit card companies are naturally those concerned with the development and have consequently started patterning up or acquiring new online non-bank lenders to counteract this (Mills & McCarthy 2014).

2.2.5. Venture capital

Venture capital is a central part of start up financing. Companies associated as the largest current corporations (Microsoft, Intel) today have procured their seed capital from venture capital funds (Bettignies & Brander 2007). The decision to seek capital through venture capital often originates from the unfeasibility and difficulty of procuring bank finance, due to low profitability and an insufficient amount of collateral. Prevailing issues in banking, such as high information asymmetry and agency costs can be eliminated efficiently in venture capital. (Popov & Rosenboom 2013)

Venture capital is defined as the act of providing early-on capital for growth orientated, start ups, in exchange for equity shares. Venture capital investments are commonly high in risk, but offer a high possible profit in return. The nature of the provided capital can range from convertible bonds, to option loans and the return expectancy can be from 30-70% annually. (Lauriala 2004: 16–22)

Roughly 80% of venture capital is sourced through limited partnership funds that intermediate the capital from various other financial institutions, such as bank holding companies (Berger & Udell 1998). Venture capital differs significantly from other types of investment activities in the sense that some venture capital investors intend to have an active role, for instance as a board member or business advisor. Other types of investments are frequently passive and do not come with guidance or advice. In addition, the duration of these investments is usually predefined for a certain amount of time, for example 10-13 years, after which time the investment is liquidated. The largest difference to stock exchange investments is the low liquidity of venture capital investments, as they are usually always made in unlisted businesses. (Lauriala 2004: 22–23)

According to Lauriala (2004: 30–32) venture capitalists perceive the following factors as important in small businesses:

- The experience and background of the founders
- Management or team
- Targeted markets
- Knowledge on the markets and business plan
- Plans on market entrance
- State of capital markets and economy

Furthermore, venture capitalists perceive a skilled management with business sense and commitment to the company to be vital. Knowledge on the targeted market and understanding the competitive landscape further increases the valuation of the company. Market entrance expresses the knowledge acquired from customer feedback, analyzing which can indicate whether the product portfolio is relevant to the market and thus how smooth a possible market entrance may be. The state of the capital markets and economic situation refer to the willingness to invest – during booms venture capitalists are able to liquidate their previous investments and consider new investments. All of the mentioned factors play a role in the valuation of the company in a venture capitalists point of view.

Acquiring funding through the means of venture capital can prove difficult to some start ups, as venture capitalists seem to prefer larger investments. This is because due diligence, auditing and assurance costs account for a large proportion of a smaller investment. Van Osnabrugge and Robinson (2000: 25) state that, for example an investment of 5 million, is far easier to gather than an investment a fraction of it.

2.2.6. Financial institutions unique to Finland

The Finnish government offers a wide range of publicly available loans and financial support. This section will discuss a few primary sources of finance for start ups and other SMEs alike. The most significant governmentally supported financial institutions issuing finance are Finnvera, Tekes and ELY-centers. The purpose of this section is to analyze these institutions in terms of issuing seed capital, even though other smaller investments or assistance may be available to an entrepreneurial business.

Why should many start ups be financed with public funds? According to Hyytinen and Toivonen (2005) the imperfections found in private financial markets may constrict the supply of finance and therefore limit the growth of entrepreneurial business. The societal benefit to be gained from the product development conducted by start ups may eventually exceed the utility of the individual business. In essence, significant societal innovations may be left undone if not financed with public money.

2.2.7. Finnish funding agency for innovation (TEKES)

Out of all public financial institutions, the most important in the point of view of a start up is TEKES, which specializes in providing finance for starting up a business, product development and international expansion. TEKES primarily funds under 6-year-old companies on a project-basis. Starting in 2004, TEKES has provided start ups with finance that covers up to 80% of all costs related to establishing a new business. The maximal amount of contribution is 100 000€ during the first stage and 200 000€ during the second stage. (Ministry of Employment and Economics 2007)

The framework program “Horizon 2020” launched by the European Union, will support European research and investment undertakings with 70.2 billion euro during 2014-2020. The objective of “Horizon 2020” is to create growth and new jobs in Europe, as well as improve the state of European companies within global competition. In Finland, this framework program is administered by TEKES. (TEKES 2014)

In 2013, TEKES provided finance in excess of 577 million €, of which 133 million € were directed towards a total of 680 entrepreneurial businesses. (TEKES 2013)

2.2.8. Finnvera

Finnvera is a Finnish government-owned financial institution, the primary purpose of which is to finance Finnish businesses and contribute to their domestic and international commerce. Finnvera allocates its finance especially to businesses in their seed and growth stages and to support the export of their products and services. Finnvera however will not act as the sole financier to a company and will instead share the risk with an array of other investors, such as financial institutions and funds. (Finnvera 2014)

The financial products provided by Finnvera range from debt financing, to venture capital and export support. A product intended for entrepreneurial businesses is the development loan, which is intended to be used on research, product development, marketing and other processes that develop the prerequisites for operations. The maximum amount of issued finance to any one entity is 400 000€ and 75% of the total cost of the project for a duration of 5 years. (Ministry of Employment and Economics 2007)

In 2005 Finnvera provided domestic financing worth 895.3 million euro, of which 405.8 million was in debt finance, 425.6 million in domestic sales guarantees and 63.9 million in export guarantees. (Ministry of Employment and Economics 2007)

2.2.9. ELY-centers

During 2010, ELY-centers, which stand for economic development, transport and environment centers, were founded in 15 locations around Finland (Puttonen 2010). The ELY-centers are locally responsible for governmentally mandated enforcement and development tasks, but also for offering local businesses with development and financing services in export, international relations, technology and innovations. (ELY-center 2012).

The predecessor to the ELY-centers, TE-centers were able to provide Finnish businesses 188 million € in form of financial support. 119 million € of that was supplied in the form of development support to a total number of 1568 businesses. TE-centers offered in excess of 30 different service products to local businesses, but it is however notable that the significance of these services to a business was considerably lower than the services offered by TEKES and Finnvera. (Puttonen 2010)

2.2.10. Issues and perception of governmental finance in Finland

According to the study carried out by Puttonen (2010) on behalf the ministry of employment and economy, financing offered to start up companies by the Finnish government is at an adequate level. Regardless of the sufficient financing options, the array of governmental financial instruments and products is seen as confusing too many entrepreneurs, who may not possess professional experience in finance.

Puttonen (2010) states that this is partly due to the fact that new financial instruments and products have been launched every year, without discontinuing the previous ones. Furthermore, the presence of governmental finance in the financial market is so dominant that it inevitably overshadows private financing and thus reduces the number of private entities offering financing for start ups in Finland. The governmental institutions that offer seed capital often are required to make profit and consequently directly compete with privately owned institutions.

Puttonen (2010) proposes that the government's role in start up finance should be diminished by privatizing a large part of the institutions offering governmental finance. In addition, each financial institution should be allocated certain financial instruments. Finnvera could be responsible for debt financing, whereas TEKES could issue gratuitous finance and finally Finnish Industry Investment company could act as a venture capitalist. This would simplify the choices and stop the competition between government agencies.

2.3. Factors affecting financing

Start up entities generally face issues in acquiring finance. The scale of business and newness can render some otherwise viable financing sources unavailable. These businesses are assessed with other kinds of non-financial information, compared to large public companies. Qualities derivative from the entrepreneur may play a significant role in the investors assessment of the business. Individual entrepreneur qualities may signal the viability of the business, perception of risk and preferences towards control. (Cassar 2004)

The following sections will discuss the factors or issues related to obtaining financing in the context of start up and other small business entities. Start up businesses and other small businesses have similar issues in financing needs and will be therefore analyzed simulantenously.

Zaleski (2009) hypothesises that there are three key factors that affect the credibility of small businesses:

1. **OFFICE** - Having an office or work space specifically for business purposes can issue credibility. These businesses are more likely to acquire external finance than those, who operate from their private residence.
2. **PRODUCTS** - Businesses with tangible products are more likely to gain external equity than those, whose business it is to offer services. Firms that offer services in addition to products are more likely to acquire equity than those, who only sell products.
3. **ADVANTAGES** – Businesses that possess a competitive advantage are more likely to gain equity investments than those who do not. Competitive advantages can for example include patents, trademarks or copyrights

The innovative quality in a start up businesses may be a considerable factor in the length of its life span. In prior studies, innovativeness has been thought to lead to the increased likelihood of survival and other positive effects regarding competition, market power, production costs etc. In contrast to prior studies, Hyytinen, Pajarinen and Rouvinen (2015) argue that innovativeness has a negative effect in obtaining external financing and ultimately, on survival. Hyytinen et al (2015) additionally find that entrepreneurs of innovative businesses may have an exit plan in store and may inflate the risk level in order to achieve the exit. Anginella and Mazzù (2015) also argue that innovativeness can be a detriment to the financing outcome for a start up.

2.3.1. Entrepreneur-specific factors

The entrepreneur can serve as a major point of reference for credibility, when a business cannot be evaluated through traditional valuation methods. (Huyghebaert & Van de Gucht 2002; Cassar 2004) Kotha and George (2012) find that entrepreneurs with prior start up experience are more probable to raise finance from professional and personal sources, compared to those who have no prior experience. Entrepreneurs with specific industry experience however seem to raise more professional financing up to a certain point, after which it decreases. Zaleski (2009) finds that entrepreneurs who establish a business in the same industry they have experience in, do not increase the likelihood of acquiring external equity. Entrepreneurs changing industries, however tend to see the opposite happen.

Zaleski (2009) contends that there are quantifiable qualities between entrepreneurs that may affect financing. It is hypothesized that for example educational achievements may offer investors credibility. Evidence of this is the fact that new entrepreneurs that possess an academic or professional education are more much more likely to receive external equity than others. The effect of education is not indefinite however, as higher levels education seems to have a declining effect on obtaining external finance. In addition,

certain demographic groups such as women or minorities are less likely to receive external finance than Caucasian males.

Robb and Robinson (2010), based on the Kauffman Survey Data, argue that entrepreneurs with previous start up experience and/or a higher level of education were more likely to acquire debt finance than their unexperienced or uneducated counter parts. Prior experience may also allow the entrepreneur to provide more realistic forecasts, as most entrepreneurs tend to be overly optimistic. Realistic forecasts consequently portray credibility to external investors (Zaleski 2009). Entrepreneurs generally have the desire to maintain control over their business (Atherton 2010). By giving investors an equity share, entrepreneurs may fear that investors become intrusive in the business (Zaleski 2009).

2.3.2. Theories of start up financing

Prevalent factors such as information asymmetry define the issues in financing start ups, as small business entities are not able effectively convey their quality with publicly available information. That is, the obtainable information is private to a great extent, which may lead to these business entities to face difficulties in building a good reputation. The lack of a good reputation consequently can be detrimental to the financing of a start up. (Berger & Udell 1998)

Financing issues faced in the financial market affect the actions of both investors and entrepreneurs, as well as cause unexpected expenses. As a result, these issues may be responsible for the delay or cancellation of countless funding decisions.

2.3.2.1. Information asymmetry

Information asymmetry relates to the information advantage of the entrepreneur or management that is gained during the close contact with the company. This information advantage may lead them to act against the best interest of shareholders or investors. For example, the management may use their better knowledge of future cash flow and investment opportunities for personal monetary gain, instead of maximizing the company value. Asymmetric information may lead to higher agency costs, as creditors are liable to increase the required rate of return or lower the amount of credit if they are not able to monitor the company adequately. This in turn may cause the company and debt valuation to diminish.

The information asymmetry between start up entrepreneurs and financiers is undoubtedly large, as the entrepreneur by default considers the company value to be much higher than

the creditor, due to better knowledge of future expectations. According to Nofsinger and Wang (2011) potential investors try to counteract this information asymmetry by forming a social tie to the start up. A social tie changes the nature of the discussion to be more equitable and gives the investor information on the entrepreneur's skill and character, which can play a vital role in the success of the start up company.

Garmaise's (2001) empirical findings in contrast, suggest that the information asymmetry in the context of new entrepreneurial businesses is exactly opposite, as described in prior literature. The information advantage is in the investor's favor, not the entrepreneur's. The extensive knowledge and data accumulated through participating in the financing of previous businesses, may help such investors to have an upper hand in evaluating the entrepreneurial entity and entrepreneur themselves.

An audited financial statement can serve as a way to increase the quality and reliability of the business, thus decreasing information asymmetry. In a small business context, where auditing may not be legislatively required, voluntary auditing may significantly increase the amount of financing and overall operating performance. This is not only due to the value provided by the audit itself, but the positive information that the creditor can observe from a voluntary decision to seek an audit. (Kausar, Shroff & White 2016)

The decision to voluntarily subject themselves to an audit can be also understood as a way for low-risk firms to differentiate themselves from high-risk firms (Kausar, Shroff & White 2016). An audited statement after all, gives an auditors opinion on the risk characteristics of a firm to the lender without bias. For most large businesses, such information cannot be gained through the choice to seek auditing, as it is generally mandated by law around the world (Dharan 1992).

Under the Finnish Auditing Act (Finlex 2015), an auditor has to be chosen if two out of three following conditions are met during the last two previous fiscal years; (1) A balance sheet total of over 100 000€, (2) revenue exceeds 200 000€, (3) an average of over three employees are employed. When reflecting these limits to start ups, it is obvious that most start ups are not likely to meet two or more of these conditions, while acquiring initial financing. Therefore, there is reason to assume that the decision to subject themselves to an audit would be voluntary at that stage. However, these conditions can be easily met once initial funding and operation begins and the decision to seek an audit is no longer voluntary and carries less information.

2.3.2.2. Moral hazard

The underlying assumptions of the moral hazard theory state that one party is likely to take deliberate and increased risk, when another party carries the risk. The issues with moral hazard partly arise from the incompleteness of financial contracts (Fourati & Affes 2013).

In the context of start up finance this means that owners are more likely to take larger operational risks, if the party carrying more of the investment risk are the investors. Moral hazard is visible in actions that can potentially benefit the owners more than the investors, while taking increased risk. For example, an entrepreneur may get involved in research activity that benefits the entrepreneur, but brings little profit to the investors. (Denis 2004)

Berger and Udell (1998) find that the presence of moral hazard can be harmful to establishing debt contracts. Moral hazard can be especially problematic when the amount of required external finance is far larger than the amount of internal finance. This is evident in the fact that high growth start ups generally obtain some form of angel or venture capital prior to considerable amounts of external debt.

Nofsinger and Wang's (2007) research on the determinants of start up financing subsequently finds that sufficient investor protection against the opportunistic behavior of entrepreneurs is crucial in order to increase the likelihood of a funding decision. In other words, investors usually require measurable benchmarks and asset protection, for the repayment of their investments.

2.3.2.3. Signaling theory

The signals sent out by a company inform possible investors of the state of the company. These signals are oftentimes intentionally adjusted to portray the best possible image of a company. The theory of signaling proposes that companies tend to choose their capital structure, so that potential stakeholders attain the best possible corporate image. (Niskanen & Niskanen 2003: 293-295).

According to Ross (1977) a high debt leverage ratio may imply profitability and the quality of a company as an investment opportunity. The signals created by debt issuances or dividend payouts imply to the investors that cash flow expectancies are high and that the company can afford to have greater leverage. The theory assumes that unprofitable companies cannot afford to issue larger amounts of debt. Ross (1977) states that there is a positive correlation between the market value of a company and increasing leverage.

Thus, debt issuances are considered as positive signals, whereas equity emissions are seen as a negative signal.

The level of entrepreneurial involvement and commitment in the business can be signaled to the financier through the amount of capital invested by the entrepreneur. An entrepreneurial equity contribution signals the potential investor that the entrepreneur believes in the success of the business, which positively affects the willingness of the financier to invest in the business. (Fourati & Affes 2013)

2.3.2.4. Trade-off theory

According to the trade-off theory, the optimal capital structure will vary from company to company. Companies with large amounts of tangibles and high levels of taxable income are much more likely to be able to maintain a higher leverage ratio. On the contrary, companies that are unprofitable and mainly possess intangibles are primarily more likely to resort to equity-based financing. Compare an airline company, whose assets by definition consist of mainly tangibles, to a high-tech start up, whose assets mostly consist of intangibles and whose business as a whole is exceptionally risky. (Brealy & Myers 2000: 522–524)

Random events occurring daily in the financial markets can have an effect on the capital structure of a company. Counteracting these events may take time and give rise to unexpected costs. The trade-off theory essentially argues that companies will, in order to maximize the value of the company, consider the cost of debt and try to achieve an optimal balance between equity and debt. Its main assumptions lie in the decreasing cost of debt finance, due to the tax-deductibility of interest expenses and the negative signaling of equity-based issuances. It is worth noticing that the trade-off theory has not been able to explain why some of the most successful companies have chosen to maintain a low leverage ratio. Another unresolved argument against the trade-off theory is the fact that leverage ratios have been relatively stable since the 1900's, even though the tax-deductibility of interest expenses is a fairly recent policy. (Brealy & Myers 2000: 522–524)

Fourati & Affes (2013) argue that trade-off theory is not applicable to young businesses, as the tax benefits are of little importance in businesses that suffer from the lack of finance and profitability. Additionally, bankruptcy costs are an insufficient factor in showing the negative correlation between risk and leverage.

2.3.2.5. Pecking order theory

The pecking order theory suggests that businesses should consider the source of finance in a certain order. The first and most favorable option would be to use internal income financing, but in case it is not at an adequate level, the company should rely on debt financing (Myers & Majluf 1984). Emissions should be considered as a last resort, due to the high cost related to it and the negative signal emitted to the market (Neale & Pine 2009: 513).

The aforementioned hierarchy is a result of the information asymmetry that exists between the management and shareholders. Managers tend to consider the stock emissions only if the stock is overvalued in the market. Most shareholders acknowledge this widely known fact and therefore act with caution when stock emissions are publicized. This acknowledgement usually leads shareholders to offer a lower price for the stock and thus increase the cost of equity. (Pike & Neale 2009: 513)

If there is high information asymmetry between the management and external financiers, the company usually tends to consider debt financing as their primary source (Shen 2014). This is supported by Brarath et al. (2008) findings, which indicate that only 7.7% of companies belonging to the lowest information asymmetry tenth relied on debt financing, while 35.5% of companies in the highest tenth measured of information asymmetry depended on debt financing.

In the context of start up companies, debt finance is likely to be chosen as last means of finance if there is high perceived information asymmetry. Procuring financing by means venture capital would be more likely available to these companies, as venture capitalists have the means for company evaluation and continuous monitoring. (Nofsinger & Wang 2011)

The notion of the inversed information asymmetry mentioned in section 2.3.3.1 can be extended to the pecking order theory as well. Garmaise's (2001) findings are in contradiction with Myers and Majluf's (1984) seminal research on the pecking order theory, as the theory is reversed when it comes to new entrepreneurial entities. The superior knowledge of certain institutional investors may convince the entrepreneur to favor equity over debt contracts.

2.4. The capital structure impact of entrepreneurial and business factors

The decisions entrepreneurs make in applying for specific types of financing ultimately affect capital structure of their business (Van Auken & Neeley 1996). Capital structure

decisions are important determinants in the performance of the business and in the likelihood failure or expansion (Cassar 2004).

The capital structure of a start up entity is subject to change over its entire life span. Fluck, Holtz-Eakin and Rosen's (1998) research, based on the Wisconsin entrepreneurial climate study, elaborates on the sources of finance used by new and small entrepreneurial entities and identifies distinct patterns by which they source their finance in various stages of the business. In the years following establishment, the proportion of internal finance (entrepreneur, friends, family and business associates) commonly rises. After maturing for some 2-9 years, the proportion of external finance (bank, venture capital, and other external investors) seems to increase. The point of time, during which the change in capital occurs, should not be regarded as a constant.

Berger and Udell (1998) note that internal finance does not seem to dominate external financing, despite the respective changes throughout the life cycle of a start up. The capital structure of a business may be the result of issues faced while acquiring finance. The absence of a possibility for an equity investment may force a business to rely on debt financing, even if it were against its interest. Alternatively, if a bank loan is not attainable, the business entity may be directed to acquire financing through other means.

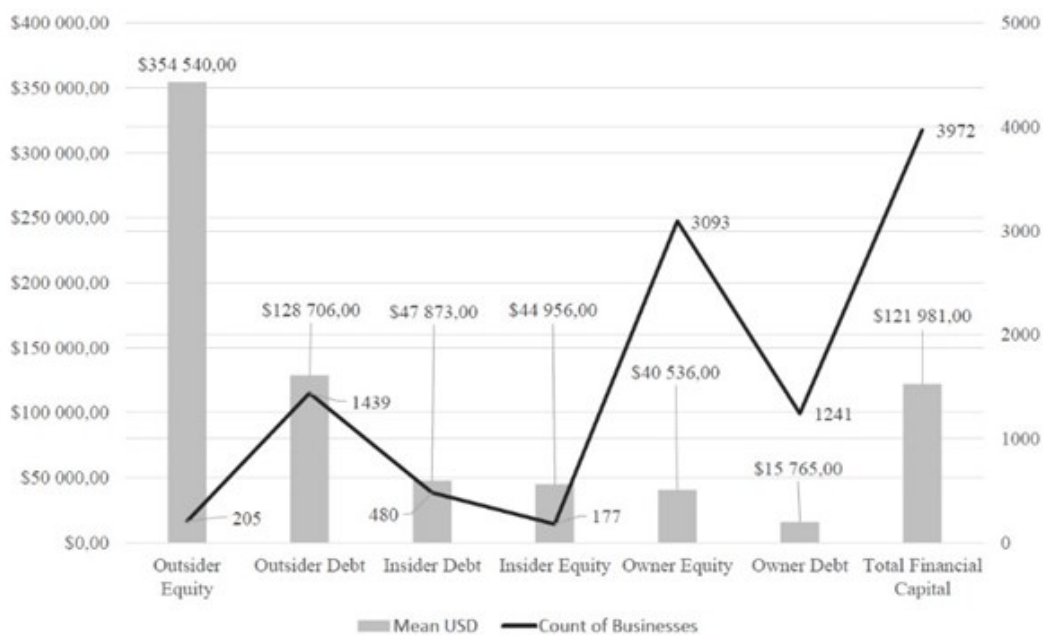
Fluck et al (1998) argue that the evidence can be explained using a combination of the monopoly-lender theory of Rajan (1992) and the reputation theory of Diamond (1991). In Rajan's (1992) research it is argued that investors, such as banks and venture capital firms gain a monopoly of knowledge on long term customers, who can, as a result of the information advantage, bring the investor considerable profit. On the other hand, Diamond (1991) attests that regardless of the superior private information held by the initial investor, outside investors are able to assess the creditworthiness by the firm's track record or reputation. Reputable firms are thus given access to cheaper sources financing. Diamond's (1991) theory therefore seems to indicate the life cycle pattern suggested by Fluck et al (1998).

With the absence of a reputation, new entrepreneurial entities tend to rely on internal financing, but as their reputation develops, their dependence on these aforementioned sources diminishes. After gaining a good reputation, options such as public debt and equity markets open up. As a result, Fluck et al (1998) research does not support the previously mentioned Myers's pecking order theory (1984), as there is no evidence to the suggested sequence, in which retained earnings would be as a first source of finance, then low risk debt and finally equity. Naturally, the entrepreneur will tend to use income and earnings, before applying for external finance. During stages of rapid growth these

retained earnings are however easily exhausted and external finance is needed (Fluck et al. 1998).

In section 2.3.3.2, it was suggested start ups generally obtain large amounts of internal finance prior to external debt due to the moral hazard problem, which is contrary to the findings of Berger and Udell (1998). Berger and Udell (1998) state that they recognize the contradiction and argue that Fluck et al. (1998) data did not include trade credit, and therefore might underestimate the importance of external debt.

According to Robb and Robinson (2010), newly founded companies tend to rely on formal, i.e. commercial debt financing, such as owner-guaranteed loans, business bank loans and business credit lines. On average bank, financing is seven times greater compared to the average amount of finance originating from inside the company. This is also true for businesses with previous equity-based financing either in the form of venture capital or angel investing.



While comparing internally and externally sourced capital, it is evident that internal or owner-based finance is mostly in the form of equity and external capital in the form of debt. In the previously mentioned relation, businesses tend to have approximately 5 times more debt than equity. This is not to say that equity capital is not as important as debt, as the 205 businesses that had access to external equity received it in excess of 350 000

dollars, which is about twice as much as the average total capital of a business in the survey. Over half of the 205 companies received their equity capital from outside informal investors (e.g. angel investors). (Robb & Robinson 2010)

The survey also found that entrepreneurs with previous start up experience and/or a higher level of education were prone to relying on external finance. Robb and Robinson argue that this is likely to do with the fact that lower quality business is likely to only have access to insider finance. (Robb & Robinson 2010)

A survey on start ups in Sweden by Bjuggren and Laufer (2014) found that evidence that bank finance was not as vital to start ups, as implied by Robb and Robinson (2010) and Berger and Udell (1998). A bank loan was used in only 19.3% of all start up entities. Bjuggren and Laufer (2014) argue that internal equity carries much more importance than external debt financing. Studies prior to Bjuggren and Laufer (2014) have not researched the importance of location to expansion, performance and financing. The difference between rural, intermediate and densely populated regions, in terms of expansion intentions, is that in the latter region, they are oftentimes directed internationally, while in intermediate regions expansion is usually implemented in the domestic market.

2.5. Summary

Start ups commonly experience issues in acquiring financing, due to their non-existent track record. These issues commonly take place, when acquiring adequate levels of financing are most needed. It is believed that the capital structure and ultimately, survival can be largely affected by the difficulty of acquiring financing. Start up finance has been a little researched subject this far, and there are currently few widely accepted theories. This study is among the first ones to survey the Finnish start up landscape with regard to their financing sources, issues and their capital structure.

The most important sources of financing range from angel investors, bank finance, governmental finance, venture capital to crowdfunding. Each source is plagued by its own issues, as well as shared issues. The valuation and feasibility assessment procedures may be too stringent for start ups, which may possess great potential, but little proof of concept. According to prior literature, small business entities, including start ups tend to rely on the debt capital market due to the lack of suitable financing (Van Auken & Neeley 1996). This is visible in table 2, which reports on the main findings as well as other pertinent information regarding prior studies. If suitable financing is not found, capital market gaps may cause start ups to deviate from their potential (Robb & Robinson 2010). Many start ups therefore employ informal financing channels, such as angel investors.

Table 2: Statistical methods used and main results of prior studies

Study	Studied	Sample	Method	Main results	Limitations
Scherr, Surgue & Ward (1993)	USA	Characteristics of Business Owners database; 1986; 41 665 businesses	OLS regression	The majority used owner savings as initial capital. Bank finance is the most frequent source of debt. Age negatively associated with debt use regardless of source	
Berger & Udell (1998)	USA	National Survey of Small Business Finance; 1993	Descriptive analysis	Finance from financial institutions represents the most frequent source of external finance. Internal finance does not dominate external finance.	Survey consists of all small businesses, rather than purely start-ups
Fluck, Holz-Eakin, Rosen (1998)	USA	Wisconsin Entrepreneurial Climate Study; founded during 1986-1991; 541 small business entities	Regression	Internal financing dominates during infancy. This pattern reverses with age	
Van Huyghebaert & Van de Gucht (2002)	Belgium	244 start-ups, all founded in 1992	Cross-sectional regression analysis	Start-ups are dependant on debt. Bank finance represents nearly half of total debt. Banks do not screen start-ups thoroughly.	Sample included solely businesses in the manufacturing sector
Robb & Robinson (2008)	USA	Kauffman Firm Survey; firms founded in 2004 and observed until 2006; 4163 businesses	Regression	Bank finance clearly dominates any other source of finance. It is a viable source of financing and readily available	
Bjuggren & Laufer (2014)	Sweden	Sourced through the Swedish Jobs and Society Foundation; 2009-2013; 244 start-ups	Multivariate analysis	Internally generated equity dominates other financing methods. Under 1/4 of all businesses had bank finance. 53% of them had difficulties acquiring it. The location of the business carries importance with regard to expansion	
Hechavarria, Matthews & Reynolds (2015)	USA	Panel Study of Entrepreneurial dynamics; 1998-2000 & firms founded in 2005; 830 & 1214	Cox & Risk regression	As an average, almost 2 times as much capital comes from debt than from equity. Nearly a third of businesses are financed through the majority of funds coming from inside the business. Roughly a fifth of companies relied on debt as the most important source of funds.	

Researchers have found differing patterns for entrepreneurs receiving financing. Zaleski (2009) hypothesizes that start ups with an office, tangible products and competitive advantages are more likely to receive financing than others. Hyttinen et al (2015) on the other hand find that innovative businesses are more than likely to fail in comparison to

start ups that are not. Other researchers have focused on explaining the likelihood through entrepreneurial characteristics. Huyghebaert and Van de Gucht (2002) and Kotha and George (2012) find that entrepreneurs with prior start up experience are more likely to acquire financing than newly established entrepreneurs. Robb and Robinson (2010) argue that entrepreneurs with higher education are more likely to acquire debt financing than less educated entrepreneurs.

Start up financing is largely plagued by the same theoretical issues as in general corporate finance. Widely held theories, such as information asymmetry, moral hazard, signaling theory, trade-off theory and pecking order theory can be used to explain the financing outcomes of start ups.

This study is interested to find out the most used financing channels and whether or not there are common characteristics for businesses receiving certain types of financing. Another point of interest is, to empirically find out whether or not entrepreneurs generally experience similar issues with a certain financing source. Lastly, this study is interested in finding out whether or not these issues affect the capital structure of these start ups. The ultimate aim of this study is to better understand the process by which start ups acquire their first capital and begin business.

In the next three sections, this study will explain the process by which the survey data was collected and empirically test the assumptions and findings of prior literature.

3. RESEARCH METHODOLOGY

The purpose of this section is to discuss the methodological approaches chosen in conducting the research. This section will examine the data acquisition methods used in the survey and discuss the statistical methods that will be used in data analysis in section 5.

3.1. Research objective

This study will examine the primary sources of finance for start up entities. The objective for this study is to demonstrate the issues that start up entrepreneurs face while acquiring finance and how these possible issues impact the capital structure of the entrepreneurial entity. Another question is, whether or not certain entrepreneurial or business characteristics lead to different capital structures or a better likelihood of receiving financing.

3.2. Data acquisition methods

As the intent of this study obtain an unbiased understanding of start ups and the ability to generalize qualities of start ups as well as the difficulties they face in acquiring financing this survey will employ a quantitative research approach

One form of quantitative research that collects data from groups of responders is known as a survey. A survey is a tool for receiving statistical information, or estimates on a target population. It requires the target population to answer a set of questions that will be used to analyze their characteristics (Fowler 2014). One way of gathering this data, is through a questionnaire, which can contain a number of structured questions, all of which have a range of predefined answers. Open-ended questions refer to questions that can be answered in the responders own words (Adams & Brace 2006: 34). This study will employ both of these, but will try to minimize the amount of open-ended questions for efficiency and ease of statistical analysis.

Self-completion questionnaires have several advantages over structured interviews. The fact that the interviewer has to be present to ask the required questions in structured interviews, can cause personal characteristics, such as ethnicity, gender and social background, to contribute to a bias in the answers. Since the questionnaire is filled in without having personal contact with the interviewee, self-completion questionnaires lack these problems. Questions regarding subjects that may create feelings of anxiety or sensitivity in the interviewees, are best conducted as self-completion questionnaires, as

the chance of under-reporting is lower than with structured interviews. (Bryman & Bell 2007: 241-245)

The disadvantages of choosing a self-completed questionnaire are largely related to lack of a contact between the interviewer and interviewee. Due to the absence of the interviewer, interviewees cannot be asked to elaborate on questions. Furthermore, the interviewee cannot be certain that the right person has answered the question or that non-responders have not had an effect on the answer. Interviewees also tend to get fatigued by answering too many questions, especially if the questions do not seem relevant to them. (Bryman & Bell 2007: 242-243)

Perhaps the largest issue with questionnaires is the expected low response rate (Bryman & Bell 2007: 243-244). This is due to the fact that the response depends completely on the willingness of the responder to complete the questionnaire. The response rate has been identified to have a negative correlation with the length of the questionnaire (Adams & Brace 2006: 35). If the researcher is not able to prove that there is no statistical difference between responders and non-responders, there is a risk of bias. To counteract a low response rate, many employ a strategy of offering a financial incentive for the interviewee to answer the questionnaire. Reminders may also increase the rate of response in non-responders. (Bryman & Bell 2007: 243-244)

This study will employ two methods for increasing the response rate. Firstly, the questionnaire will be administered as an internet survey, rather than an email survey. Email surveys tend to lead to lower response rates, because the responder has to spend time opening attachments and returning them to the interviewer. Internet surveys are generally quicker and require less effort from the responder (Adams & Brace 2006: 35). Secondly, a financial incentive will be offered in form of the opportunity to win a prize upon completion of the questionnaire. Financial incentives (cash, gift cards, etc) are a simple way of motivating responders (Sarstedt & Mooi 2014: 76). In this survey, responding to the survey gave the responder the right to enter in a raffle, the prize of which was a 50€ Amazon.com gift card. As the entry into the raffle was optional, the contact information of those who wanted a chance to win the prize, was needed. The winner was selected from the people that chose to enter the survey and had provided their email address. Some respondents may naturally refrain from giving out their contact information, thus lowering the response rate in this case (Sarstedt & Mooi 2014: 77). However, seen as the question regarding entering the raffle was the last one and the respondents were given an option not to enter, the effect on the response rate may be insignificant.

Before publishing the survey online, it was sent to four experts in the field of start up and/or corporate finance. Pre-testing the survey can eliminate a number of problems that may arise from misunderstandings or survey design errors. (Sarstedt & Mooi 2014: 76)

The self-completion survey, which is included as attachment I at the end of this study, was created using a combination of survey questions and themes of prior studies, such as the Kauffman survey (2011) and Bjuggren and Laufer (2014). Questions 1-8 aim to create a profile on the responder businesses, by gathering information on their main industry, business model, legal status, level of innovativeness, employment and revenue. These questions also help identify whether or not the responders can be deemed start up businesses and provide important comparative data for statistical analytics.

In questions 9-11 the responders were asked if the business was subject to auditing, and if so, for which reasons and whether or not there was any perceived benefit from being audited. These questions aimed to find out, what percentage of start ups in the population were being audited and whether or not they employed in order to increase credibility or trust with investors (ie. Information asymmetry). Under Finnish Auditing Act, businesses are not obligated to appoint an auditor, if no more than one of the three following conditions are met in the past and previous fiscal years; balance sheet total of is in excess of 100 000€, revenue exceeds 200 000€ or average count of employees exceeds 3 (Ministry of Trade and Industry 2007). It would seem therefore likely that many start up businesses do not have to be audited, if not required by other than legislative reasons.

Questions 12-14, as well as 19 all relate to the amount of internal (insider) and external (outsider) equity and debt. The objective is to evaluate whether or not there are quantifiable differences between the capital structures of those who indicated they had experienced difficulties acquiring finance and those who had not.

Responders were asked to identify the primary financing sources, ease or difficulty in acquiring financing, any possible difficulties and reasons for said difficulties in questions 15 to 25 (excl. 19). These themes were partially selected from Bjuggren and Laufer's (2014) survey on Swedish start ups. This study however employed likert scale -questions to gather qualitative data on the perceived difficulties of start up financing in Finland. Questions 26 to 32 were background questions, which formed the basis for evaluating the effect of entrepreneurial characteristics, such as experience, age, education, on obtaining external financing.

3.3. Survey process

Some prior studies seem to have used the term start up as a general term for all small businesses. The difference in terminology may result in very different results, as start ups' financing requirements differ from traditional small businesses. For example; the basis for Berger and Udell (1998) seminal research is the national survey of small business finance from 1993, which includes all sorts of small businesses. Robb and Robinson (2010) in their research examine the Kauffman Firm Survey data, which includes 4,928 newly founded companies. Their research does not seem to exclude businesses that can not be verified as start ups.

This study is different in the way the responder population was sourced. Namely, all the responder contacts were sourced through start up incubators that predominately work with start ups. Business incubators are a support system that aim at fostering the creation and acceleration of new businesses, by supplying them with resources, assistance and creating contacts They have been credited for creating successful businesses and preventing unexperienced entrepreneurs from making avoidable mistakes. (Mas-Verdú, Riberio-Soriano & Roig-Tierno 2015; Morant & Oghazi 2016)

Email addresses for 646 businesses were received either from start up-incubators or start up event organizers in Finland. Many of the start ups had attended events or had been in contact with a start up incubator in Finland. After eliminating businesses that did not fit under the start up classification and/or whose contact information were not able to access, the responder group for the survey in Finland eventually consisted of 459 businesses.

The self-completion survey (Attachment I) was posted on Google Forms[®] and was sent to a total of 459 businesses. The email addresses of these businesses can be divided into 193 CEO/Founder email addresses and 266 general email addresses. After eliminating the email addresses that came back as false or undeliverable, the final responder group came to 448 companies.

After the initial invite and two subsequent reminders, 90 responses were sent back, making the response rate 20.1 %. While there is no general rule on what constitutes a statistically acceptable response rate, Baruch (1999) states response rate of 20-30% in questionnaires that are being sent to a large number of companies, and founders or CEO's in this study, is fairly common. An adequate response rate or frequency of responses can depend on the conditions of the study. Under Baruch's (1999) "Liberal conditions", a 10% sampling error and a 80% confidence level, the required frequency of answers for a sample of 500 respondents, would be 25. Alternatively, under "Stringent conditions", a

3% sampling error and 95% confidence level, 289 answers would be required. Considering these guidelines, the response rate for this study can be deemed neither good, nor statistically unrepresentative.

There is a risk of non-responder bias and the risk that entrepreneur might not be the actual responder in the survey. This risk may be heightened by the fact that the cover letter to the survey indicated that there is a prize involved in completing the survey. However, since most of these start ups are small, there is reason to believe the CEO/Founder would have access and responsibility over responding to the general email inquiries.

3.4. Data analysis methods

After the data was gathered through Google Forms[®], it was input into IBM SPSS version 23. SPSS was chosen due to its ease of use and reputation in quantitative data analysis. Table 2 depicts the methodological approaches prior similar studies used in analyzing their data survey data. Observing this table, it is evident that past studies have primarily used regression statistical tools. Seen as this study has examined the its main topic in a similar fashion, it is reasonable to use the same statistical methods as well.

The main methods selected for data analysis were the Spearman rank correlation coefficient and logistic regression analysis. These tools were selected as most of the data in this study is formatted on an ordinal scale. An ordinal scale is a level of measurement that is able to indicate whether or not a variable possesses a certain quality more or less than others. It is not able to explain how much of a certain quality any single variable has compared to other variables (Metsämuuronen 2005: 341). Statistical methods for the analysis of ordinal data can also be used on data that is formatted on a nominal scale, as they were in this study.

3.4.1. Spearman's rank correlation coefficient

Correlation indicates association between two variables. It shows the relationship between two variables in terms of strength and direction and may only range from -1, perfect negative association to 0, no association to +1 portraying a perfect positive association. Correlation merely shows an association and it does not quantify causality between these variables. (Fink 1995: 38; Crawford 2006)

The Spearman's ranked order correlation coefficient or Rho was selected to be used as the tool for examining statistical correlation in this study, as it is best suited to quantify correlation between ordinal data. The results of a Spearman's Rho should be interpreted in the following way; 0 to ± 0.20 can be considered a negligible association, while ± 0.21

to ± 0.40 is weak, ± 0.41 to ± 0.60 is moderate, ± 0.61 to 0.80 is strong and ± 0.81 to ± 1.00 can be deemed very strong. (Prion & Haerling 2014)

The formula of the Spearman rank correlation coefficient is as follows:

$$(1) \quad r_s = 1 - \frac{6 \sum_{i=1}^n D_i^2}{n(n^2 - 1)}$$

Where:

$d_i, i = 1 \dots n$ are the differences in the ranks of x_i and y_i

(Aczel 1989; 783-784)

3.4.2. Ordinal logistic regression

Regression analysis explains the strength of the association between two variables. In case of several variables the squared multiple correlation R^2 identifies to what extent a group of variables (factors) are able to explain the results of an independent variable. Regression is able to predict the value of a dependent variable through a number of independent variables. Unlike correlation, regression is able to differentiate between the outcome and predictor variables. (Metsämuuronen 2005: 658-659; Crawford 2006)

Ordinal logistic regression analysis aims to find the variables that best explain the phenomenon out of an array of dependent variables, when the data is ordinal in fashion (Metsämuuronen 2005: 687). Traditional regression analysis assumes that the independent variables at the very least, correlate on a moderate level with the dependent variables (Metsämuuronen 2005: 662). Ordered logistic regression on the other hand assumes that there is a linear association between the logit of the dependent and independent variable. Another important note is that the ordered logistic regression model is sensitive to the existence of outliers within the data. (Metsämuuronen 2005: 689)

The limitation of any regression analysis may be the absence of theories to indicate which variables should be used to explain the phenomenon under investigation. This means that, the more non-explanatory variables a researcher chooses to include in the regression analysis, the more imprecise the results may become. If the ratio of variables compared to the number of observations becomes too high in traditional regression, the results may falsely indicate a higher correlation of determination. It is suggested that a ratio of 40/1 in terms of observations and variables should be maintained in order to produce reliable results. (Metsämuuronen 2005: 661)

Ordinal logistic regression however is more tolerant of a higher ratio of variables to observations and will not likely skew results due to it (Metsämuuronen 2005: 689). Unlike linear regression for example, ordered logistic regression does not allow for the examination of normality in residuals (Metsämuuronen 2005: 707).

The formula of ordinal regression is as follows:

(2)

$$\ln\left(\frac{F_{ij}}{1 - F_{ij}}\right) = \beta_{0j} + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Where:

F_{ij} = is the probability that $Y=j$, the lowest ordered category

β_0 = the intercept of the regression surface

$\beta_i, i = 1, \dots, k$, is the slope of the regression surface

(Aczel 1989: 486-487; Norusis 2008: 70)

4. DATA

This section includes a detailed examination of the obtained data in the following order; business characteristics, financing characteristics, entrepreneurial characteristics and the stated difficulties in obtaining financing. The main findings of the survey are presented in this section.

4.1. Business characteristics

The obtained data show that all (100%) of the businesses surveyed are limited liability corporations. This was expected, as other corporate firms may not be as suited for shared ownership and receiving large external investments. Interestingly however, Bjuggren and Laufer (2014) state that only approximately one third of all Swedish start ups were in corporate form and the remainder were sole proprietorships. With this regard the gathered data for this study does not reflect similar legal form decisions. The main reasons for the difference may stem from national legislation and the differences in the definition of a start up between these two studies.

Table 3 depicts the characteristics of responder business. It shows that the majority of responders chose their main industry of the business, as either “Software and Internet” (51.1%) or “Computers and Electronics” (17.8 %). 54.4% responded that their business model was aimed at producing both products and services, whereas 30% for services and only 15.6% for solely producing tangible products. This naturally reflects the choice of main industry as well.

Most businesses 66.7% can be deemed innovative or to have a competitive advantage, as they possess intellectual property, such as patents, trademarks or copyrights. This is arguably a good indicator that the businesses that were contacted, were in fact start ups.

Table 3: Characteristics of the responder businesses

Business Characteristics	f	Percentage		f	Percentage
Main Industry			Office Location		
Software and Internet	46	51.1	Rented or Leased Space	58	65.2
Computer and Electronics	16	17.8	Start-up Community or Incubator	15	16.9
Media and Entertainment	7	7.8	Residence or Garage	10	11.2
Healthcare	4	4.4	Space of Business	3	3.4
Business Services	3	3.3	Contact/Customer/Supplier	1	1.1
Consumer Services	3	3.3	Owned Property	1	1.1
Telecommunication	2	2.2	Educational Space	1	1.1
Transportation and Storage	2	2.2	Mail Box	1	1.1
Travel Recreation and leisure	2	2.2	Year of Establishment		
Agriculture, Forestry and Mining	1	1.1	-2011	17	18.8
Biotechnology	1	1.1	2012	14	15.6
Energy and Utilities	1	1.1	2013	14	15.6
Financial Services	1	1.1	2014	24	26.7
Manufacturing	1	1.1	2015	18	20
Business Model			2016	3	3.3
Both	49	54.4	Employment		
Service	27	30	None	40	44.4
Product	14	15.6	1-5	45	50
Intellectual Property (Patents, Trademarks, Copyrights)			6-10	2	2.2
Yes	60	66.7	11-15	2	2.2
No	30	33.3	16-20	1	1.1

The businesses largely (65.2%) operate out of leased or rented spaces and only 16.9% were located at a start up incubator's premises. 11.2% were located at a residential location. These businesses employed either no (44.4%) or 1-5 (50%) employees during the start up phase. It is unclear whether these employees were externally hired employees, or also included the entrepreneur themselves. A mere 5.5% employed more than 5 employees, which is in accordance with fact that start ups commonly do not have the financial resources to employ, even if it were in their best interest. The findings with regard to employment seem to be in line with those of Van de Gucht and Huyghebaert (2002). In their sample, a start up employed 3.1 employees on average. However as the data in this study is ordinal, conclusions regarding the exact amount of employees cannot be made.

Most businesses were founded between 2012 and 2016, the most frequent year being 2014. Only 18.8% were founded prior to 2011. 89% of the businesses had revenues of under 500 000€, with the most frequent category being 50 000 – 100 000€ (25.6%). 31.3% had revenues between 100 001 and 500 000€. This shows that a majority of the businesses are considered small and may not be able to function solely on revenue streams.

Table 4: Auditing related questions

Auditing	f	Percentage
<i>Has the company's financial statement been audited during the seed or start-up phase?</i>		
Yes	64	71.1
No	26	28.8
<i>What was the primary reason for having the financial statement audited?</i>		
Required by Financial Contract	26	38.8
Legislative Reason	19	28.4
Assurance purposes	8	11.9
Required by Company Regulations or By-Laws	5	7.5
Voluntarily	5	7.5
<i>In your opinion, did the business benefit from having the financial statement audited</i>		
Yes	24	35.8
No	24	35.8

Table 4 reports on the responses with regard to the questions Prior studies have not examined whether or not start ups are being audited, nor the reasons for engaging with an auditor. The fact that start ups are being audited, despite the lack of obligation, can indicate that start ups are trying to alleviate information asymmetries and trust-issues with investors, by having their financial statement audited. Table 4 shows that a vast majority, 71.1% had been audited by a certified public accountant, but for the most part, for other than voluntary reasons. 38.8% responded that their investment or loan contract required it, while only 7.5% sought an audited statement for voluntary reasons. Additionally 11.9% indicated that they had done for increased credibility. 28.4% were legally obligated to be audited, meaning they have grown over the limits introduced in section 3.2. 35.8% of the responders perceived no benefit or advantage from having their business audited, while another 35.8% considered it beneficial.

4.2. Characteristics of entrepreneurs

Table 5: Entrepreneurial characteristics

	f	Percentage		f	Percentage
Gender			Education		
Male	77.00	85.60	Grade School	1	1.1
Female	13.00	14.40	High School	3	3.3
Age			Some University Courses	9	10
Mean age		40.00	Bachelors Degree	20	22.2
Max age		79.00	Masters Degree	49	54.4
Minimum age		21.00	Advanced Graduate Work or Ph.D	8	8.9
Age Group			Professional or Educational		
21-30	19.00	21.40	Yes	38	42.2
31-40	30.00	33.70	No	52	57.8
41-50	27.00	30.00	Professional or Educational Experience in Finance		
51-60	11.00	12.50	Yes	36	40
61-70	1.00	1.12	No	54	60
71-80	1.00	1.12	Prior Experience with Entrepreneurship		
Position			Yes	53	58.9
CEO	58.00	64.40	No	37	41.1
CTO	4.00	4.40			
CFO	2.00	2.20			
Other Key Management	7.00	7.80			
Member of the Board	10.00	11.10			
Sharholder	9.00	10.00			

Based on table 5, the responders can be said to be homogenous in terms of gender, education and position in the business. 85.6% were men and mostly aged between 21-50 years of age. 85.5% had received a university degree (Bachelor's, Master's or Ph.D). The uneven distribution of gender and education may be a limitation to the validity of the results, as some unwanted responder selection may have occurred, possibly stemming from financial nature or the perceived difficulty of the questions. Responders with higher education may have been more willing to answer the survey, compared to responders without a university degree. Prior studies have not found start up entrepreneurs to be this highly educated. (Bjuggren & Laufer 2014; Robb & Robinson 2010) However, the data show that responders with a background in finance or accounting, were not more likely to answer the survey, as only 42.2% had professional or educational experience in accounting and 40% for finance. 58.9% had prior experience in entrepreneurship.

4.3. Financing characteristics and sources

Table 6. Crosstabulations with investor groups and amounts of external equity

	External Equity						Total %
	Under 10 000€	10 001-50 000€	50 001-100 000€	100 001-250 000€	250 001-500 000€	In excess of 500 000€	
Angel Investor	2 4,9%	10 24,4%	6 14,6%	12 29,3%	1 2,4%	10 24,4%	41 %
Venture capital		1 6,7%	2 13,3%	2 13,3%	3 20,0%	7 46,7%	15 %
Governmental Institution		4 17,4%	5 21,7%	8 34,8%	2 8,7%	4 17,4%	23 %
Crowdfunding		2 50,0%	1 25,0%			1 25,0%	4 %
Financial institution	2 22,2%			4 44,4%	2 22,2%	1 11,1%	9 %
Acquisition	1 16,7%	1 16,7%		1 16,7%	3 50,0%		6 %
Investment Bank					1 50,0%	1 50,0%	2 %
Total %	5 %	18 %	14 %	27 %	12 %	24 %	100 %

Table 6 lists the frequencies and percentages of various amounts of financing in relation to equity financing sources, as indicated by the surveyed businesses. Responders were asked to identify the amounts of existing financing in the categories of internal/external debt and equity. Internal financing is defined as financing that originates from shareholders, entrepreneurs, friends, family or other individuals that are already in close connection to the business. External financing on the other hand originates from parties that do not have prior contact, stake or other vested interests in the business. Please see attachment 1 for further reference to the survey questions and questionnaire.

In terms of external equity, angel investors (41%) clearly seem to dominate these start ups.. Governmental equity investments are indicated as the second most used source for external equity at 23%. The importance of these two channels of finance is undeniably large, as they financed 64% of all external equity, which usually is supplied at more suitable terms than debt. Venture capitalists only supplied 14%, but 46.7% of their investments were in excess of 500 000€.

External equity was invested most frequently in the category of 100 001-250 000€. The second largest group was “in excess of 500 000€”, which indicates sums up to 5000 000€. This study is mostly interested in early stage investments, due to which the larger investments were grouped in one category.

The low acquisition percentage of crowdfunding investments may be, due to legislative reasons. Various laws, such as the companies, securities and investment firms acts, as well as the fundraising acts limit the possibility of such investments currently in Finland.

This study finds that bank finance cannot be said to dominate the financing of this start up population. Bank finance, either as an entrepreneur-backed loan or business loan had been employed in 28% of all businesses. When combined with the percentages of responders that selected “Other financial institution”, the total percentage rises to 58%. This represents the amount of responders that obtained either bank debt or debt from an unspecified financial institution. While perhaps not the most dominant channel in financing altogether, banks and financial institutions represent the largest source of finance for debt.

Table 7. Crosstabulations with investor groups and amounts of external equity

	External Debt						Total %
	Under 10 000€	10 001-50 000€	50 001-100 000€	100 001-250 000€	250 001-500 000€	In excess of 500 000€	
Entrepreneurial loan	2 14,3%	6 42,9%	1 7,1%	4 28,6%	0,0%	1 7,1%	14 %
Corporate Loan	1 6,3%	3 18,8%	2 12,5%	8 50,0%	1 6,3%	1 6,3%	16 %
Governmental Institution	2 6,5%	4 12,9%	2 6,5%	16 51,6%	2 6,5%	5 16,1%	31 %
Financial institution	2 6,7%	5 16,7%	3 10,0%	11 36,7%	4 13,3%	5 16,7%	30 %
Supplier or Customer	1 25,0%	0,0%	0,0%	1 25,0%	0,0%	2 50,0%	4 %
Angel Investor	0,0%	1 20,0%	0,0%	2 40,0%	1 20,0%	1 20,0%	5 %
Total %	8 %	19 %	8 %	42 %	8 %	15 %	100 %

Table 7 indicates the frequencies and percentages of various amounts of financing in relation to debt financing sources, as indicated by the surveyed businesses. Governmental loans seem to be almost as frequent (31%) in Finnish start ups as commercial and individual bank loans are put together. Financial institutions were also almost as frequent a provider of debt as governmental institutions. Other prior studies have not found such a strong reliance on governmental financing than this study. In comparison, Bjuggren and Lauger (2014) find that merely 4.8% of all start ups received governmental funding, without regard to the nature of the financing. When adding together the percentages of governmental equity investments and debt financing, it is clear that governmental financing is a surprisingly significant source of funding for these start ups. A total of 54% of all businesses had received either equity or debt from a government agency. The survey did not allow for the responders to elaborate on which governmental institutes they had received financing from, but there is reason to believe the most important ones are TEKES and Finnvera, as examined in section 2.2.7, as they are the largest providers.

42% of all debt financing was in the 100 001-250 000€ category. Another 19% was located in the category of 10 001-50 000€. The distribution of debt financing is somewhat different from equity investments, as larger investments than 250 000€ are rather rare with debt.

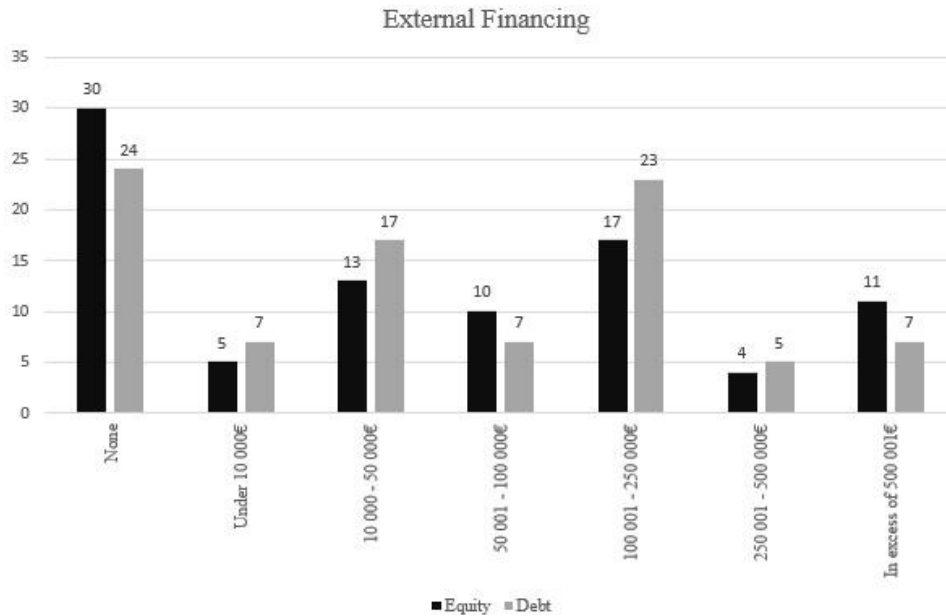


Figure 5: Frequencies and distributions for external financing by amounts (€)

Figure 5 shows that the 87% of the external equity varied from 0 to 500 000€. 67% of all respondents had received some kind of an equity investment, with the most frequent groups being 10 000 – 50 001€ and 100 001 – 250 000€. 33% had not obtained any external equity, and 26% had no external debt. Based on this figure, external debt is slightly more frequent than external equity, but is mostly in categories below 250 000€.

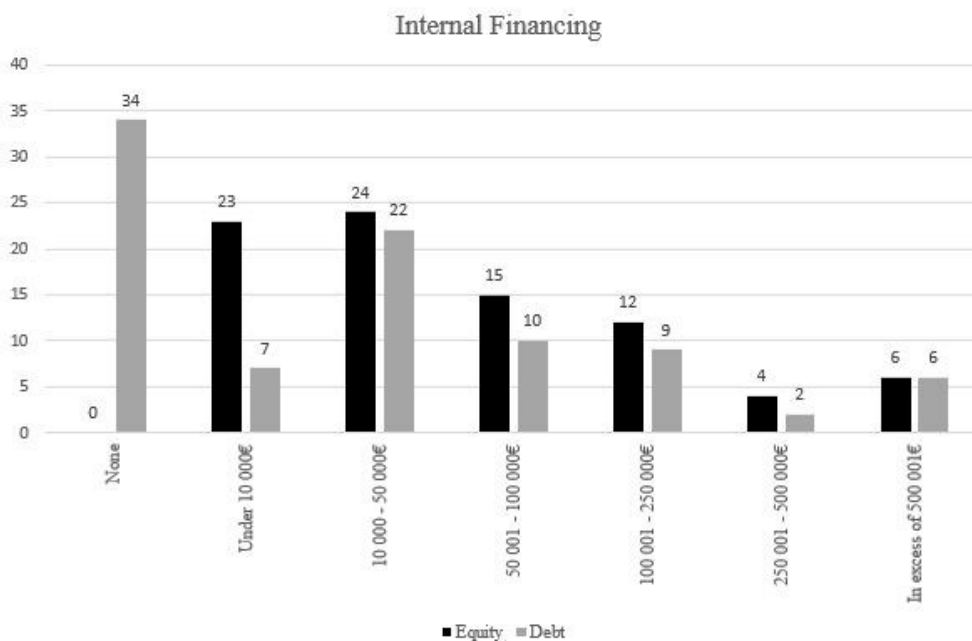


Figure 6: Frequencies and distribution of internal financing by amounts (€)

Internal finance, as shown in figure 6, is most common categories 10 000-50 000€ (29%) and under 10 000€ (27%). Internal debt does not seem to play a significant role in internal financing, as 38% reported that they had none. In categories over 10 000€, internal debt and equity seem to be well matched. Internal debt financing seems to be the most frequent in the category 10 000€ - 50 000€ with 24%. Compared to external financing, larger amounts of internal financing are rare. The figure expectedly shows that all businesses employ internal equity, which they are required to have under the Finnish Limited Liability Company Act. This likely indicates that the survey questions were understood correctly.

Table 8: Capital structure and equity ratio

	Total Equity		Total Debt		Total Assets		Equity Ratio	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Mean	174 157.21 €	335 974.03 €	118 442.86 €	264 935.06 €	292 600.06 €	600 909.09 €	52 %	52 %
Median	60 002.00 €	150 000.00 €	60 002.00 €	150 000.00 €	150 002.00 €	310 000.00 €	50 %	50 %

	Categorized Equity Ratios			
	0-25%	26-50%	51-75%	76-100%
f	16	26	16	19
%	21 %	34 %	21 %	25 %

Table 8 depicts the means and medians for equity, debt and total assets, as well as the computed equity ratio. When compiling this table, businesses with the five largest and lowest total assets were removed from the scope of table 8, as they skewed the results significantly. The questions regarding the amount of equity and debt financing were formatted into an ordinal scale. An ordinal scale is one that has an inherent order that exists between the available categories (Fink, 1995: 5). For example, the category 101 000 – 250 000€ is larger than 50 001 – 100 000€ and should come first in the scale. The ordinal scale can identify the relation of a certain choice to others, but cannot indicate the exact amount (Metsämuuronen, 2002: 39). This means that in the case of assets, the questions cannot pinpoint the exact amount of equity or debt, but can rather show the lower and upper bounds for these values. The capital structure of a responding business can be anywhere between these two boundaries. While the area between the lower and upper bounds is undeniably large, it gives a rough estimate on the average businesses balance sheet and shows that generally speaking, debt financing is not dominant.

The equity ratio bounds were calculated by dividing the upper and lower for equity with the respective bounds for total assets. According to table 8, a responder business had, on average between 174 000€ and 336 000€ of equity and 118 000€ and 265 000€ of debt. The median for total assets was between 150 000€ and 310 000€. The mean for total assets is around 292 000€ and 601 000€. The average equity ratio was 52%. As for the distribution of the equity ratios, the most frequent group is “26-50%” and represents 34% of the sample. When comparing these results to the Kauffman Firm survey (2008) results, it is evident that the mean total assets are considerably higher. The mean total assets for all high-tech firms in their sample was \$136 818. For “High-Credit Score” high-tech firms on the other hand, total assets were \$273 578 on average. The total assets of the responder businesses are more closely matched to the high-tech, high-credit firms in the Kauffman Firm Survey. The results of this study and the KFS survey may be connected, as a large part of the businesses in this study could be deemed high-tech firms. However the data in this study does not provide information as to the credit worthiness of the business, which limits the comparability with the Kauffman Firm Survey.

4.4. Stated difficulties in obtaining financing

When answering the questions about financing difficulties, the respondents were given pre-filled options to choose from and the possibility to supply a custom answer. Most respondents chose to use the pre-filled options in the questions regarding difficulties faced in acquiring equity investments.

Table 9: Responses to the Likert-scale questions with regard to financing difficulties and the impact on business

Likert Scale on Acquiring External Financing	N	Minimum	Maximum	Mean	Standard Deviation	Median
"Acquiring an external equity investment for our company was ___*"	84	1	5	3.41	1.08	4.00
"Acquiring external debt financing for our company was ___*"	81	1	5	3.05	1.04	3.00
"These issues have had a clear negative impact on the business**"	90	1	5	3.26	1.31	3.00

*1-Very Easy 2-Easy 3-Neutral 4-Difficult 5-Very Difficult

** 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

Table 9 reports on the descriptive statistics of the answers to the Likert questions on the difficulty of acquiring debt or equity investments. Based on table 9, the overall process of obtaining external financing cannot be said to be difficult in the eyes of the responders, as the mean for all of the questions is around neutral. The difficulties were not seen as having had a negative effect on the business. Acquiring external equity was however perceived as slightly more difficult than obtaining external debt (Mean_{external equity}=3.41,

Mean_{external debt}=3.05) This is further suggested by the fact that 34.5% responded that the process of acquiring equity was “Difficult” The standard deviations of the likert scale questions show that they have not been especially polarizing. (Standard deviation_{external equity}=1.08, Standard deviation_{external debt}=1.04, Standard deviation_{business impact}=1.31)

Table 10: Stated difficulties in obtaining financing

Difficulties in Acquiring Financing	External Equity	External Debt
Receiving Financing for a Smaller Amount than Needed	22 (32.4%)	10 (12%)
Being Declined Altogether	16 (23.5%)	14 (16.9%)
N/A	16 (23.5%)	34 (41%)
Receiving Financing with Different terms than Wished	14 (20.6%)	16 (19.3%)
Difficulties with Negotiations	-	6 (7.2%)
No Difficulties	-	3 (3.6%)

According to table 10, the largest issue with acquiring external equity is the fact that start ups received smaller investments than needed (32.4%). Being declined altogether seemed to be a larger issue when acquiring external equity than debt (23.5% versus 16.9%). In the case of external debt, the single largest issue was receiving financing with different terms than needed, which may refer to a higher interest rate or a condition of repayment. The responders that chose N/A were likely those, who had no issues in acquiring financing, could not pinpoint issues or did not apply for external debt. The N/A option was included, in case respondents could not state issues or were not willing express issues. However, some responders chose to respond with a custom answer “No difficulties” instead of N/A, when there were no difficulties. Therefore it is difficult to analyze whether or not some N/A answers were due to the responders not bothering to supply a custom answer. As the number of N/A responses is rather high, it may as well be that the question was not understood.

Table 11: Stated reasons for the difficulties in obtaining financing.

Reasons for Difficulties in Acquiring Financing	External Equity	External Debt
Business Too New or Unproven	42 (35.3%)	20 (17.5%)
Disagreement on Valuation	18 (15.1%)	9 (7.9%)
Issue with Business Model	3 (2.5%)	6 (5.3%)
Issue with Product or Production	9 (7.6%)	5 (4.4%)
Lack of Suitable Investors	8 (6.7%)	-
Management-related Issue	-	1 (0.9%)
N/A	17 (14.3%)	34 (29.8%)
No Difficulties	5 (4.2%)	-
Tighter Restrictions on Lending	-	13 (11.4%)
Weak Profitability	3 (2.5%)	11 (9.6%)
Weak Revenue	14 (11.8%)	15 (13.2%)

The reasons that led to the stated difficulties in table 10 are shown in table 11. The most prominent issue regarding difficulties with external equity and debt, according to table 11, was that the business model is too new or unproven, with 35.3% and 17.5% respectively. This comes as no surprise, as start ups are, by definition, new and often employ unproven business methods in search of a new business model, product or service. Respondents also indicated that disagreement on valuation (15.1%) and weak revenue (11.8%) were the cause of difficulties in acquiring equity. The same percentages for external debt were 7.9% and 13.2%. 11.4% also responded that the restrictions on lending had been tightening and had caused difficulties for them.

5. STATISTICAL ANALYSIS

This chapter will address the statistical analysis of the previously examined data. It will begin with the analysis of the Spearman's correlation coefficient matrix and will proceed to the ordinal regression analysis. The next section will conclude this study with a summary and concluding thoughts.

Table 12 below depicts all of the variables used in completion of this study.

Table 12. All variables used in data analysis

Name of Variable	Description of Variable
Dependent Variable	
EXT_DEB	Indicates the amount of external equity invested for each category (ordinal)
EXT_EQ	Indicates the amount of external debt financing for each category (ordinal)
INT_DEB	Indicates the amount of internal debt financing for each category (ordinal)
INT_EQ	Indicates the amount of internal equity invested for each category (ordinal)
Independent Variable	
AUDIT	Whether or not the business had been audited (ordinal)
BCKG_ACC	Whether or not the responder had professional or educational experience in accounting (ordinal)
BCKG_EDU	Indicates the highest achieved educational degree of the responder
BCKG_ENT	Whether or not the had prior experience in running start-ups
BCKG_FIN	Whether or not the responder had professional or educational experience in finance
BCKG_GENDER	Indicates the gender of the responder
BUSINMODEL	Indicates the nature of the product, service/product/both
EMPLOY	Indicates the amount of employees during startup on an ordinal scale
EXT_DEB_LIKERT	Indicates the level of difficulty in obtaining external debt financing
EXT_DEB_PRO_BUREAU	The problems in acquiring external debt were caused by the bureaucracy of the process
EXT_DEB_PRO_YESSMA	External debt was acquired but at a smaller amount than needed
EXT_DEB_PRO_YESTERM	External debt was acquired but at different terms
EXT_DEB_REAS_NORIGINV	The reason for difficulties acquiring external debt was the lack of right investors
EXT_DEB_REAS_PROMAN	The reason for difficulties acquiring external debt was a problem with the manufacturing process
EXT_DEB_REAS_PROMAN	The problems in acquiring external debt were caused by problems in the manufacturing process
EXT_EQ_LIKERT	Indicates the level of difficulty in obtaining an external equity investment
EXT_EQ_PRO_NOINV	The major issue in acquiring external equity was the lack of investors
EXT_EQ_PRO_YESSMA	External equity was acquired, but at a smaller amount
EXT_EQ_PRO_YESTERM	External equity was acquired, but at a undesirable terms
EXT_EQ_REAS_BMUNPR	The reason for difficulties acquiring external equity was an unproven business model
EXT_EQ_REAS_DIFVAL	The reason for difficulties acquiring external equity was the differing valuation between the investor and entrepreneur
EXT_EQ_REAS_PROB	The reasons for difficulties acquiring external equity were problems with the business model
EXT_EQ_REAS_PROMAN	The reason for difficulties acquiring external equity was a problem with the manufacturing process
EXT_EQ_REAS_PROPROPRO	
EXT_EQ_REAS_WR	The reason for difficulties acquiring external equity was weak revenue
EXT_FIN_DELAY	Indicates the amount of days by which receiving external financing was delay if any
EXT_FIN_DELAY	Indicates the delay in starting up, due to the financing process
EXT_FIN_NEG_LIKERT	A Likert scale answer indicating whether or not problems encountered during applying for financing has resulted in a negative impact on the business
EXT_FIN_NEG_LIKERT	Indicates the perceived negative effect on business caused by the financing process
FOUNDED	The year the respondent business was founded on a nominal?? Scale
IPR	Indicates whether or not the business had obtained patents, trademarks, copyrights or other intellectual property
MAININD	Indicates the main industry of the business
OFFICE	Indicates where the businesses' office was located

5.1. Correlation analysis

Prior studies have examined the effect of business characteristics in relation to the financing and capital structure of the business. Focal characteristics include main industry, business model, intellectual property, type of office, level of employment and auditing, as examined in this study. Many of these characteristics may be linked to assurance or credibility of the business. For example, businesses that have large amounts of intellectual property and have been professionally audited may be more credible to outside investors than ones who lack these characteristics.

Zaleski (2009) points out that firms with external offices, ie. Offices located in other than residential spaces, may be more likely to receive external financing. Furthermore, businesses with intellectual property, such as patents and trademarks may also be more likely to receive external investments. Hyytinen et al (2015) find that entrepreneurs with innovativeness may have a negative effect on obtaining external financing. Anginella Mazzù (2015) also find that innovativeness may be a detriment to obtaining external financing.

Table 13 provides a Spearman's correlation coefficient matrix, which highlights possible correlations between business characteristics and financing of the sample businesses. Based on table 13, intellectual property rights (IPR) do not seem to have any association with external financing, as observed in prior research. In the population of this study, there seems to be a weak positive correlation between internal equity and IPR. This may indicate similar findings to Hyytinen et al (2015) and Anginella et al. (2015) in the sense that innovative firms struggle to acquire external capital and are forced to have higher amounts of internal capital

The correlation matrix shows that auditing is positively associated with having external and internal equity investments, as well as external debt. The correlation between internal equity and auditing is significant at the 0.01 level (**), while the rest are on the 0.05 level (*). Employment is also positively associated with external equity investments. That is, when equity investments grow in category, so does the level of employment and vice versa. At this stage of analysis however, causality cannot be determined.

Table 13. The Spearman rank correlations between business characteristics and financing

	EXT_EQ	INT_EQ	EXT_DEB	INT_DEB	MAININD	BUSINMODEL	IPR	OFFICE	AUDIT	EMPLOY	FOUNDED
EXT_EQ	1,000										
INT_EQ	,399**	1,000									
EXT_DEB	,536**	,259*	1,000								
INT_DEB	,366**	,172	,395**	1,000							
MAININD	-,155	-,015	-,079	-,226*	1,000						
BUSINMODEL	,145	,885	,457	,033	,042	1,000					
IPR	,273	,202	-,066	-,030	,693	,011	1,000				
OFFICE	,204	,056	,537	,782	-,098	,011	1,000				
AUDIT	,054	,017	,089	,427	,357	,921	,273**	1,000			
EMPLOY	-,075	-,108	,007	,080	,065	,013	,273**	1,000			
FOUNDED	,485	,316	,948	,453	,547	,906	,010	,056	1,000		
	,247*	,280**	,254*	,170	,032	-,034	,069	,056	1,000		
	,019	,008	,016	,109	,768	,753	,516	,600	,600	1,000	
	,265*	,190	,067	,183	,047	-,112	,202	,050	,122	1,000	
	,012	,072	,530	,084	,660	,292	,056	,644	,253	1,000	
	-,196	-,125	-,100	,025	,176	,035	-,067	,077	-,373**	-,010	1,000
	,064	,240	,349	,819	,098	,741	,531	,476	,000	,924	1,000

The variables explained: EXT_EQ=External equity values in categories, INT_EQ=Internal equity values in categories, EXT_DEB=External debt values in categories, INT_DEB=Internal debt values in categories, MAININD=Main industry in category, BUSINMODEL=Business model in category, IPR=Intellectual property rights (yes), OFFICE=Location of office in category, AUDIT=Audited financial statement (yes), EMPLOY=Amount of employees in categories, FOUNDED=Year when founded

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

* . Correlation is significant at the 0.05 level (2-tailed).

5.1.1. Correlation between financing variables

The correlation matrix in table 13 identifies a moderate positive association between external equity and debt. Rising amounts of external equity seems to be correlated with increasing amounts of external debt and vice versa. A weak statistical significance is also found between external debt and internal debt, as well as between external equity and internal debt.

There is a negative correlation between the response to the external equity Likert scale question and the amount of external equity itself. Attachment 2 hosts dummy variables, many of which are derived from the variables seen in table 11. This matrix identifies that there is correlation between having no external equity and the acquisition of external equity as “Very Hard” on the Likert 5-point scale.

Interestingly, a statistical significance was found between stating that acquiring an investment was “Easy” and having between 100 001 – 250 000€ of external equity. This may indicate that acquiring 100 001 – 250 000€ in external equity can be considered easy in this responder group. The same is true for external debt, as those who had 100 001 – 250 000€ in external debt, stated that acquiring it was “Very Easy”. The significance was at the 0,01 level. In contrast, those who had under 10 000€ in external debt, stated that acquiring external debt financing was “Very Hard”.

The correlation matrix with the variables (attachment 2) INT_DEB and EXT_DEB_LIKERT show at the 0,01 level that businesses with 100 001 – 250 000€ in internal debt, had regarded acquiring external debt as “Very Easy”. Alternative those, who had no internal debt, indicated that acquiring external debt was “Hard” at the p-value level of 0,05. This may show that those, who struggled to acquire external debt, were not able to provide internal debt either. In addition, those who had between 100 001 – 250 000€ in internal debt, had stated that acquiring an external equity investment was “Very Easy”. (0,01 level) Additionally this may indicate that financiers who provide both external debt and equity consider existing internal debt financing as a positive signal. Internal debt also may indicate that the entrepreneur is committed in the business and has a personal stake in the business succeeding.

External equity and debt seems to negatively correlate with the variables indicating that external financing was received at different terms than required. Many of the responders that indicated they had acquired external debt or equity may have received it at terms different to their needs.

5.1.2. Entrepreneurial characteristics

Prior studies have examined the relationship of entrepreneurial characteristics to the capital structure or characteristics of the business. These entrepreneurial characteristics range from prior start up experience, educational or professional experience in accounting and finance to personal characteristics, such as age, gender or education. Kotha and George (2012) find that entrepreneurs with prior entrepreneurial experience are more likely raise financing from professional and personal sources. Zaleski (2009) hypothesises that entrepreneurs with academic certificates or education are more likely to acquire external equity financing.

In contrast to Zaleski (2009), Robb and Robinson (2010) find that entrepreneurs with prior start up experience or higher levels of education are more likely to acquire debt financing. Bjuggren and Laufer (2014) find in their study having prior experience with start ups tends to have a negative correlation to bank finance. According to table 14, education does not seem to correlate with any other variable, thus showing that it does not affect the financing outcome of the businesses in this sample.

Table 14 reports on the correlations between entrepreneurial characteristics and amounts of all classes of financing. This study finds a faint positive statistical significance between having prior expertise in financing and external debt. Based on table 14, there seems to be a positive correlation between having experience in accounting and having experience in finance. Having experience in entrepreneurship seems to correlate positively with having experience in accounting. Many entrepreneurs tend to manage their accounting matters themselves, which may be an explanation to this finding. This study does not find that prior entrepreneurship would negatively correlate with external debt, as Bjuggren and Laufer (2014) did.

The negative correlation between the BCKG_Gender variable and external equity indicates that there is a positive correlation between being a male and external equity. This naturally means that there exists a negative correlation between being a female and external equity. Prior experience in entrepreneurship and the variable gender correlate, but since the distribution of genders is highly skewed towards men, this finding may not carry much importance.

Table 14. The Spearman rank correlations between entrepreneurial characteristics and financing

	EXT_EQ	INT_EQ	EXT_DEB	INT_DEB	BCKG_GENDER	BCKG_EDU	BCKG_ACC	BCKG_FIN	BCKG_ENT
EXT_EQ	1,000								
INT_EQ	,399**	1,000							
EXT_DEB	,536**	,259*	1,000						
INT_DEB	,366**	,172	,395**	1,000					
BCKG_GENDER	-,244*	-,092	-,031	,063	1,000				
BCKG_EDU	,020	,388	,771	,554	,098	1,000			
BCKG_ACC	,074	-,012	,205	-,061	,033	-,003	1,000		
BCKG_FIN	,090	-,040	,052	,570	,760	,975	,542**	1,000	
BCKG_ENT	-,165	-,179	,035	,760	,904	,315	,000	,211*	1,000
	,119	,091	,158	-,058	,235*	,121	,046	,225	

The variables explained: EXT_EQ=External equity values in categories, INT_EQ=Internal equity values in categories, EXT_DEB=External debt values in categories, INT_DEB=Internal debt values in categories, BCKG_GENDER=The gender of responder, BCKG_EDU=Education of responder in category, BCKG_ACC=Experience in accounting (yes), BCKG_FIN=Experience in finance (yes), BCKG_ENT=Experience in entrepreneurship (yes)

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

* . Correlation is significant at the 0.05 level (2-tailed).

5.2. Regression analysis

This section discuss the process by which the regression model was formed and analyzed. The purpose of this section is to identify which variables affect the amount of each capital class examined. In choosing the variables, this study will lend from prior research shown in table 15 and try to test if their findings are visible in the data of this study. This section also aims to answer the research question 3, which is shown below:

Do the financing issues start ups face affect their capital structure?

In order to answer research question 3, it is necessary to examine whether or not the issues in acquiring external debt and equity have an affect on the capital structure of start ups. That is, are start ups forced to acquire internal financing, when external financing is available and debt financing when equity investments are not available or vice versa? Therefore, independent variables (EXT_EQ_PRO_X)(EXT_DEB_PRO_X) indicating the problems in acquiring financing were added to each respective regression model.

Entrepreneurial characteristics have been identified to affect the outcome of financing negotiations by prior research (Cassar 2004). Entrepreneurs with prior entrepreneurial experience have been found to be more likely to acquire external and internal financing (Cassar 2004; Huyghebaert & Van de Gucht 2002; Kotha & George 2012). Zaleski (2009) states that entrepreneurs with higher levels of education may be more probable to obtain external equity. Robb and Robinson (2010) state however that entrepreneurs with prior entrepreneurship and higher education are more likely to acquire external debt. In order to test the results of these previous studies, variables BCKG_ENT, BCKG_EDU were chosen to be a part of the regression model. Another novelty of this study is to examine whether professional or educational experience in accounting (BCKG_ACC) or finance (BCKG_FIN) translates into a higher likelihood of acquiring external financing. Considering that prior entrepreneurship has been identified to affect the outcome of financing negotiations, this study hypothesises that experience in accounting and finance may have a similar effect.

Zaleski (2009) identifies that having an office or separate work space for business purposes can issue credibility over residential spaces. Zaleski (2009) also explains that businesses with tangible products are more likely to obtain external equity than those who offer only services. The same may for businesses with intellectual property rights (IPR). Hyytinen et al. (2015) and Anginella et al. (2015) however argue that innovativeness, which may be indicated by IPR, may be a detriment to acquiring financing. Following the previously mentioned studies, variables OFFICE, BUSINMODEL and IPR were chosen

into the regression model. The novelty of this study is to examine whether an audited statement has an effect on acquiring external financing. As discussed in section 2.3.2.1, small businesses may try to alleviate information asymmetries and increase amounts of finance or lower costs through a voluntarily audited statement. It is interesting to find out if this sample of start up businesses also acts in a similar way and whether or not an audited statement would lead to larger sums of financing. Therefore, the independent variable AUDIT, expressing whether or not the business had been audited, was chosen into analysis. Table 15 below further depicts the reasoning for choosing the variables for ordinal logistic regression analysis. As seen in table 15, the dummy variables were coded yes=1, no=2, rather than traditionally yes=1 no=0, as the ordinal logistic regression function in SPSS23 does not allow for the reference category to be changed. Results would be opposite, if yes=1, no=0 coding would have been used.

Table 15. The independent variables chosen for regression analysis

Independent variable	Definition	Prior research
EXT_EQ_PRO_NOINV	A dummy variable indicating that no equity investment was received [1; yes, 2; no]	Resarch question 3
EXT_EQ_PRO_YESSMA	A dummy variable indicating that an equity investment was received, but at a smaller amount [1; yes, 2; no]	Resarch question 3
EXT_EQ_PRO_YESTERM	A dummy variable indicating that an equity investment was received, but at different terms [1; yes, 2; no]	Resarch question 3
EXT_DEB_PRO_NOINV	No debt financing was received [1; yes, 2; no]	Resarch question 3
EXT_DEB_PRO_YESSMA	A dummy variable indicating that an debt financing was received, but at a smaller amount [1; yes, 2; no]	Resarch question 3
EXT_DEB_PRO_YESTERM	A dummy variable indicating that debt financing was received, but at different terms [1; yes, 2; no]	Resarch question 3
BCKG_GENDER	A dummy variable indicating that the gender of the responder [1; male, 2; female]	(Robb & Robinson 2010)
BCKG_EDU	Highest achieved level of education [1; grade school, 2; high school, 3; some university courses, 4; bachelors degree, 5; masters degree, 6; advanced graduate work]	(Zaleski 2009; Robb & Robinson 2010)
BCKG_ACC	A dummy variable indicating experience in accounting [1; yes, 2; no]	Novelty of this study
BCKG_FIN	A dummy variable indicating experience in finance [1; yes, 2; no]	Novelty of this study
BCKG_ENT	A dummy variable indicating experience in entrepreneurship [1; yes, 2; no]	(Cassar 2004; Huyghebaert & Van de Gucht 2002; Kotha & George 2012; Bjuggren & Laufer 2014)
BUSINMODEL	Whether or not the business produces products, services or both. [1; service, 2; product, 3; both]	(Zaleski 2009)
IPR	A dummy variable indicating intellectual proprerty rights [1; yes, 2; no]	(Zaleski 2009, Hyytinen et al. 2015; Anginella et al. 2015)
OFFICE	The location of the businesses office [1; educational space, 2; rented or leased space, 3; owned property, 4; space of business contact/customer etc, 5; start up community or incubator, 6; residence or garage]	(Zaleski 2009)
AUDIT	A dummy variable indicating whether or not the financial statement has been audited [1; yes, 2; no]	Novelty of this study

Empirical regression models were put together using the dependent and independent variables examined above. The following regression model tests the explanatory value of the chosen independent variables in relation to the dependent variable external equity. This analysis includes 4 regression models with the same independent variables throughout. Hence, regression models 2 through 4 vary only in terms of the dependent

variable. Regression model 2 is formed with EXT_DEB as the dependent variable, model 3 with INT_EQ and model 4 with INT_DEB respectively. Models 2 through 4 will not be shown below, as the models are the same except for the dependent variables.

(3) Regression model 1

$$\begin{aligned} \text{EXT}_{\text{EQ}} = & \beta_0 + \beta_1 * \text{EXT}_{\text{EQPRO}_{\text{NOINV}}} + \beta_2 * \text{EXT}_{\text{EQPRO}_{\text{YESSMA}}} + \beta_3 * \text{EXT}_{\text{EQPRO}_{\text{YESTERM}}} \\ & + \beta_4 * \text{EXT}_{\text{DEBPRO}_{\text{NOINV}}} + \beta_5 * \text{EXT}_{\text{DEBPRO}_{\text{YESSMA}}} + \beta_6 \\ & * \text{EXT}_{\text{DEBPRO}_{\text{YESTERM}}} + \beta_7 * \text{EXT}_{\text{DEBPRO}_{\text{BUREAUCRACY}}} + \beta_8 * \text{BCKG}_{\text{GENDER}} \\ & + \beta_9 * \text{BCKG}_{\text{ACC}} + \beta_{10} * \text{BCKG}_{\text{FIN}} + \beta_{11} * \text{BCKG}_{\text{ENT}} + \beta_{12} \\ & * \text{BUSINMODEL} + \beta_{13} * \text{IPR} + \beta_{14} * \text{OFFICE} + \beta_{15} * \text{AUDIT} + \epsilon \end{aligned}$$

In order to examine the reliability of the upcoming results, it should be determined whether or not multicollinearity exists between the chosen independent variables. Multicollinearity refers to the collinearity between the independent variables and is indicated by the high correlation between the independent variables. The first method of detecting the existence of multicollinearity is to examine the correlation matrix made with the independent variables. Another way for detecting multicollinearity is to calculate the variance inflation factors (VIF). (Azcel 1989)

The correlation matrix, which is located in attachment 3, shows that the highest correlation is between experience in accounting and finance at 0.542. Other correlations are between negligible and weak. Attachment 3 also hosts the VIF and tolerance calculations for the independent variables. The largest VIF among the variables is 2.087 and is found with variable BCKG_FIN. When a VIF figure of 10 or more is present, action should be taken to ensure the realibility of the regression model (UCLA 2016). A VIF of 2.087 would entail the variance of the regression coefficient estimator to be 2.087 times what it should be (Azcel 1989). Seen as the largest VIF figure is rather low, there should be no need for action at this point. The following sections will discuss the regression results regarding each class of capital.

After choosing the variables for ordinal logistic regression, the models were run with SPSS23. As stated above, 4 models were formed with each class of capital having its own model and being the dependent variable. The results will be discussed seperately for each class of capital. Table 16 below reports on the results from the oridnal logistic regression model made with the previously mentioned variables. It aims to show which, if any, independent variables are able to predict the dependent variable.

Table 16. Regression results for models 1 through 4

Class	Variable	Model 1		Model 2		Model 3		Model 4					
		B	SE B	β	B	SE B	β	B	SE B	β			
External equity	No investment*	-3.69	0.86	0.00***	-2.19	0.83	0.01***	-1.98	0.80	0.01**	-2.79	0.90	0.00***
	Smaller than needed*	0.76	0.57	0.18	-1.10	0.58	0.06	1.05	0.58	0.07*	-2.24	0.68	0.00***
External debt	At different terms*	0.76	0.62	0.22	-0.15	0.64	0.32	-0.47	0.64	0.46	-1.00	0.69	0.14
	No investment*	0.62	0.83	0.46	-0.86	0.85	0.31	2.35	0.87	0.01***	0.89	0.87	0.31
Gender	Smaller than needed*	1.00	0.85	0.24	2.99	0.92	0.00***	0.69	0.87	0.43	2.77	0.93	0.00***
	At different terms*	0.03	0.62	0.96	1.36	0.67	0.04**	0.66	0.66	0.32	2.26	0.71	0.00***
Education	Male	1.72	0.79	0.03**	-0.43	0.81	0.29**	0.39	0.78	0.62	-1.88	0.81	0.02**
	Female	0 ^a	0 ^a		0 ^a	0 ^a		0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
Experience	Grade School	-0.17	2.13	0.94	1.63	2.20	0.46	0.31	2.16	0.89	2.34	2.26	0.30
	High School	-1.63	1.63	0.32	-0.89	1.64	0.59	-2.28	1.69	0.18	-0.65	1.69	0.70
Business model	Some University Courses	-0.28	1.13	0.81	-1.36	1.21	0.26	0.30	1.20	0.80	1.11	1.23	0.37
	Bachelors Degree	0.70	0.86	0.42	0.09	0.94	0.92	-0.15	0.98	0.88	-0.10	1.04	0.92
Innovativeness	Masters Degree	0.51	0.82	0.53	-0.33	0.90	0.71	1.59	0.96	0.10*	-0.46	0.97	0.63
	Advanced graduate work	0 ^a	0 ^a		0 ^a	0 ^a		0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
Office	Accounting*	0.38	0.63	0.55	1.69	0.67	0.01**	0.37	0.64	0.56	1.04	0.67	0.12
	Finance*	-0.15	0.61	0.81	0.18	0.66	0.11	-0.50	0.66	0.45	-1.31	0.69	0.06*
Residence or garage	Entrepreneurship*	0.45	0.48	0.35	0.72	0.50	0.11	1.52	0.52	0.00***	0.98	0.52	0.06*
	Service	-0.88	0.61	0.15	-0.16	0.60	0.79	-2.07	0.62	0.00***	-0.04	0.59	0.95
Start-up community or Incubator	Product	0.74	0.70	0.29	0.38	0.72	0.60	-0.26	0.73	0.72	1.46	0.75	0.05*
	Both	0 ^a	0 ^a		0 ^a	0 ^a		0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
Contact/Customer/Supplier	Intellectual property rights (IPR)*	2.00	0.58	0.00***	2.13	0.60	0.00***	1.86	0.60	0.00***	1.78	0.62	0.00***
	Audited financial statement*	1.10	0.55	0.05**	0.36	0.62	0.46	1.79	0.65	0.01***	1.37	0.66	0.04**
Space of Business	Educational Space	-0.60	1.50	0.69	-2.35	1.62	0.15	-1.10	1.58	0.49	0.27	1.59	0.87
	Rented or Leased Space	0.78	0.65	0.23	-1.77	0.94	0.06*	-0.26	0.90	0.77	-1.65	0.96	0.09*
Residence or garage	Owned Property	-0.12	1.93	0.95	-1.43	2.37	0.55	-2.61	2.41	0.28	-0.95	2.42	0.69
	Space of Business	0.55	1.19	0.65	-3.93	1.91	0.04**	-0.69	1.91	0.72	-0.85	1.94	0.66
R ²	Start-up community or Incubator	-0.02	0.77	0.98	-2.50	1.16	0.03**	-1.12	1.16	0.33	-1.88	1.19	0.11
	Residence or garage	0 ^a	0 ^a		0 ^a	0 ^a		0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
		0.53			0.48			0.52			0.45		

Note: For all variables marked with *, the reference category is 2:no, when 1:yes

0a = The reference category for the respective variable

Model 1; EXT_EQ; Model 2; EXT_DEB; Model 3; INT_EQ; Model 4; INT_DEB

***p<0.01, **p<0.05, *p<0.10

5.2.1. External equity

This section, along with the 3 following ones, will discuss the results reported in table 16. Model 1 in table 16 shows the ordinal logistic regression results with external equity as the dependent variable. The pseudo R^2 shows that the model is able to explain 53% of the variation in external equity through these variables. Out of all the independent variables, the only statistically significant ones in explaining the amount of external equity are “No external equity investment”, “Gender”, “IPR” and “Audited financial statement”. For all the results with dummy variables, the reference category is “No”, meaning that the results indicated in table 16 are in comparison to category “No” of each respective dummy variable.

It was to be expected that the variable “No external equity investment” would return a statistically significant result, as responders who had no external equity should have chosen this option. “No external equity investment” refers to the answer “yes” to the question of what the problem was in acquiring external equity. The negative regression (-3.69) coefficient shows that this variable explains lower levels of external equity and at a statistically very significant level ($p < 0.01$). With the reference category being “no”, the results are in comparison to those responders that did receive external equity investments. The importance of analysis through variable arises in the regression models 2 to 4, as it may indicate that problems in acquiring external equity lead to a larger likelihood of having increasing amounts of internal financing or debt financing.

Variable “Gender” shows that the men, in contrast to women, are more likely to have obtained external equity investments. The positive regression coefficient (1.72) shows that higher amounts of equity are likely. This result is statistically significant at the $p < 0.05$ level. As a word of caution, these results may be unreliable as the demographic distribution in this study was very heavily tilted towards men.

The p-value for “IPR” indicates a highly significant result at the 0.01 level. It shows that businesses possessing intellectual property rights, patents, copyrights, ie. are more likely to have more equity than those who do not possess these rights. The regression coefficient is 2.00. The reference category in this variable is “no” to the question of whether or not the business had IPR. This may explain that investors are likely to choose businesses that possess competitive advantages and have taken the time to legally secure these advantages. Since intellectual property rights generally indicate innovativeness, these results are opposite to Hyytinen et al. (2015), who found that innovativeness is a detriment to obtaining external financing.

Variable “Audited financial statement” is significant at the 0.05 level, showing that having been audited leads to slightly higher levels of external equity, as indicated by the coefficient of 1.10. An audited financial statement may be a prerequisite in acquiring financing, as it gives any investor an unbiased opinion of the businesses financial state. Alternatively, if the decision to be subjected to an audit was voluntary, it may have been initiated in order to differentiate lower risk businesses from high risk businesses, and to increase the likelihood of receiving investments (Kausar, Shroff & White 2016).

5.2.2. External debt

Model 2 is formed with the variable external debt being the dependent variable. The models pseudo R^2 indicates that the model is able to explain 48% of the variance in external debt. Interestingly, the variable “No external equity investment” is significant in explaining the level of external debt. The negative regression coefficient (-2.19) shows that the variable has a negative effect on external debt. According to this, businesses that indicated they had not received an external equity investment, had lower levels of external debt as well. This may indicate that these businesses were not able to receive debt financing or that they did not simply apply for any. The result is statistically significant at the p-value level of 0.01. As with all dummy variables in this regression analysis, the reference category are the responders that responded “No” to the question behind each variable.

Variable “Smaller than needed” with regard to external equity, shows a slightly positive regression coefficient (0.58) with the amount of external debt. This means that receiving a smaller than needed external equity investment seems to explain a higher amount of external debt. This result is significant only at the 0,10 level. Oddly, the variable “No external debt financing” does not give a statistically significant result, nor a negative regression coefficient, as would be expected. Having received no external debt should result in lower amounts of external debt.

Having received a smaller than needed amount of debt or at different terms than needed seem to show that higher amounts of debt are however likely, according to the regression coefficient. This is understandable, as responders not receiving debt financing according to their wishes, would still have received some amount of debt financing. Variable “Smaller debt financing than needed” is significant at the 0.01 level, while “At different terms” is at the 0.05 level.

Male responders, in comparison to female responders seem to be slightly less likely to employ external debt, as indicated by the regresson coefficient of -0.43. The result

statistically significant at the 0.05 level. When examining the results regarding variable Gender, caution should be exercised, as the sample is clearly skewed towards the male gender. These results are however in line with Robb & Robinson (2010), who also, in a very male-centric sample identified that females receive less outside capital than other groups.

This study chose to examine what kind of an impact experience in accounting and/or financing would have on acquiring financing. Results indicate that the experience does not affect levels external equity, while it does for external debt. Individuals with experience in accounting were more likely to have external debt financing, as shown by the regression coefficient of 1.69. The result is statistically significant at the 0.01 level. This may show that individuals with accounting experience are more likely to acquire debt financing, through their attitude towards debt financing, or their skills in portraying pertinent accounting information to potential debt financiers.

As with external equity, IPR is statistically significant at the 0.01 level in explaining the level of external debt. The effect of having IPR is positive (2.13) on the amount of external debt and clearly shows that innovative businesses are more likely to have external investments or financing than those who are not deemed innovative. Based on the results with both external equity and debt, IPR can be said to be the one of the most promising predictors for receiving external financing in this sample.

Interestingly, an audited statement does not seem to affect the likelihood of receiving debt financing, as the variable is not statistically significant. Regarding the choice of office made by entrepreneurs, model 2 finds that in comparison to having an office situated at a residence or garage, a negative effect on external debt is shown for offices located in rented or leased spaces (-1.77), spaces belonging to a customer or supplier (-3.93) or at a start up community or incubator (-2.50). This may imply that these businesses are either, not viable candidates for external debt financing or those that choose not to acquire external debt for reasons unknown to this study. These businesses may not possess the collateral to acquire debt financing from financial institutions, as they are not in possession of their office spaces. Zaleski (2009) argued that businesses with office spaces outside of the residences or their founders, are more likely to acquire external financing. This study does not support these findings, as the findings are opposite.

5.2.3. Internal equity

According to table 16, responders that indicated they had not received any external equity investments had a lower likelihood to gain internal equity. The regression estimate -1.98

shows that there is a negative relation between not having external equity investments and internal equity. The result is significant at the 0.05-level. However, receiving a smaller than needed external equity investment seems to result in slightly higher levels of internal equity (1.05).

Contrary to the findings regarding the relationship of external equity and internal equity, not having received external debt financing, seems to result in higher (2.35) amounts of internal equity. While there is no definite answer to this finding, it may be possible that entrepreneurs that cannot acquire external debt, are forced to rely on internal equity.

The regression results for internal equity also imply that masters level graduates are more likely (1.59) to have higher amounts of internal equity. This result is only valid at the 0.10-level, so its statistical significance is questionable. Responders with prior entrepreneurial experience may be more likely (1.52) to have more internal equity. The opposite is however true for businesses that produce only services. The regression coefficient of -2.07 indicates that lower levels of internal equity are expected for these businesses. The results for both entrepreneurial experience and service providing firms are significant at the 0.01-level.

As with previous classes of capital, IPR seems to very significant in explaining internal equity. It is significant at the 0.01-level and shows that positive relation (1.86) exists between IPR and internal equity. The variable auditing is also significant in explaining the level of internal equity. Regression model 3 shows that auditing has a positive effect (1.79) on the level of internal equity. The Pseudo R² shows that the model explains 52% of the dependent variable internal equity.

5.2.4. Internal debt

As with internal equity, a response of “No investment” to the question regarding issues with external equity has negative effect (-2.79) on the amount of internal debt. Contrary to internal equity, the variable “Smaller equity investment than needed” has a negative effect (-2.24) on internal debt, showing that lower levels of internal debt are expected. These results are significant at the 0.01 level. This shows that businesses that had issues in acquiring external equity did not generally have more internal debt than those who had no issues acquiring external equity.

The amount of internal debt is positively (2.77) affected by variable “Smaller debt financing than needed” and “At different terms” (2.26). These results would indicate that businesses not able to acquire adequate levels of external debt are financed also internally.

Internally refers to the fact that the financing originated from those, who are in close relation to the business receiving financing. Such individuals may be the entrepreneur, shareholders, board members themselves, or their family or friends. Interestingly however, the fact that a business has not received any external debt does not seem to affect the level of internal debt

Variable “Gender” shows that lower levels (-1.88) of internal debt are expected for males. However the results for the variable gender are likely to be inconclusive, as the demographic in this study is highly skewed towards men. The regression results indicate that experience in finance has a negative effect (-1.31) on internal debt, while experience in entrepreneurship has a positive effect (0.98). These results are only significant at the 0.10 level, however.

Businesses that only offer tangible products are more likely to employ internal debt, according to the regression results. The regression coefficient of 1.46 shows a positive effect on the level of internal debt. The results are in comparison to businesses that produce both services and products and are significant at the 0.10 level.

Variable IPR has shown a positive effect on all types of capital this far. As with previously examined classes of capital, IPR appears to have a positive effect (1.78) on the level of internal debt. The result is significant at the 0.01 level. Examining all the evidence regarding businesses with IPR, it seems that they are able to acquire all types of financing. They may be more competitive than others and are more viable investment possibilities to financiers. IPR can be deemed one of the most valuable variables in explaining the financing of start ups in this study. However, considering that the sample consists of mainly high-tech software and IT businesses, the results may not reflect start ups across all main industries.

The fact that businesses have subjected themselves to an audit appears to have a positive effect (1.37) the amount of internal debt. The result is significant at the 0.05 level. This may indicate that businesses that engage with auditing to alleviate information asymmetries, even when debt is originated internally. Alternatively it may mean that these businesses are already obligated to be audited, due to legislation or contract.

5.3. Validity, limitations and reliability of results

Some of the extensively referenced research, for example by Berger and Udell (1998), Fluck et al. (1998) Garmaise (2001) and Cassar (2004) may not be as relevant in the current start up landscape as they were when first published. The lack of pertinent

research forces this study to rely on their findings, even when their research findings may not represent the changing world of start ups. It is undeniably true that the small business world has gone through drastic changes in the last 10-20 years. Additionally, the fact that the geographics and demographics are largely different between prior research and this study, may explain some of the differences found. The validity of comparisons made to these studies in previous sections may be limited therefore.

Surveys that include prizes are commonly susceptible to response falsification or harmful selection of responders. However, in the case of this study, there is reason to believe that the responses are truthful and not guided by the financial incentive, as 42.2% chose not to enter the optional raffle when given the option. This may indicate that at the very least, these responders took part in the survey for charitable reasons or did not want to supply an email address in fear of it getting into wrong hands.

The fact that the responder businesses were gathered through only start up incubators or start up event organizers in Finland may limit the reliability of the obtained data. Since their data does not include businesses that did not reach out actively to event organizers or start up incubators, it may not represent the characteristics of all start ups. However, it proved impossible to contact such businesses as they were not included in any lists provided for this research or to be found in other databases or other sources.

The data is very homogenous in terms of main industry. The software and internet and computer and electronics main industries made up roughly 75% of the sample. Due to this, the data may represent the characteristics of mostly high-tech software and computer start ups.

The questionnaire received some minor corrections while being open for responses, as some responders indicated that they had technical difficulties or did not understand the difference between externally and internally originated finance. These issues were however addressed promptly after receiving feedback. For example, the large amount of N/A answers caused a loss of information, as suitable answers were not available and responders did not bother to elaborate in the “custom answer” field. It may however be that, before making corrections to the survey, the issues deterred some responders or caused confusion in the responding process for those who responded. Many of the responders are mostly highly educated individuals, which indicates that there may have been unwanted selection of responders.

With a sample as small as 90 responders, some of the regression model results may not be completely conclusive. Small amounts of responders in certain variables or responses may trick statistical programs into believing there is significant result, when there is none.

6. CONCLUSIONS AND SUMMARY

The purpose of this study was to examine the financing of start ups in Finland through their financing decisions, capital structure and financial issues. The main interest of this study was to find out the currently most used financing channels and whether or not start ups experience issues in obtaining financing. This study also aimed to investigate whether certain characteristics and reported issues might affect the capital structure of the responder businesses. The data for this study was collected through an online survey, sent to verified start up entrepreneurs in Finland.

Prior studies have highlighted the problematic state start ups find themselves in while acquiring financing. Many experience issues while acquiring funding for their business, due to their lack of a track record, proof for viability of the business model and the having the right investors. While prior studies have examined the financing of start ups, there does not appear to be similar empirical studies conducted in Finland.

The businesses that responded to the survey in this study were mostly young, innovative high-tech start ups with close to 70% of the responders operating in software, internet and computer industries. The entrepreneurs of these business were highly educated individuals, most of which had prior experience in entrepreneurship.

For external equity and debt, the most frequent amount of finance was found in group 100 001-250 000€. In terms of external equity, angel investors were responsible for 41% of all investments, while governmental institution finance amounted to 23%. For external debt 31% came from governmental institutions and 30% from various financial institutions. The average equity ratio of the sample businesses is 52%, which clearly indicates a significant amount of equity, challenging the assumption that bank debt would dominate the capital structure. Bjuggren and Laufer (2014) in a Swedish study conclude similarly, but point out that internal equity carries more importance than bank debt. This study did not find internal financing to be more important than external financing to start ups.

The findings of this study differ drastically from prior research, such as Berger and Udell (1998) and the Kauffman Firm Survey (2011). Angel investors and governmental institutions are most important source of equity for Finnish start ups. Bank financing, while an important source of commercial and personal debt, does not dominate the capital structure. External debt cannot be said to dominate early stage capital structures in start ups either. Based on the findings of this study, governmental financing appears to play a much larger role in start up financing than previously thought.

Finland appears to have created a large supply of governmental financing that is directed to high-growth start ups. Puttonen (2010) argues however that the large supply of governmental financing saturates the market and causes competition with private lenders.

Responders indicated that the largest issues in acquiring equity were receiving financing for a smaller amount than needed, being declined financing altogether or receiving financing with different terms than wished. Reasons for these difficulties in the case of equity, were the fact that the business was too new or unproven, weak revenue and disagreements on valuation. For debt, issues ranged from the previously mentioned ones to problems related to tighter relations. The issues were largely different than assumed in research question 2, which expected similar findings than the Kauffman Survey (2011). Despite experiencing issues while searching for financing, many businesses have succeeded to acquire large investments. Responders generally felt acquiring equity investments as slightly harder than acquiring debt financing. This study was not able to conclusively show that business, which experienced issues with acquiring external finance exhibit more internal finance, as hypothesized in research question 3.

The correlation analysis finds that there is a positive correlation with having been audited and the levels of all capital classes, except internal debt. The regression models also showed this result, but as indicated by the regression coefficients, the effect can be deemed a minor one. The regression model finds variables IPR and auditing the most significant in explaining the capital structure out of all business characteristics. Intellectual property rights have a positive effect on the level of capital for all external and internal financing. Auditing had a statistically significant positive effect on all classes, but external debt. Out of the entrepreneurial characteristics, experience in accounting increased the likelihood of acquiring external debt financing, while experience in entrepreneurship appeared to have a positive effect on internal equity and debt. Businesses that indicated they had not received external equity investments, likely had lower levels of external debt, internal equity and internal debt as well. Whether or not a business has received external equity investments, appears to predict the amounts of external debt and internal financing. Having received an external equity investment may thus indicate the receiving businesses' competitiveness in relation to others.

Based on the findings on this study, additional research could be conducted on the relationship of governmental financing to start ups and the process by which such financing happens. If additional research was conducted qualitatively, the process of how acquiring governmental financing impacts start ups may be better understood.

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ATTACHMENTS

ATTACHMENT 1. The self-completion survey sheet

Startup-yritysten rahoitus

Tämä kyselytutkimus toteutetaan osana Vaasan yliopistossa suoritettavaa maisterin työtä startup-yritysten rahoituksesta. Tutkimuksen tavoitteena on tarkastella startup-yritysten alku- ja varhaisvaiheen pääomarakennetta, rahoitusta ja rahoituksen saannissa mahdollisesti koettuja haasteita.

Vastaamalla tähän tutkimukseen Te autatte luomaan kokemusperäistä dataa liittyen startup-yritysten rahoitukseen. Startup-yritysten rahoituksen tutkimuskenttä on vielä varsin uusi ja kokemusperäistä dataa Suomesta hyvin vähän. Arvostan suuresti tähän tutkimukseen käyttämäänne aikaa.

Täyttämällä tämän kyselylomakkeen, voitte osallistua arvontaan, jonka palkintona on 50€ lahjakortti Amazon.com:iin. Voittajaan otetaan yhteyttä 19.04.2016

Mikäli teille ilmaantuu kysyttävää tai kommentoitavaa, ottakaa yhteyks alla näkyvään sähköpostiosoitteeseen:

Remi Veijalainen
U97391@student.uwasa.fi

Kyselytutkimuksen täyttämässä menee noin 10 minuuttia.

Vastauksenne käsitellään luottamuksellisesti, eikä luovuteta kolmansille tahoille. Tuloksia käytetään vain tämän maisterin työn tekemiseen.

*Required

Yrityskohtaiset kysymykset

1. **Minä vuonna yrityksenne on perustettu ?**
 (vvvv) *

.....

2. **Mikä seuraavista vaihtoehdoista kuvaa parhaiten yrityksenne yhtiömuotoa? ***

Mark only one oval.

- Avoin yhtiö
- Osakeyhtiö
- Osuuskunta
- Kommandiittiyhtiö
- Yksityinen elinkeinonharjoittaja
- Other:

3. Mikä seuraavista vaihtoehtoista kuvaa parhaiten yrityksenne toimialaa? *

Mark only one oval.

- Maatalous, metsätalous
- Bioteknologia
- Yrityspalvelut
- Tietokonetekniikka ja elektroniikka
- Rakentaminen ja kiinteistönvälitys
- Kuluttajapalvelut
- Koulutus
- Energia
- Rahoituspalvelut
- Terveys- ja sosiaalipalvelut
- Valmistus
- Media ja viihde
- Jälleenmyynti
- Ohjelmistot ja internet
- Telekommunikaatio
- Kuljetus ja säilytys
- Virkistys-, harrastus-, ja vapaa-ajantoiminta
- Tukkukauppa ja jakelu

4. Onko yrityksenne tarkoitus tuottaa jotain alla olevista? *

Mark only one oval.

- Palvelu
- Tuote
- Molempia

5. Onko yrityksellänne hallussa immateriaalioikeuksia, kuten patenteja, tavaramerkkejä tai tekijänoikeuksia? *

Mark only one oval.

- Kyllä
- Ei

6. Mikä seuraavista vaihtoehtoista sopii parhaiten kuvaamaan toimitilojanne? **Mark only one oval.*

- Asuinrakennus tai autotalli
- Vuokrattu tai leasattu tila
- Yrityksen omistama tila
- Tila, jossa liikekumppani/asiakas/tavarantoimittaja sijaitsee
- Startup-yhteisö tai inkubaattori
- Koulutuksellinen tila (Yliopisto, korkeakoulu yms.)
- Postilokero
- Other:

7. Valitse seuraavista yrityksenne liikevaihtoa parhaiten kuvaava vaihtoehto. **Mark only one oval.*

- Ei ollenkaan
- Alle 10 000 €
- 10 001 – 50 000 €
- 50 001 – 100 000 €
- 100 001 – 250 000 €
- 250 001 – 500 000 €
- 500 001 – 750 000 €
- 750 001 – 1 000 000 €
- 1 000 001 – 2 000 000 €
- 2 000 001 – 3 000 000 €
- 3 000 001 – 4 000 000 €
- 4 000 001 – 5 000 000 €
- Yli 5 000 001€

8. Onko/oliko yrityksellänne palkattua henkilöstöä aloitus- tai varhaisvaiheessa? **Mark only one oval.*

- Ei ollenkaan
- 1-5
- 6-10
- 11-15
- 16-20
- 21-25
- 26+

9. **Onko yrityksenne tilinpäätöksestä annettu tilintarkastajan lausuntoa aloitus- tai varhaisvaiheen aikana? ***

Mark only one oval.

- Kyllä
- Ei

10. **Mikä oli pääasiallinen syy tilintarkastukselle?**

Mark only one oval.

- Lakimääräinen velvoite
- Rahoitussopimuksen määräämä velvoite
- Yhtiöjärjestyksen määräämä velvoite
- Luotettavuuden lisäämiseksi
- Vapaaehtoisesti
- En osaa sanoa
- Other:

11. **Hyötyikö yritys mielestäsi tilintarkastuksesta?**

Mark only one oval.

- Kyllä
- Ei
- En osaa sanoa

Rahoitukselliset kysymykset

Seuraavat kysymykset liittyvät yrityksenne pääomarakenteeseen, rahoitukseen ja mahdollisiin sijoituksiin aloitus- tai varhaisvaiheessa. Viimeiset kysymykset liittyvät mahdollisiin rahoituksellisiin haasteisiin, joita koitte hakiessanne rahoitusta.

Aloitusvaiheeksi voidaan katsoa se yrityksen kehityksellinen jakso, kun yrittäjillä on bisnes- tai tuoteidea, mutta operatiivinen toiminta ei ole vielä alkanut täysimittaisesti.

Varhaisvaiheeksi voidaan lukea se yrityksen kehityksellinen ajanjakso, kun tuotekehitystä ollaan saattamassa loppuun ja markkinointi/myynti aloitetaan.

Sisäinen rahoitus

Yrityksen sisäinen rahoitus on usein peräisin perustajilta, ystäviltä, sukulaisilta tai muilta tahoilta, jotka ovat läheisessä suhteessa yritykseen.

Vieras pääoma on yritykseen sen ulkopuolisten tahojen sijoittamaa pääomaa, jolla on aina takaisinmaksuvelvollisuus toisin kuin omalla pääomalla. Vieras pääoma voidaan jakaa lyhytaikaiseen ja pitkäaikaiseen velkaan.

Oma pääoma ei ole välttämättä takaisinmaksuvelvollisuuden alaista ja on luonteeltaan pysyvämpää. Tässä tutkimuksessa ollaan kiinnostuneita osakepääoma ja/tai sijoitetun vapaan oman pääoman sijoituksista

12. Valitkaa alta yrityksen sisäiseen vieraan pääoman ehtoiseen rahoitukseen parhaiten sopiva euromääräinen vaihtoehto. (Aloitus- tai varhaisvaiheessa) *

Mark only one oval.

- Ei ollenkaan
- Alle 10 000 €
- 10 001 – 50 000 €
- 50 001 – 100 000 €
- 100 001 – 250 000 €
- 250 001 – 500 000 €
- 500 001 – 750 000 €
- 750 001 – 1 000 000 €
- 1 000 001 – 2 000 000 €
- 2 000 001 – 3 000 000 €
- 3 000 001 – 4 000 000 €
- 4 000 001 – 5 000 000 €
- Yli 5 000 001€

13. Valitkaa alta yrityksen sisäiseen oman pääomaan ehtoiseen rahoitukseen parhaiten sopiva euromääräinen vaihtoehto. (Aloitus- tai varhaisvaiheessa) *

Mark only one oval.

- Ei ollenkaan
- Alle 10 000 €
- 10 001 – 50 000 €
- 50 001 – 100 000 €
- 100 001 – 250 000 €
- 250 001 – 500 000 €
- 500 001 – 750 000 €
- 750 001 – 1 000 000 €
- 1 000 001 – 2 000 000 €
- 2 000 001 – 3 000 000 €
- 3 000 001 – 4 000 000 €
- 4 000 001 – 5 000 000 €
- Yli 5 000 001€

Ulkoinen rahoitus

Ulkoinen rahoitus on peräisin yrityksen ulkopuolelta, eli sellaisilta tahoilta, jotka eivät ole läheisesti suhteessa yritykseen. Tällaisia tahoja ovat muut kuin osakkeenomistajat, perustajat, ystävät, perheenjäsenet tai muut tällaisiin rinnastettavat henkilöt ja yritykset.

Vieras pääoma on yritykseen sen ulkopuolisten tahojen sijoittamaa pääomaa, jolla on aina takaisinmaksuvelvollisuus toisin kuin omalla pääomalla.

Oma pääoma ei ole välttämättä takaisinmaksuvelvollisuuden alaista ja on luonteeltaan pysyvämpää.

17. **Minkälaisia mahdollisia ongelmia liittyi ulkoisen oman pääoman sijoituksen hankintaan? ***

Tick all that apply.

- Emme saaneet sijoitusta ollenkaan
- Saimme sijoituksen, mutta haluttua pienemmän suuruisena
- Saimme sijoituksen, mutta eri ehdoilla kuin halusimme
- En osaa sanoa
- Other:

18. **Mikä syy/mitkä syyt teidän mielestänne johtivat ongelmiin ulkoista oman pääoman ehtoista sijoitusta hakiessa? ***

Tick all that apply.

- Heikko liikevaihto
- Heikko kannattavuus
- Yritys tai businessmalli oli liian uusi tai todistamaton
- Ongelma businessmalliin liittyen
- Ongelma tuotteeseen tai tuotantoon liittyen
- Erimielisyys arvonmäärityksestä
- Ongelma liittyen yrityksen johtoon
- En osaa sanoa
- Other:

19. **Valitkaa alta yrityksen ulkopuolisen vieraan pääoman ehtoiseen rahoitukseen parhaiten sopiva euromääräinen vaihtoehto. (Aloitus- tai varhaisvaiheessa) ***

Mark only one oval.

- Ei ollenkaan
- Alle 10 000 €
- 10 001 – 50 000 €
- 50 001 – 100 000 €
- 100 001 – 250 000 €
- 250 001 – 500 000 €
- 500 001 – 750 000 €
- 750 001 – 1 000 000 €
- 1 000 001 – 2 000 000 €
- 2 000 001 – 3 000 000 €
- 3 000 001 – 4 000 000 €
- 4 000 001 – 5 000 000 €
- Yli 5 000 001€

20. **Mikä/Mitkä olivat kyseisen ulkopuolisen vieraan pääoman ehtoisen rahoituksen lähteet? ***

Tick all that apply.

- Crowdfunding
- Yrityskauppa
- Investointipankki
- Yrittäjälaina
- Yrityslaina
- Valtion virasto
- Rahoituslaitos
- Tavarantoimittaja tai asiakas
- En osaa sanoa
- Other:

21. **Valitkaa seuraavaan väittämään mielestänne parhaiten sopiva vaihtoehto "Ulkoisen vieraan pääoman rahoituksen hankinta yrityksellemme oli _____". ***

Mark only one oval.

	1	2	3	4	5	
Hyvin helppoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hyvin vaikeaa

22. **Minkälaisia ongelmia liittyi ulkoisen vieraan pääoman ehtoisen rahoituksen hankintaan? ***

Tick all that apply.

- Emme saaneet sijoitusta ollenkaan
- Saimme sijoituksen, mutta haluttua pienemmän suuruisena
- Saimme sijoituksen, mutta eri ehdoilla kuin halusimme
- En osaa sanoa
- Other:

23. **Mikä syy/mitkä syyt teidän mielestänne johtivat ongelmiin ulkoista vieraan pääoman ehtoista rahoitusta hakiessa? ***

Tick all that apply.

- Heikko liikevaihto
- Heikko kannattavuus
- Yritys tai businessmalli oli liian uusi tai todistamaton
- Ongelma businessmalliin liittyen
- Tiukentuneet lainaehdot
- Ongelma tuotteeseen tai tuotantoon liittyen
- Erimielisyys valuaatiosta
- Ongelma liittyen yrityksen johtoon
- En osaa sanoa
- Other:

24. **Kuinka kauan mielestänne nämä ongelmat pitkittivät rahoituksen saantia? ***

Mark only one oval.

- Muutaman päivän
- Muutaman viikon
- Muutaman kuukauden
- Noin vuoden
- Yli vuoden
- Emme saaneet rahoitusta
- En osaa sanoa

25. **Valitkaa mielestänne paras vaihtoehto seuraavaan väittämään: "Kokemillamme ongelmilla on ollut yritystoimintaamme selkeästi negatiivisia vaikutuksia". ***

Mark only one oval.

	1	2	3	4	5	
Täysin eri mieltä	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Täysin samaa mieltä

TAUSTAKYSYMYKSET

26. **Oletteko? ***

Mark only one oval.

- Mies
- Nainen
- Other:

27. **Mikä on ikänne? ***

.....

28. **Mikä on ylin tähän mennessä saavuttamanne koulutustaso? ***

Mark only one oval.

- Peruskoulu
- Lukio
- Joitakin korkeakoulukursseja
- Alempi korkeakoulututkinto
- Ylempi korkeakoulututkinto
- Tohtorin tutkinto

29. **Onko teillä ammattimaista kokemusta tai koulutusta laskentatoimessa? ***

Mark only one oval.

- Kyllä
- Ei

30. **Onko teillä ammattimaista kokemusta tai koulutusta rahoituksessa? ***

Mark only one oval.

- Kyllä
- Ei

31. **Onko teillä aiempaa kokemusta yrittäjyydestä? ***

Mark only one oval.

- Kyllä
- Ei

32. **Valitkaa alta parhaiten asemaanne yrityksessä kuvaava vaihtoehto: ***

Mark only one oval.

- Toimitusjohtaja
- Teknologijahtaja
- Talousjohtaja
- Muu johtoryhmän jäsen
- Hallituksen jäsen
- Osakas/osakkeenomistaja
- Muu työntekijä
- Other:

33. **Täyttäkää alla olevaan tilaan sähköpostiosoitteenne, mikäli haluatte osallistua arvontaan. (Yhteystietoja käytetään vain voittajan tavoittamiseen).**

Mark only one oval.

- En halua osallistua arvontaan. *Stop filling out this form.*
- Other: *Stop filling out this form.*

ATTACHMENT 2. The correlation matrix of all dummy variables used

	External equity											External debt																						
	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11												
(thousand s)																																		
1	<10	1,000	-.100	-.086	-.117	-.052	.073	.111	.007	-.070	-.142	.153	.011	-.070	.088	.069	-.081	-.037	-.065	.102	.073	-.108	-.095	-.052	-.052	.038	-.042	-.063	.176	-.059	-.007	.028	-.125	.292**
2	10-50	.350	.422	.272	.624	.493	.289	.949	.509	.182	.150	.917	.509	.411	.521	.449	.732	.544	.071	.493	.309	.372	.624	.624	.720	.693	.553	.096	.582	.951	.791	.239	.005	
3	50-100	-.100	1,000	-.145	-.198	-.089	-.248*	.353**	.125	-.001	-.023	.038	-.190	.117	.208*	-.145	.179	-.062	.017	-.096	.253*	-.014	.065	.218*	.065	-.079	.098	-.013	-.079	.176	-.058	-.052	.097	-.001
4	100-250	.350	.172	.061	.406	.019	.001	.242	.990	.827	.720	.073	.273	.050	.172	.091	.562	.874	.369	.016	.895	.129	.544	.039	.460	.358	.905	.460	.096	.589	.766	.362	.990	
5	250-500	-.052	-.089	-.076	-.104	1,000	-.130	-.063	-.104	-.063	.368**	-.052	.054	-.063	.003	.095	-.072	-.033	.159	-.003	-.130	.193	-.085	-.047	.215*	-.089	-.134	.197	-.089	-.052	.021	.184	-.112	-.063
6	None	.624	.406	.475	.329	.222	.558	.329	.558	.000	.624	.611	.558	.979	.372	.501	.761	.136	.980	.222	.069	.428	.663	.042	.406	.209	.062	.406	.624	.848	.082	.295	.558	
7	<10	.493	.019	.803	.126	.222	.099	.005	.099	.001	.169	.000	.099	.306	.618	.271	.394	.185	.943	.750	.056	.211	.222	.222	.721	.726	.712	.325	.169	.075	.531	.969	.907	
8	10-50	.111	.353**	.029	-.140	-.063	-.175	1,000	-.140	-.084	-.170	-.070	-.141	.225**	.221*	-.103	-.097	-.044	.089	-.075	.200	-.019	-.114	-.063	-.119	.005	-.023	.235*	-.070	-.049	-.056	.053	.225*	
9	50-100	.299	.001	.784	.188	.558	.099	.188	.429	.109	.509	.186	.033	.036	.336	.364	.682	.406	.482	.059	.862	.285	.558	.558	.263	.962	.832	.026	.509	.649	.737	.619	.033	
10	100-250	.007	.125	.100	-.088	-.104	-.291**	-.140	1,000	-.140	-.283**	-.117	-.083	.072	.122	.100	-.161	.120	-.129	.173	-.034	.089	-.106	.034	-.104	-.037	-.046	.092	.044	-.117	.098	.068	.029	-.034
11	250-500	.949	.242	.347	.410	.329	.005	.188	.188	.007	.272	.455	.501	.253	.347	.130	.261	.226	.103	.749	.405	.321	.753	.329	.731	.668	.386	.681	.272	.357	.522	.789	.749	
	50-100	-.070	-.001	.293**	-.140	-.063	-.175	-.084	-.140	1,000	-.170	-.070	-.141	.084	.028	.293**	.041	-.044	-.078	.115	.106	-.019	-.114	-.063	-.063	-.119	.283**	-.111	-.001	-.070	.053	.139	-.049	-.084
	100-250	.509	.990	.005	.188	.558	.099	.429	.188	.109	.509	.186	.429	.794	.005	.698	.682	.467	.280	.319	.862	.285	.558	.558	.263	.007	.296	.990	.509	.619	.192	.649	.429	
	250-500	.182	.827	.050	.000	.000	.001	.109	.007	.109	.182	.406	.482	.834	.236	.000	.429	.656	.303	.541	.040	.512	.980	.000	.254	.459	.764	.113	.000	.503	.644	.617	.109	
		.153	.038	-.086	.007	-.052	-.146	-.070	-.117	-.070	-.142	1,000	-.089	.111	.138	.069	-.081	-.037	-.065	-.031	-.037	.022	.048	-.052	-.052	-.100	-.042	.144	.038	-.059	-.125	.130	-.007	.111
		.150	.720	.422	.949	.624	.169	.509	.272	.509	.182	.405	.299	.195	.521	.449	.732	.544	.773	.732	.839	.656	.624	.624	.350	.693	.175	.720	.582	.239	.220	.951	.299	

	Internal debt										Internal equity																											
12	0	.011	-.190	-.057	-.083	.054	.411**	-.141	-.083	-.141	-.089	-.089	1.000	-.226*	-.443**	-.275**	-.260*	-.117	.159	-.036	-.055	.020	.099	-.057	-.057	.006	-.074	-.096	.071	-.089	-.010	.014	-.178	.030				
		.917	.073	.595	.435	.611	.000	.186	.435	.186	.406	.405	.032	.000	.009	.013	.270	.134	.735	.605	.848	.354	.595	.957	.489	.369	.506	.405	.926	.896	.092	.776						
13	<10	-.070	.117	.161	-.034	-.063	-.175	.225*	.072	-.084	-.075	.111	-.226*	1.000	-.165	-.103	-.097	-.044	-.078	.115	.013	-.130	.130	-.063	-.063	-.001	-.180	.155	.117	-.070	.053	.051	-.049	.071				
		.509	.273	.129	.749	.558	.099	.033	.501	.429	.482	.299	.032	.120	.336	.364	.682	.467	.280	.907	.222	.221	.558	.558	.990	.089	.145	.273	.509	.619	.630	.649	.509					
14	10-50	.088	.208*	.046	-.142	.003	-.109	.221*	.122	.028	.022	-.138	-.443**	-.165	1.000	-.201	-.190	-.086	-.048	.022	.125	.023	-.147	.003	-.123	-.087	.051	.050	.060	-.025	-.041	-.140	.149	.124				
		.411	.050	.669	.181	.979	.306	.036	.253	.794	.834	.195	.000	.120	.057	.073	.422	.651	.834	.241	.829	.167	.979	.249	.417	.631	.637	.571	.814	.702	.187	.160	.243					
15	50-100	.069	-.145	.100	.010	.095	-.053	-.103	.100	.293**	-.126	.069	-.275**	-.103	-.201	1.000	-.118	-.053	-.094	-.045	.027	.316**	-.139	-.076	.095	-.145	.096	.059	-.045	-.086	-.010	.190	-.010	.190	-.010	-.103		
		.521	.172	.348	.925	.372	.618	.336	.347	.005	.236	.521	.009	.336	.057	.269	.618	.376	.673	.803	.002	.192	.475	.372	.172	.386	.582	.676	.422	.928	.928	.073	.928	.336				
16	100-250	-.081	.179	-.118	.312**	-.072	-.117	-.097	-.161	.041	.399**	-.081	-.260*	-.097	-.190	-.118	1.000	-.050	.059	.059	.050	-.149	.087	-.072	.288**	.179	-.041	-.071	-.137	.404**	.009	-.008	-.082	-.097				
		.449	.091	.269	.003	.501	.271	.364	.130	.698	.000	.449	.013	.364	.073	.269	.638	.578	.578	.638	.161	.414	.501	.006	.091	.699	.504	.198	.000	.932	.942	.444	.364					
17	250-500	-.037	-.062	-.053	.312**	-.033	-.091	-.044	.120	-.044	.084	-.037	-.117	-.044	-.086	-.053	-.050	1.000	-.040	.084	-.091	-.067	-.059	.333**	-.033	-.062	.075	.057	-.062	-.037	-.078	.049	.107	.044				
		.732	.562	.618	.003	.761	.394	.682	.261	.682	.429	.732	.270	.682	.422	.618	.638	.706	.429	.394	.528	.580	.001	.761	.562	.484	.591	.562	.732	.465	.644	.317	.682					
18	0	-.065	.017	-.094	-.015	.159	.141	.089	-.129	-.078	.048	-.065	.159	-.078	-.048	-.094	.059	-.040	1.000	-.157	-.161	-.120	-.105	-.058	-.058	-.017	.033	.102	-.110	-.065	-.029	-.100	.080	.080	-.078			
		.544	.874	.376	.887	.136	.185	.406	.226	.467	.656	.544	.134	.467	.651	.376	.578	.706	.141	.129	.262	.325	.589	.589	.874	.756	.340	.303	.544	.785	.348	.453	.467					
19	<10	.192	-.096	.036	-.153	-.003	-.008	-.075	.173	.115	-.110	-.031	-.036	.115	.022	-.045	.059	.084	-.157	1.000	-.353**	-.262*	-.230*	-.126	.121	-.096	-.022	-.022	.122	.080	-.053	.219*	-.178	.115				
		.071	.369	.736	.151	.980	.943	.482	.103	.280	.303	.773	.735	.280	.834	.673	.578	.429	.141	.001	.013	.029	.235	.256	.369	.836	.834	.254	.452	.617	.038	.093	.280					
20	10-50	.073	.253*	.027	-.098	-.130	.034	.200	-.034	.106	-.065	-.037	-.055	.013	.125	.027	.050	-.091	-.161	-.353**	1.000	-.270*	-.237*	-.130	-.130	-.105	.131	-.147	.038	-.037	-.189	.039	-.066	.106				
		.493	.016	.803	.356	.222	.750	.059	.749	.319	.541	.732	.605	.907	.241	.803	.638	.394	.129	.001	.010	.025	.222	.222	.222	.222	.325	.219	.167	.721	.732	.075	.717	.539	.319			
21	50-100	-.108	-.014	.032	.165	.193	-.202	-.019	.089	-.019	.216*	.022	.020	-.130	.023	.316**	-.149	-.067	-.120	-.262*	-.270*	1.000	-.175	-.096	-.096	.193	-.014	-.078	.074	-.014	.022	.061	.115	-.012	-.130			
		.309	.895	.767	.120	.069	.056	.862	.405	.862	.040	.839	.848	.222	.829	.002	.161	.528	.262	.013	.010	.098	.366	.069	.895	.467	.486	.895	.839	.569	.280	.909	.222					
22	100-250	-.095	-.161	.069	.228*	-.085	.133	-.114	-.106	-.114	.070	.048	.099	.130	-.147	-.139	.087	-.059	-.105	-.230*	-.237*	1.000	-.085	-.085	.211*	-.170	.149	-.161	.048	.117	-.216*	.117	.114					
		.372	.129	.516	.030	.428	.211	.285	.321	.285	.512	.656	.354	.221	.167	.192	.414	.580	.325	.029	.025	.098	.428	.428	.046	.109	.160	.129	.656	.270	.041	.270	.285					
23	250-500	-.052	.065	-.076	.034	-.047	-.130	-.063	.034	-.063	-.003	-.052	-.057	-.063	.003	-.076	-.072	.333**	-.058	-.126	-.130	-.096	-.085	1.000	-.047	-.089	.107	-.033	.065	-.052	.153	-.156	.153	.153	-.063			
		.624	.544	.475	.733	.663	.222	.538	.733	.538	.980	.624	.595	.538	.979	.475	.501	.001	.589	.235	.222	.366	.428	.663	.663	.406	.315	.755	.544	.624	.151	.141	.151	.538				

	External equity												External debt																					
24	veryeasyd unmny	-.052	.218*	-.076	-.104	.215*	-.130	-.063	-.104	-.063	-.368**	-.052	-.057	-.063	-.123	.095	.288**	-.033	-.058	.121	-.130	.193	-.085	-.047	1.000	-.089	-.134	-.149	-.089	.654**	-.112	-.043	-.112	-.063
		.624	.039	.475	.329	.042	.222	.558	.329	.558	.000	.624	.595	.558	.249	.372	.006	.761	.589	.256	.222	.069	.428	.663	.406	.209	.162	.406	.000	.295	.688	.295	.558	
25	easydun mny	.038	-.079	-.045	.367**	-.089	.038	-.119	-.037	-.119	.122	-.100	.006	-.001	-.087	-.145	.179	-.062	.017	-.096	-.105	-.014	.211*	-.089	-.089	1.000	-.255*	-.283**	-.169	.038	.484**	-.165	-.213*	-.119
		.720	.460	.676	.000	.406	.721	.263	.731	.263	.254	.350	.957	.990	.417	.172	.091	.562	.874	.369	.325	.895	.046	.406	.406	.015	.007	.112	.720	.000	.121	.044	.263	
26	neutraldu mny	-.042	.098	.096	-.046	-.134	-.037	.005	-.046	.283**	-.079	-.042	-.074	-.180	.051	.096	-.041	.075	.033	-.022	.131	-.078	-.170	.107	-.134	-.255*	1.000	-.428**	-.255*	-.042	-.199	.334**	-.078	-.180
		.693	.358	.366	.668	.209	.726	.962	.668	.007	.459	.693	.489	.089	.631	.366	.699	.484	.756	.836	.219	.467	.109	.315	.209	.015	.000	.015	.693	.060	.001	.467	.089	
27	harddun mny	-.063	-.013	.134	.032	.197	-.039	-.023	.092	-.111	.032	.144	-.096	.155	.050	.059	-.071	.057	.102	-.022	-.147	.074	.149	-.033	-.149	-.283**	-.428**	1.000	-.283**	-.167	-.124	.001	.459**	-.200
		.553	.905	.206	.767	.062	.712	.832	.386	.296	.764	.175	.369	.145	.637	.582	.504	.591	.340	.834	.167	.486	.160	.755	.162	.007	.000	.007	.115	.246	.966	.000	.058	
28	veryhardd unmny	.176	-.079	-.145	-.198	-.089	-.105	.235*	.044	-.001	-.168	.038	.071	.117	.060	-.045	-.137	-.062	-.110	.122	.038	-.014	-.161	.065	-.089	-.169	-.255*	-.283**	1.000	-.100	.097	-.231*	-.135	.707**
		.096	.460	.172	.061	.406	.325	.026	.681	.990	.113	.720	.506	.273	.571	.676	.198	.562	.303	.254	.721	.895	.129	.544	.406	.112	.015	.007	.350	.362	.028	.204	.000	
29	veryeasyd unmnydeb	-.059	.176	-.086	.007	-.052	-.146	-.070	-.117	-.070	.414**	-.059	-.089	-.070	-.025	-.086	.404**	-.037	-.065	.080	-.037	.022	.048	-.052	.654**	.038	-.042	-.167	-.100	1.000	-.125	-.176	-.125	-.070
		.582	.096	.422	.949	.624	.169	.509	.272	.509	.000	.582	.405	.509	.814	.422	.000	.732	.544	.452	.732	.839	.656	.624	.000	.720	.693	.115	.350	.239	.097	.239	.509	
30	easydun mnydeb	-.007	-.058	-.096	.168	.021	-.189	-.049	.098	.053	.071	-.125	-.010	.053	-.041	-.010	.009	-.078	-.029	-.053	-.189	.061	.117	.153	-.112	.484**	-.199	-.124	.097	-.125	1.000	-.375**	-.268*	-.150
		.951	.589	.367	.114	.848	.075	.649	.357	.619	.503	.239	.926	.619	.702	.928	.932	.465	.785	.617	.075	.569	.270	.151	.295	.000	.060	.246	.362	.239	.000	.011	.158	
31	neutraldu mnydeb	.028	-.032	.041	.068	.184	-.067	-.036	.068	.139	-.049	.130	.014	.051	-.140	.190	-.008	.049	-.100	.219*	.039	.115	-.216*	-.156	-.043	-.165	.334**	.001	-.231*	-.176	-.375**	1.000	-.375**	-.211*
		.791	.766	.699	.522	.082	.531	.737	.522	.192	.644	.220	.896	.630	.187	.073	.942	.644	.348	.038	.717	.280	.041	.141	.688	.121	.001	.996	.028	.097	.000	.000	.046	
32	harddun mnydeb	-.125	.097	.164	-.111	-.112	-.004	.053	.029	-.049	-.053	-.007	-.178	-.049	.149	-.010	-.082	.107	.080	-.178	-.066	-.012	.117	.153	-.112	-.213*	-.078	.459**	-.135	-.125	-.268*	-.375**	1.000	-.150
		.239	.362	.123	.300	.295	.969	.619	.789	.649	.617	.951	.092	.649	.160	.928	.444	.317	.453	.093	.539	.909	.270	.151	.295	.044	.467	.000	.204	.239	.011	.000	.158	
33	veryhardd unmnydeb	.292**	-.001	-.103	-.140	-.063	.013	.225*	-.034	-.084	-.170	.111	.030	.071	.124	-.103	-.097	-.044	-.078	.115	.106	-.130	-.114	-.063	-.063	-.119	-.180	-.200	.707**	-.070	-.150	-.211*	-.150	1.000
		.005	.990	.336	.188	.558	.907	.033	.749	.429	.109	.289	.776	.509	.243	.336	.364	.682	.467	.280	.319	.222	.285	.558	.558	.263	.089	.058	.000	.509	.158	.046	.158	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

ATTACHMENT 3. Multicollinearity between the independent variables of the regression models

(1)

	EXT_EQ_PRO_NOIN	EXT_EQ_PRO_YESS	EXT_EQ_PRO_MA	EXT_EQ_PRO_YESTE	EXT_DEB_PRO_NOI	EXT_DEB_PRO_YESS	EXT_DEB_PRO_MA	EXT_DEB_PRO_FRM	EXT_DEB_PRO_YEST	OFFICE	AUDIT	BCKG_GENDER	BCKG_EDU	BCKG_ACC	BCKG_FIN	BCKG_ENT
EXT_EQ_PRO_NOIN	1.000															
EXT_EQ_PRO_YESS	-.220*	1.000														
EXT_EQ_PRO_MA	.044	1.000														
EXT_EQ_PRO_YESTE	-.220*	.021	1.000													
EXT_DEB_PRO_NOI	.046	.850	.850	1.000												
EXT_DEB_PRO_YESS	.002	.087	.066	-.209	1.000											
EXT_DEB_PRO_MA	.092	.129	.079	-.079	-.072	1.000										
EXT_DEB_PRO_FRM	.418	.259	.489	.521	.521	.414	1.000									
EXT_DEB_PRO_YEST	-.097	-.004	.342**	-.227*	-.092	-.092	-.280*	1.000								
OFFICE	.394	.974	.002	.042	.414	.100	.375	.307	1.000							
IPR	-.056	.120	-.031	-.080	-.280*	1.000	1.000	-.273**	-.273**	1.000						
OFFICE	.615	.277	.784	.480	.011	.375	.010	.010	.010	.609	1.000					
OFFICE	-.043	.084	-.018	.097	-.166	-.116	-.116	-.116	-.116	-.056	-.056	1.000				
OFFICE	.701	.451	.875	.394	.141	.307	.010	.010	.010	.600	.600	.600	1.000			
AUDIT	-.086	.170	.114	-.235*	.060	.164	.069	.069	.069	1.000	1.000	1.000	1.000	1.000		
BCKG_GENDER	.614	.122	.304	.035	.592	.145	.516	.045	.045	.157	.157	.157	.157	.157	1.000	
BCKG_GENDER	-.171	.071	-.031	-.085	-.055	-.055	.045	.045	.045	.329**	.329**	.329**	.329**	.329**	.329**	1.000
BCKG_GENDER	.119	.523	.781	.450	.627	.626	.676	.002	.002	.141	.141	.141	.141	.141	.141	1.000
BCKG_GENDER	-.068	.171	-.050	-.043	.059	-.043	.017	.128	.128	-.013	-.013	-.013	-.013	-.013	-.013	1.000
BCKG_EDU	.536	.121	.652	.467	.603	.706	.870	.231	.231	.900	.900	.900	.900	.900	.900	1.000
BCKG_EDU	-.053	.141	.060	-.201	-.100	-.057	-.016	-.016	-.016	.098	.098	.098	.098	.098	.098	1.000
BCKG_EDU	.635	.202	.589	.072	.374	.612	.882	.111	.111	.357	.357	.357	.357	.357	.357	1.000
BCKG_EDU	-.164	-.009	.137	-.058	-.091	-.045	.096	.096	.096	.170	.170	.170	.170	.170	.170	1.000
BCKG_EDU	.136	.934	.218	.607	.419	.690	.367	.012	.012	.109	.109	.109	.109	.109	.109	1.000
BCKG_EDU	-.032	.105	.037	-.140	.091	-.144	-.112	-.112	-.112	.235*	.235*	.235*	.235*	.235*	.235*	1.000
BCKG_ENT	.770	.341	.738	.211	.419	.201	.294	.293	.293	.280	.280	.280	.280	.280	.280	1.000

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

(2)

Model	Collinearity Statistics	
	Tolerance	VIF
BUSINMODEL	,719	1,391
IPR	,706	1,417
OFFICE	,611	1,637
AUDIT	,807	1,239
BCKG_GENDER	,812	1,231
BCKG_EDU	,700	1,428
BCKG_ACC	,530	1,887
BCKG_FIN	,479	2,087
BCKG_ENT	,829	1,207
EXT_EQ_PRO_N OINV	,647	1,546
EXT_EQ_PRO_Y ESSMA	,783	1,277
EXT_EQ_PRO_Y ESTERM	,758	1,320
EXT_DEB_PRO_ NOINV	,570	1,755
EXT_DEB_PRO_ YESSMA	,640	1,563
EXT_DEB_PRO_ YESTERM	,715	1,398
EXT_DEB_PRO_ BUREAUCRACY	,736	1,358