Quality signals in equity-based crowdfunding.

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Abstract

The current thesis explores a relatively new academic topic – equity-based crowdfunding. The purpose is to examine which quality signals, used by the entrepreneurs in their fundraising process, tend to increase the probability of closing an equity-based crowdfunding campaign successfully. The findings in this thesis serve as an additional contribution to a relatively unexplored topic of signaling in equity crowdfunding. Besides a theoretical contribution, it provides practical insights that may help entrepreneurs and crowdfunding platforms to increase the probability of successful campaign closure. The data for this study was collected from an international crowdfunding platform Fundedbyme.com. The explanatory variables, both continuous and binary, were divided into several thematic groups, while the dependent variable was defined by either successful or unsuccessful outcome of the campaign. The effect of the explanatory variables on the outcome of the campaign was tested with the help of the logistic regression (logit) model. The results showed that crowd investors in the network of Fundedbyme.com use particular quality signals to distinguish between the projects, in fact, both financial signals and more qualitative signals. Increases in the financial signals such as funding goal and price per share affect the probability of success negatively, while the presence of the qualitative signals (received awards and the indication of the non-executive board) contribute to a higher probability of success. Secondly, the results imply some similarities between the selecting mechanism in traditional funding, reward-based and the equity-based crowdfunding. As a third point, this research shows that the presence of a specific selecting mechanism in crowdfunding helps to some extent decrease the information asymmetry and adverse selection in the market of crowdfunding.

Key-words

Equity-based crowdfunding, crowdfunding campaign, crowdfunding platform, signaling mechanism, quality signals, information asymmetry, adverse selection
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1. Introduction

Even though large enterprises make a considerable contribution into the aggregate economic output, “SMEs play a more significant role than their proportion of total employment might suggest” (Cull, Davis, Lamoreaux, & Rosenthal, 2006, p. 3018). According to the World Bank, despite of the importance of SMEs (small- and medium-sized enterprises), small firms have less access to all types of financing, both local and foreign, in comparison with their larger counterparts. (Gregory, Rutherford, Oswald, & Gardiner, 2005)

In this situation of external finance shortage, and, additionally, the development of technology and the concept of sharing economy, startups received access to a new way of financing – crowdfunding. (Belleflamme, Lambert, & Schwienbacher, 2010) Crowdfunding is way of funding new ventures, projects or ideas by engaging a large number of people who contribute with relatively small amounts of money without any financial intermediaries (Mollick, 2014).

Crowdfunding originates from a broader concept of crowdsourcing which defines the practice of assigning any activity to an internet community. In this context, crowdfunding can be presented as a crowdsourced financing, which involves the exchange of slack monetary resources both on a local and global scale and by this constitutes a, so called, sharing economy (Ingram, Teigland, & Vaast, 2014).

The most well-known type of crowdfunding is a reward-based crowdfunding, which gained large popularity through an American crowdfunding platform Kickstarter. Afterwards crowdfunding was upgraded into two more sophisticated forms – crowdinvesting and crowdlending. Crowdinvesting or equity-based crowdfunding, the main focus of this thesis, allows entrepreneurs to acquire additional capital by selling a particular amount of shares with or without voting rights to both professional and unprofessional investors.

Since its first mentioning, crowdfunding started to gain popularity among other crowdfunding funding options, which were accessible to startups. Since 2007 up to 2012, the number of active crowdfunding platforms grew with an impressive rate of 350% worldwide (Hildebrand, Puri, & Rocholl, 2014). If in the very beginning, the growth in global crowdfunding industry was driven mostly by the reward-based crowdfunding, then since 2012 it was further supported by equity. (Ravanetti, Tordera, & Berg, 2014) Starting with a moderate growth rate of 30%, equity-based crowdfunding reached a volume of $116M in 2012 (Massolution, 2013), and in only two years increased quarterly revenues of crowdfunding platforms by AGR 351% (Neiss, Swart, & Best, 2014).

Being a part of the market of entrepreneurial finance, crowdfunding is a subject to such market inefficiencies as information asymmetry and adverse selection. In their earlier papers, Schwienbacher & Larralde (2010) claimed that the problem of information asymmetry and adverse selection might be even more severe in crowdfunding than in the market of traditional entrepreneurial finance due to the low level or the total absence of professional financial knowledge possessed by crowdlinvestors.

The presence of the market inefficiencies and a relative financial illiteracy of crowd investors should have resulted in the market failure. Nevertheless, the fact that a large number of startups receive funding through equity-based crowdfunding means that there should be some signals of quality, which entrepreneurs use in order to communicate a true value of their ventures to the potential investors. (Ahlers, Cumming, Günther, & Schwizer, 2014) In other words, more informed market agents (entrepreneurs) should use some signals to credibly communicate the value of their knowledge, business and product or service to less informed market agents (potential investors) (Spence, 1973). By signals Spence (1973) meant the characteristics which revealed information about the product or venture and which could be manipulated by the individual or venture.

The aim of this thesis is to examine which quality signals used by the entrepreneurs tend to increase the probability of closing an equity-based crowdfunding campaign successfully.
For this purpose, I will collect the data on the outcome of campaigns and various quality signals from 82 equity-based campaigns listed on the Nordic’s leading international crowdfunding platform Fundedbyme.com between 2012 and July 2015. The effect of the quality signals on the probability of a successful outcome will be estimated with the help of logistic regression.

This paper will present valuable insights into an almost unexplored topic of signaling in equity-based crowdfunding. The first attempt to empirically investigate quality signals in equity-crowdfunding was made by Ahlers et al. (2014) on an example of an Australian crowdinvesting platform ASSOB. By examining the impact of six variable sets on such endogenous variables as funding amount, number of investors and investment speed, Ahlers et al. (2014) concludes that such signals as the percentage of equity offered, number and education of board members, exit strategy, provision of financial forecasts as well as external certification in form of patents and governmental grants have a significant impact on the success of crowdinvesting campaign. (Ahlers et al., 2014)

In general, the literature on crowdfunding does not address sufficiently the dynamics of equity-crowdfunding and quality signaling. Existing empirical studies that aimed to explore current topic were limited to either only a specific type of crowdfunding (reward-based crowdfunding) (Mollick, 2014) or a specific country and platform (an Australian crowdfunding platform ASSOB) (Ahlers et al., 2014). Agrawal, Catalini & Goldfarb (2013) and Ahlers et al. (2014) point out these limitations and encourage more research on this topic.

With this said, the research question of the following study will be formulated in a following way: Which quality signals increase the probability of closing an equity-based crowdfunding campaign successfully?

The research question is not only relevant from a theoretical perspective but has also practical implications for all parties involved in the process of crowdfunding. By exploring which quality signals the potential investors perceive as guarantors of a qualitative venture, entrepreneurs and crowdfunding platforms will receive more knowledge that will increase their chances to close a crowdfunding campaign successfully.

Based on the results received in the current thesis, it can be concluded that crowd investors in the network of Fundedbyme.com use particular signals to distinguish between the projects. In this matter they seek for both financial signals and more qualitative signals. While an increase in the financial signals (funding goal and price per share) decreases the probability of a campaign’s successful outcome, the presence of the qualitative signals (received awards and the indication of the non-executive board) has a positive effect on the campaigns’ outcome. Secondly, the results of the study imply some similarities between the traditional funding, reward-based and the equity-based crowdfunding. Nevertheless, these similarities have to be interpreted with caution due to different setups of crowdfunding platforms, crowdfunding products and country of crowdfunding platform’s origin. As a third point, this research shows that the presence of a specific selecting mechanism in crowdfunding helps to some extent to decrease the information asymmetry and adverse selection in the market of crowdfunding, proving that it is a new disruptive and viable alternative to traditional forms of startup financing.

The remainder of the thesis is structured as follows. Chapter 1 introduces the reader to the current thesis. Chapter 2 contains a background information and statistical description of a crowdfunding phenomenon and its types. Chapter 3 presents a theoretical review of a signaling mechanism in the context of information asymmetry and market failure, the formulation of the research question and hypotheses that will be tested. Chapter 4 is devoted to the description of the studied crowdfunding platform FundedByMe, data on the campaigns, hypotheses and the empirical model. The results and the discussion of the results are presented in Chapter 5. Chapter 6 contains conclusion, limitations of the current study and implications for further research.
2. Background

The purpose of this chapter is to familiarize the reader with the concept of crowdfunding, show the groundbreaking nature of this phenomenon in terms of its impact on involved parties, in particular, and economy, in general.

In the first section of the current chapter I will present the phenomenon of crowdfunding by defining its origin, conceptual nature and main characteristics. Afterwards, I will provide explanation of four major types of crowdfunding with regard to their main differentiating points. Third section will reveal a specific role of crowdfunding in the market of entrepreneurial finance. Finally, global and local crowdfunding industries will be described with the help of various statistical data.

2.1. Crowdfunding: the concept and its origin

Crowdfunding can be defined as “the effort” undertaken “by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small” monetary “contributions from a relatively large number of individuals … without using standard financial intermediaries” (Mollick, 2014, p. 3). However, because crowdfunding relates to various types of projects and is used for different purposes, its current definition appears in a “constant evolutionary flux” and should be perceived as arbitrary and discretionary (Mollick, 2014, p. 2).

Even though crowdfunding is often presented as a relatively novel and groundbreaking concept, the idea of financing various activities by collecting small amounts of money from a large number of people existed for centuries ago and has always been a founding concept in charity. The most well-known examples include Mozart and Beethoven, who financed their manuscripts and concerts with money collected from music enthusiasts. Other examples include the construction of the Statue of Liberty in New York, construction of Nordic museum in Stockholm and the elections of President Obama in USA. (Hemer, 2011)

Nevertheless, the concept of crowdfunding in its modern understanding was formed by the shortage of external entrepreneurial finance and the development of Web 2.0 technology - internet application that simplifies communication, improve collaboration and, by this, create additional value for unspecified groups of people with common interests. (Best, Neiss, Stralser, & Fleming, 2013) (Belleflamme et al., 2010) (Kleeman, Vob, & Rieder, 2008)

Crowdfunding originates from a broader concept of crowdsourcing, and is considered to be one of its forms. After an extended study of academic literature, Estellés-Arolas and Gonzales-Ladrónde-Guevara (2012, p.9) defined crowdsourcing as “a type of participative online activity in which an individual, an institution, a non-profit organization, or a company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task.”

The term of crowdsourcing was first mentioned in 2006 in a well-known journal Wired by the editor and journalist Jeff Howe who described modern reality as the age of crowd, where, by outsourcing any activity to an internet community, crowd’s ideas and feedback could be applied in corporate R&D. (Howe, 2006)

Some researches assign the origin of crowdsourcing phenomenon to a change in relationships between firms and their customers with regard to the production process and innovation. In particular, a transformation from a firm-driven to customer-driven production process and R&D created mutual benefits for both the firms and their customers (Kleeman et al., 2008) (Ordanini, Miceli, & Pizzetti, 2011). While companies received an innovative idea and/or a solution to a problem, consumers enjoyed everything, ranging from various tangible rewards to “social recognition, better self-esteem, and development of individual skills” (Estellés-Arolas & Gonzaléz-Ladrónde-de-Guevara, 2012, p.9).
Other researchers connect the origin of the crowdsourcing with the development of Internet and network spaces. According to this approach, crowdsourcing is perceived as a result of a more substantial transition from industrial information economy, characterized by centralization, professional labor and capital-intensity, to a networked information economy, which leans towards cooperative problem-solving and democratization of innovation (Benkler, 2006, Ch1).

The growing popularity and vitality of crowdsourcing was well explained by Surowiecki (2005), who with the help of examples from history and statistics, revealed the power of the collective intelligence and proved that, by acting independently, a crowd, consisting of people with various backgrounds and cognitive abilities, is capable of producing remarkably reliable results. Related studies showed further that, in terms of novelty, customer benefit and the average level of feasibility, ideas of a crowd can be superior to the ideas of professionals. (Poetz & Schreier, 2012)

Since its first mentioning, the principles of crowdsourcing developed rapidly and were applied in the context of various types of resources, including monetary funds. Therefore, the nature of crowdfunding can be defined as “crowdsourced financing” (Ingram et al., 2014, p. 3), that come from a large number of professional and unprofessional individuals and is used for supporting various entrepreneurial and corporate activities. (Beugre, 2014)

In their report Felländer, Ingram & Teigland (2015) remind that crowdsourcing and crowdfunding are related concepts which build sharing economy – economy, which involves the exchange of slack resources both on a local and global scale through the digital platforms that replace third-party intermediaries.

From this perspective, the presence of a corporate problem that has to be solved, a crowd willing to provide a solution, an online environment and the anticipation of mutual benefits are assumed to be common pillars of both crowdsourcing and crowdfunding.

However, by analyzing a number of crowdfunding cases, Belleflamme et al. (2010) identified substantial differences between the two concepts. In particular, due to the involvement of monetary input and, consequently, the varying limitations in the related legislation, a fundamental principle of an open call for crowdfinancing is usually limited to only specific types of companies and projects. Additionally, in contrast to crowdsourcing, crowdfunding does not create a new idea, but, instead, supports an already existing idea with monetary funds, and/or additional knowledge and feedback.

2.2. Types of crowdfunding

Academic literature distinguishes between four major types of crowdfunding: donation-based, reward-based, equity-based and loan-based crowdfunding. These types differ from each other in terms of funding goal, the aims entrepreneurs perceive and the compensation forms. (Hemer, 2011) (Pazowski & Czudek, 2014).

Donation-based crowdfunding

Donation-based crowdfunding is philanthropic and charitable in its nature. With this crowdfunding model people, known as donators, are engaged by exclusively altruistic motivations. The main characteristics of this type of crowdfunding regards the donator’s rewards – donators do not receive any tangible compensation, but can only enjoy a number of intangible rewards, such as gratitude and better self-esteem.

Reward-based crowdfunding

Reward-based crowdfunding is considered to be a starting point of modern crowdfunding and gained its popularity through an American crowdfunding platform Kickstarter. In the reward-based crowdfunding, funders, known as backers, support a business idea or an artistic expression in exchange for specific
tangible and intangible rewards. Often, a person seeking funds through a reward-based crowdfunding does not have a company, but has only a product or service idea. The amount of money pledged by backers varies considerably and often depends on the type of rewards. In order to attract a large number of backers, entrepreneurs and artists tend to differentiate the rewards as cheaper and more expensive compensation forms.

Beugre (2014) suggests distinguishing between ex post facto and ex ante reward-based crowdfunding. In case of a former type, backers pledge money in exchange for tangible products, while in a later case, practiced mostly in the entertainment industry, backers expect more intangible rewards such as, for example, participation in the process of movie production. Hemer (2011) also defines a pre-sale crowdfunding, where backers receive an early version of a product.

All three types of reward-based crowdfunding are usually used by entrepreneurs with the purpose of learning more about customers’ preferences, identifying target markets, receiving feedback and collecting funds for the further product development (Schwienbacher & Larralde, 2010)

**Loan-based crowdfunding (also known as crowdlending)**

With the help of crowdlending, individuals (P2P-lending) and mature companies (P2B-lending) may search funding without any financial intermediary, for example banks. In exchange for funds, lenders receive interest rate payments, which have to be paid out at a preliminary determined payment schedule. Pazowski & Czudek (2014) call this type of crowdfunding as social lending.

In case of P2B-lending, lenders and borrowers may also agree upon a percentage of firm’s earnings, which will serve as an alternative to interest payments and will be paid out to the lender at the end of the lending period.

In either case, lenders bear risks and receive compensations comparable to the risks undertaken (Hemer, 2011).

**Equity-based crowdfunding (also known as crowdinvesting)**

Equity-based crowdfunding, the main topic of this thesis, allows entrepreneurs to acquire additional capital by selling a particular amount of shares with or without voting rights to both accredited and non-accredited investors. The investments in equity-based crowdfunding are collected during the indicated funding period and are usually transferred right after the funding round is closed (Pazowski & Czudek, 2014). This type of crowdfunding is considered to be the most complicated instrument among the crowdfunding alternatives (Hemer, 2011) not only due to the complexity of the process of equity issue itself, but also due to its high dependence on various types of national and international legislation.

2.3. Crowdfunding and the market of entrepreneurial finance

Developing as an additional source of capital for startups, crowdfunding is often seen as a type of financing that narrows down a funding gap in the market of entrepreneurial finance.

**Problem description**

The development and growth of SMEs is highly dependent on the entrepreneurs’ access to financial resources, and various studies within the field of entrepreneurial finance prove that one of the primary factors of startups’ failure is the lack of sufficient funding (Gregory et al., 2005) and (Cull et al., 2006).

Before the introduction of crowdfunding, SMEs have been mainly supported by internal financial resources and external funding coming from business angels, venture capitalists, banks, corporations and governmental organizations.
Financing circle, which describes the stages and sources of financing

A number of theoretical and empirical studies within entrepreneurial finance admitted distribution and segmentation of internal and external financial resources along specific stages of startups’ development. (Denis, 2004)

Berger and Udell (1998), in particular, developed the financial growth life cycle model, which is widely used nowadays for the presentation of the capital structure of SMEs and segmentation of fund providers with respect to size, age and availability of information about the startup.

According to the funding cycle, at their earliest stages of development, often defined as pre-seed and seed stages, startups may either have an elaborated business idea without a company or a newly established firm. Both types of entrepreneurial ventures at this stage tend to concentrate on the development of working prototypes, market research and elaboration of solid business plans. At this stage of high uncertainty and risk, long payback time and comparatively small funding needs, most of the financing comes from internal sources, for example, from the founders themselves, their family and friends. (Beck & Demirguc-Kunt, 2006) Formal investors perceive this stage as too risky and call it a “valley of death”, because at this step only few entrepreneurs actually survive and manage to achieve a break-even level of output. In some cases, together with internal financing, new ventures can be backed by angel investors, who provide support in the form of various value added activities and, by this, prepare these startups for a more substantial venture capital financing. (Ernst&Young, 2012)

As startups grow and generate revenues, but not necessarily profits, such formal investors as business angels, venture capitalists and banks start to show more interest in supporting young entrepreneurial ventures. Startups at this stage produce product and/or deliver services, have an established management team and possess substantial knowledge about the market and their target customers. External financing is mostly needed for the further product development, marketing activities and expansion.

As startups become mature enough and reach a so-called stage of Mezzanine, external financing takes the forms of equity, provided by venture capitalists and/or mid-term loans provided by banks. Startups may also engage into strategic alliances or merges and acquisitions.

At later stages SMEs’ capital structure is usually weighted more towards VC because their activities add more value but are at the same time more expensive. (Denis, 2004) Finally, a company, which collects substantial historical records and experience, can aim at public equity and long-term debt financing (Hall, 2002).

Summary of each stage in the financing cycle model implies positive correlation between the development of the firm and the amount of external funding available. Smaller, younger and more informationally opaque SMEs rely more on the internal capital, while larger and more transparent firms gain access to external equity and debt financing. Eventually, availability of historical record and established turnover will open a way to public equity and long-term debt. (Berger & Udell, 1998) All these patterns have been proved later in an empirical cross-sectional study conducted by Gregory et al. (2005).

The gap in the market of entrepreneurial finance

According to the report prepared by Ernst&Young (2012, p. 4), “at each stage, there should be sources of finance available, and at least in theory, a smooth transition should be possible between the different forms of finance. Nonetheless, there is clear evidence that large gaps have appeared along the funding channel, not at last in the course and aftermath of the financial crisis. These gaps make it difficult for entrepreneurial companies to start up and grow, meaning that they are unable to play their potential role of enabling a sustained economic recovery.”
In particular, reality shows that at each stage of startup development the majority of startups experience difficulties with acquiring external financing and indicate the presence of a so-called funding gap. A funding gap can be defined as “the absence of small amounts of risk capital from institutional sources for companies at the seed, start-up and early-growth stages, which arises because the fixed costs of investment appraisal and monitoring make it uneconomic for venture capital funds to make small investments, and because of the reluctance of banks to make unsecured lending” (Mason, 1996, p.4). In other words, funding gap is present when a significant number of SMEs experience challenges in attracting external financial resources (OECD, 2006).

Recent studies observed a recent shift of traditional external financing from younger to more developed startups. This shift was mainly explained by investors’ intention to minimize risks and secure higher returns. (Collins & Pierrakis, 2012)

In particular, angel investors are to a larger extent moving their funds from pre-seed and seed stages towards post-seed startups (Amatucci & Sohl, 2007). As a result, after the financial crisis of 2008 the amount of financial resources allocated to the startups at pre-seed and seed stages decreased by 20% for the following six years. (Sohl, 2013)

As professional investors – business angels, VCs and banks – shift more towards low-risk companies, young firms struggle to attract more financing. The survey conducted by Ernst&Young (2012), revealed that around 67% of the interviewed startups stated that the problem of acquiring external funding becomes much more serious.

The presence of a funding gap becomes even more evident when one turns attention to the findings of Moskowitz & Vissning-Jorgensen (2002) who reveal that VCs stay for less than 1% of the total private equity market. Hall (2002) supports these findings by explaining that modern venture capital is provided in amounts, which are too large for startups and, therefore, is more suitable for industries with well-developed IPO markets.

As it follows, the findings presented above reveal the presence of a funding gap at each stage of a startup development. On the one hand, there is a clear gap at a pre-seed and seed stages, where the funding needed may be too high for internal sources of capital and too small for business angels. On the other hand, there is a gap where business angels provide most of the financing, while venture capitalists are not yet ready to invest. The lack of sufficient startup financing, stronger intentions to minimize investment risks, “widespread Internet access, functioning social networking platforms together with the emancipation of the crowd” created a new business opportunity and resulted in a fast development of a crowdfunding market, which has the capacity to narrow down funding gap at each particular stage of startup development. (Lehner, 2013)

In addition, a separate body of literature was dedicated to comparing crowdinvesting to the investments of business angels (BA) and venture capitalists, indicating a complementary nature of crowdfunding in the context of the traditional sources of capital. By reviewing American and European security regulations, Hornuf & Schwienbacher (2014) came to the conclusion that equity crowdfunding will serve as a complement to angel investors because it will take care of lower investment levels. A smaller portion of equity crowdfunding will be a coinvestment with BA, thus mitigating the funding gap at the market of entrepreneurial finance. Moreover, the researchers see an opportunity for a mutual benefit that can be enjoyed by both crowdinvestors and business angels – a less financially trained crowd may follow business angels who are able to make more thorough due diligence judgments, while with the help of the crowd, business angels may assess the market acceptance of the business idea. In a smaller number of cases, where average financing will be similar, crowdinvestment may serve as a substitute to BA funding.

To conclude, equity-based crowdfunding covers both the funding gap at a seed stage and the gap at earlier and more mature stages of the startup development (Collins & Pierrakis, 2012).
2.4. Statistics on the market of crowdfunding

Global crowdfunding

Since 2007 up to 2012, the number of active crowdfunding platforms grew with an impressive rate of 350% worldwide (Hildebrand et al., 2014). In 2012 more than 452 registered active crowdfunding platforms raised $2.7G and funded around 1M campaigns (Massolution, 2013).

Most of the revenue growth in global crowdfunding industry came from North America and Western Europe (Hildebrand et al., 2014), which had the respective market sizes of $1.6G and $945M in 2012. In 2013 the industry’s revenues exceeded the projected growth rates, and increased to more than $5.1G, implying a growth rate of 81% (Noyes, 2014).

While United States is currently the largest crowdfunding market, European crowdfunding has experienced much higher growth rates (Wardrop, Zhang, Rau, & Gray, 2015).

According to the forecast made by the World Bank, global crowdfunding industry is expected to reach a point between $90G and $96G in 2025, with only China contributing with $50G. If the forecast proves to be accurate, crowdfunding industry is about to become 1.8 times larger than the size of a global venture capital industry observed in 2014. (Noyes, 2014)

European and Nordic crowdfunding

The study of 27 European countries (EU) revealed that the industry’s turnover generated by all types of crowdfunding together grew on average by 146% between 2012 and 2014. Currently, the largest player within European crowdfunding is United Kingdom (UK), which has the largest number of crowdfunding platforms and provides the most complex financial instruments. Therefore, excluding UK, crowdfunding in all other European countries grew less rapidly – by AGR 115%. In 2015 European crowdfunding market is expected to achieve €1.3G.

During the same time period, Nordic countries grew in line with the rest of EU (AGR 115%) and in total raised $254M for all types of crowdfunding in total. Sweden, with its three crowdfunding platforms surpasses all other Nordic countries in terms of turnover, funding volumes and industry growth rate. In the context of EU, Sweden appears as the fourth largest country in terms of cumulative funding, and the third largest country in terms of per capita crowdfunding transactions. (Wardrop et al., 2015)

![Figure 1: Total Nordic alternative finance market size in €m.](Image)

*Source: (Wardrop et al., 2015, p.35)*
Development of crowdfunding types

If in the very beginning, the growth in global crowdfunding industry was driven mostly by the reward-based crowdfunding, then since 2012 it was further supported by crowdinvesting. (Ravanetti et al., 2014) Starting with a moderate growth rate of 30%, crowdinvesting reached a volume of $116M in 2012 (Massolution, 2013) and in only two years increased quarterly revenues of equity-based crowdfunding platforms by AGR 351% (Neiss et al., 2014).

In Europe the most popular type of crowdfunding is still reward-based with its turnover of €120.33M. It is followed by loan-based (€93.1M) and equity-based crowdfunding (€82.65M). Reward-based crowdfunding grew by AGR 127% between 2012 and 2014 and was followed by AGR 116% growth in equity-based crowdfunding. (Wardrop et al., 2015)

A relatively lower growth rate and a slower development of crowdinvesting was mostly due to challenging legislation imposed on crowdfunding platforms, entrepreneurs and investors both in United States and European countries. Even though an acceptance of the JOBS Act in USA triggered the growth of global crowdinvesting after 2012, the specific restriction forced upon crowdinvestors still constrain the full potential of crowdinvesting. European legislation, in its turn, has been comparatively favorable to crowdfunding in general. However, equity-based crowdfunding activity as well as crowdlending are still challenged by multiple restrictions and the lack of consistency between the national laws and common EU legislation. (Gajda & Mason, 2013)

Despite of a challenging legislative environment, equity-based crowdfunding, compared to other types of crowdfunding, shows the highest number of funds raised per campaign (Massolution, 2013).

Impact on economy

Crowdfunding has been mostly popular among such industry segments as Arts (27.7%), Social Causes (27.4%), Business and Entrepreneurship (16.9%) and Energy and Environment (5.9%). (Gajda & Mason, 2013)
The survey around several hundred for-profit companies in North America and Europe showed that the companies funded through crowdfunding enjoyed a post-crowdfunding quarterly revenue growth of AGR 24% (Neiss et al., 2014).

In addition, within three post-crowdfunding months, 28% of companies received monetary funds from business angels and venture capitalists, while 43% of companies were supported by institutional investors. In terms of ROI, by dedicating around 3 hours per day for a crowdfunding campaign an entrepreneur received an average return of $813 on each hour invested (Neiss et al., 2014, p. 4).

With regard to the types of crowdfunding, equity-based crowdfunding was the most popular among the interviewed entrepreneurs, while crowd-lending was considered as their second choice (Ravanetti et al., 2014). Moreover, after equity- and loan-based crowdfunding rounds, 39% of interviewed companies has provided new working places by hiring an average of 2.2 new employees per company – a more substantial increase compared to reward-based rounds, which resulted in 29% of firms hiring (Neiss et al., 2014).

According to Neiss et al. (2014), more than 50% of 73 surveyed companies chose crowdfunding platforms as the first source of financing, while the rest of the companies considered crowdfunding as a strong alternative to traditional financial institutions.

The statistics presented above indicates clearly that crowdfunding is not a temporary trend, but a disruptive and valid source of alternative financing, which has a well-grounded ambition and ability to challenge traditional sources of entrepreneurial finance, spur innovation, create new jobs and, by this, contribute to a higher economic growth.

2.5. Implications for sustainability
Taking into account a growing importance of the phenomenon of crowdfunding and its positive effect on the development of entrepreneurship, increase of employment and economic growth, this paper bears its own economic and social contribution.

There is a large number of small and medium-sized companies struggling to receive external financing for their future development. The lack of external financial resources, in its turn, might result in company’s failure. On the other, there is a large number of individuals who are unprofessional investors and are are willing to distribute a part of their financial resources to support various business ideas. Because the purpose of this research is to shed the light on the factors that might help entrepreneurs to increase their chances to raise funds with the help of equity-based crowdfunding successfully, the research will help to narrow down the gap on the market of entrepreneurial finance. This, in its turn, have a number of economic and social implications. In particular, on a more individual level, more companies will be able to survive, generate a higher level of production and value for their shareholders. For the economy in general, it will mean a higher level of competition and economic growth rate. In terms of a social contribution, by receiving external financing for the future development, more jobs will be offered and the level of employment might increase.

Additionally, crowdfunding represents the exchange of slack monetary resources. Therefore, the results of this research might also contribute to a more efficient distribution of the financial resources. Mainly, specifying factors that can help investors to identify the companies with a higher quality may lead to a lower level of information asymmetry and adverse selection and a larger number of efficient investments.

This study will also have some few environmental implication, even though of a more indirect character. In particular, as the awareness about sustainability is growing, more socially responsible business ideas will be able to reach out to the wider public of potential investors and receive their support both in terms of financial resource and human capital. Identification of signals of quality will help such projects to increase their chances for a successful fundraising through equity-based crowdfunding.
3. Theoretical framework

This chapter explores the market inefficiencies at the market of crowdfunding. In particular, it presents the results of several theoretical studies about the degree of information asymmetry and adverse selection in the context of equity-based crowdfunding. The second part of the chapter presents the tools, called quality signals, that decrease the market inefficiency problems. In addition, it presents the results of several theoretical and empirical studies within quality signaling in crowdfunding.

Because of a recent nature of crowdfunding phenomenon, most of the research within crowdfunding has been conducted in an exploratory manner (Mollick, 2014). Therefore, the first studies, that are dating back to 2010, were mainly concentrated on discovering the nature and definition of crowdfunding, exploring its origin and distinguishing this phenomenon from crowdsourcing, micro-finance and charitable activities. The earliest studies within crowdfunding were focusing only on a reward-based type of crowdfunding and used qualitative data gathered through case studies and interviews. Lately, attention of researchers has been captured by equity- and loan-based crowdfunding. In overall, scholars attempted to theoretically systemize the circumstances under which startups and potential investors might be interested in crowdfunding, estimate the role of geography and understand the nature of market failures within crowdfunding (Schwienbacher & Larralde, 2010) (Belleflamme et al., 2010) (Hemer, 2011).

In contrast to the scientific literature in reward-based crowdfunding, the research in equity-crowdfunding is still nascent and more conceptual in its nature.

In the context of a constantly evolving legislation and legal uncertainty, Agrawal et al. (2013) presented a conceptual study where he speculated on the main characteristics of a crowd equity market. A part of this study was dedicated to understanding the incentives that drive the activity of actors in equity-crowdfunding. For entrepreneurs, the opportunity to receive market’s acknowledgement, feedback or advice together with a less important role of geographical location had potential to make cost of equity less expensive than in the market of traditional entrepreneurial financing. Investors, on the other hand, would perceive the opportunity to be a part of the “next big thing” along with the access to social network, optional rewards and actualization of philanthropic feelings. Crowdfunding platforms, in their turn, were about to acquire a solid source of revenue, which at the same time led to more responsibility with regard to the quality of projects, risk of fraud and the size of their network of investors and entrepreneurs.

3.1. Information asymmetry and adverse selection

Similar to research in traditional financial markets, research within crowdfunding, raised the issue of market inefficiency. (Schwienbacher & Larralde, 2010) (Belleflamme et al., 2010) (Hemer, 2011) (Denis, 2004, p. 303). In fact, any market suffers from information asymmetry — a situation, where one agent possesses more information about the quality, nature and/or potential of the object of interest than the other agent (Akerlof, 1970) Because buyers possess less information about the true quality of a product, they are unable to correctly distinguish between low- and high quality products. This leads to adverse selection, which, in its turn, results in a continuous replacement of high quality products with the products of lower quality. In the extreme case, adverse selection may lead to the collapse of the entire market. (Akerlof, 1970), (Berger & Udell, 1998) and (Gregory et al., 2005)

In terms of startups’ fundraising, where entrepreneurs possess more information about the quality of their ventures, while investors are willing to buy ventures’ shares at some average price, low profitability firms will receive higher premiums for their shares and will be overvalued. This will make sellers of low profitability ventures more motivated to dilute their ownership in order to finance their further development. High profitability firms, in their turn, will be undervalued due to a lower share price premium, assigned by the market, and will, therefore, be less inclined into the dilution of the ownership.
In general, because of the information asymmetry, high quality startups do not receive sufficient funding, while low quality startups may raise more money than their true value suggests. This leads to misallocation of funds as startups do not receive the amount of funding they truly deserve. In the long term, when buyers or investors will discover a lower quality of startups, share prices will fall drastically and may even lead to the market collapse. (Akerlof, 1970) (Gregory et al., 2005)

Researchers agree on the opinion that the magnitude of these market inefficiencies in the market of entrepreneurial finance is much larger than in the field of traditional corporate finance (Denis, 2004). Schwienbacher & Larralde (2010) claimed that the problem of information asymmetry might be even more severe in crowdfunding than in the market of traditional entrepreneurial finance due to the low level or the total absence of professional financial knowledge possessed by crowdinvestors. On the one hand, this assumption was implied by the idea that the majority of crowdinvestors could not make a reasonable assessment of the value-relevant information and conduct a reliable due-diligence due to their armature knowledge in finance. On the other hand, the problems of information asymmetry and adverse selection in crowdfunding are challenged further as entrepreneurs are reluctant to disclose information to unprofessional investors because of the risk of severe misinterpretation and a risk of idea stealing.

A different perspective on asymmetry of information in crowdfunding was expressed by Koning & Model (2014), who used the theory of transaction costs and presented crowdfunding as technological innovation. From this perspective, in contrast to traditional sources of entrepreneurial finance, crowdfunding itself can be seen as a tool that helped to mitigate information asymmetry between investors and entrepreneurs. In particular, the technology behind crowdfunding allowed mitigating information asymmetry through the reduction of search costs, provision of refund mechanisms, and a higher level of information transparency.

Agrawal et al. (2013) takes a more neutral position in this discussion and, on the example of reward-based campaigns, claims that even though investors are constrained by the general uncertainty in entrepreneur’s competence and the high level of perceived risks, crowdfunding makes information more accessible, simplifies the process of information collection and monitoring of the entrepreneur’s progress.

To conclude, a general overview of the literature on information asymmetry within crowdfunding indicates the presence of conflicting views on the role of information asymmetry and adverse selection within equity crowdfunding. On the one hand, analyzing the problematics from the perspective of investor’s relative incompetence and entrepreneur’s insecurity about idea protection and property rights, asymmetry of information in crowdfunding may be more challenging than in the context of traditional sources of finance. On the other hand, seeing crowdfunding as technological innovation, which, by means of information technology, increases networking and information sharing, the problem of information asymmetry seems to be less urgent.

Considering these contrasting opinions, Haas, Blohm, & Leimeister (2014) advises to keep in mind that most of the studies (especially earlier studies) on asymmetry of information within crowdfunding have a more conceptual nature rather than a solid theoretical or empirical foundation and, therefore, have to be considered with some portion of discreetness and deliberation. Nevertheless, despite of the contradicting opinions about the degree of information asymmetry within crowdfunding, all researchers agree upon its presence.

3.2. Signaling mechanism and quality signals

One way to resolve the problem of adverse selection and by this prevent an eventual market failure was to search for signals that would help more informed market agents (sellers or entrepreneurs) to credibly communicate their knowledge about the product, business or service to potential buyers or investors.
(Spence, 1973). By signals, Spence (1973) meant the characteristics which revealed information about the product or venture and which could be manipulated by the individual or venture.

If to bring forward an assumption about a general expectation of quality indicated by Akerlof (1970) and Izquierdo and Izquierdo (2007), signals, according to Spence (1973), serve as parameters, which alter the conditional expectations of buyers.

Just as according to Spence’s classical work, education may be a signal of quality made by the employee to the potential employers on a labor market, venture quality signals (advertising, guarantees, price reduction, business awards, etc.) may signal profitability, productivity and competitive advantages of the companies.

In some cases, signals may be presented in the form of dividends as it is less costly for the firms to retain the earnings than to issue dividends. In this case, market perceives dividends as positive news because it indirectly informs that insiders possess some information about the higher profitability in future, which, in its turn, allows the companies to issue more dividends. By perceiving this signal as positive news, market is ready to pay more for the shares, what compensates the company’s costs of issuing dividends and motivates high quality ventures to participate in the process of fundraising.

In total, the company that has positive future expectations and clearly communicates them to investors, bears less costs when issuing dividends than the company, which has a poor performance. Taking this into account, issuing dividends may be one of the quality signals that resolves the problem of adverse selection. (Spence, 1973)

Additional information from third parties, in particular the one streamed through social media, can also be seen as a quality signal, which increase the variability of buyer’s quality expectation over time and mitigate the effects of adverse selection. (Izquierdo & Izquierdo, 2007)

One way to analyze the signaling information, which uninformed agents receive from the owners of insider information, is to apply the method of screening – the process by which uninformed agents will identify the differences in risk and other factors among alternative options. This allows uninformed party to receive a relatively clearer picture on a risk distribution among the informed agents. (Stiglitz, 1975) Quality signaling may even give a wider perspective of the quality of companies presented in the market because signaling in itself creates a probability distribution, which indicates the likelihood of a company’s quality and success (Belleflamme & Peitz, 2007)

According to the statistics provided in section 2.4 in Chapter 2, crowdfunding market is growing and allows hundreds of startups to raise funds at various crowdfunding platforms. According to Ahlers et al. (2014), this situation indicates clearly at the presence of signaling mechanisms that help potential investors to estimate a more or less accurate quality of startups and prevent the market of crowdfunding from collapse. Moreover, if to assume that both agents in the market act rationally, then entrepreneurs will try to use as many quality signals as possible to communicate a true value of their startups to potential investors.

Several theoretical and empirical academic studies were devoted to identification and assessment of signaling mechanisms that would mitigate the informational gap between entrepreneurs and potential investors and would increase the chances of collecting the desired amount of finance. Most of these studies though were conducted with regard to reward-based crowdfunding and taken as the basis for the further research within equity-crowdfunding.

Following the logic of Koning & Model (2014), Constant (2014) suggested to look at crowdfunding as a signaling mechanism in itself, which sends specific information to the market. On the one hand, running a successful crowdfunding campaign may signal that the market accepts business idea and acknowledges its legitimacy. This informal validation of startups’ quality is more likely to make the campaign fully funded. On the other hand, turning to crowdfunding may be perceived as a signal of the
history of failure because it may indirectly indicate that entrepreneurs failed to attract traditional financing in the past.

The first attempt to empirically study specific signaling factors in crowdfunding was made by Mollick (2013), who studied 2101 reward-based campaigns on Kickstarter in order to compare whether crowdinvestors respond to the signaling factors, which are traditionally used by VC. In particular, the level of preparedness, background of founders and recognition by external parties were important factors, which signaled a specific quality of the campaign. The results of this study also suggested that crowdinvestors responded to the same signals of quality as VC tend to do and, therefore, had an ability to distinguish between the projects of high and low quality. Also, crowdfunding could be perceived as a more efficient way of acquiring financing as it enables a more active information exchange through the virtual network and is more neutral to gender and geography than traditional crowdfunding (Mollick, 2013).

Information asymmetry could also be reduced through the cooperation between crowdfunding platforms and various third-parties, for example credit institutes (Mollick, 2014). This opinion is supported by Beugre (2014) who looked at crowdfunding from the perspective of value co-creation and identified four principles that mitigate uncertainties and information asymmetry between investors and entrepreneurs – access, dialog, transparency, risk-benefit sharing.

A more thorough empirical study of a cross-sectional data on 48526 reward-based projects at Kickstarter attempted to further explore the relationships between the exogenous characteristics of the crowdfunding projects and the probability of their successful outcome. The research showed that a larger funding goal, longer investment period and the presence of spelling errors had a negative impact on the probability of success. Being featured by external parties, having a large social network, a well-prepared video pitch, constant updates and a business plan were perceived as the signals of a higher quality and increased the chances for successful funding through a crowdfunding campaign. (Mollick, 2014)

Even though the literature on reward-based crowdfunding may provide valuable insights into the nature and characteristics of equity crowdfunding, a crucial difference between these two types of crowdfunding must not be overlooked. Agrawal et al. (2013) and Ahlers et al. (2014) suggest that equity crowdfunding differs from the reward-based crowdfunding in terms of information asymmetry and risk perception. In contrast to backers, crowd investors have an access not only to the market perspectives of the product and the entrepreneur’s ability to deliver it but also the entrepreneur’s ability to increase value of equity.

Potentially high costs of information disclosure, substantial administration within investor management, high costs of due diligence together with the risk of failure and fraud would, in Agrawal’s opinion, be main factors multiplying the problem of information asymmetry. This will eventually lead to higher discounts on the companies’ value and would lead to adverse selection, where low-quality firms would dominate high-quality firms. Agrawal also saw a risk for free-riding as open information and low levels of investments would induce crowdinvestors to trace the investment patterns of other investors that would lead to the absence of investments in general.

Realizing a risk for a high level of information asymmetry and adverse selection, Agrawal et al. (2013) suggests using reputation signaling as a mean to mitigate these problems and increase the value of crowd-equity venture. In this matter, Agrawal et al. (2013) refers to a higher level of information disclosure with regard to aims, patents, and customer feedback, professional and educational background of founders and executives as well as acknowledgements by third parties.

The first attempt to empirically investigate the possible quality signals in equity-crowdfunding was made by Ahlers et al. (2014) on an example of an Australian crowdinvesting platform ASSOB. By examining the impact of six variable sets on such endogenous variables as funding amount, number of investors and investment speed, Ahlers et al. (2014) concludes that such signals as the percentage of
equity offered, number and education of board members, exit strategy, provision of financial forecasts as well as external certification in form patents and governmental grants have a significant impact on the success of a crowdinvesting campaign.

There was also identified a separate group of endogenous signals, which had the potential to magnify already existing investments. The effect of quality signaling was further magnified through a word of mouth, additional promotion, attraction and external media channels (Mollick, 2013) (Agrawal et al., 2013). This implied the presence of Herding and Matthew Effects. That is, signals of quality were instantly multiplying the quality of the projects in the eyes of crowdinvestors. Also, the signaling mechanism increased the effect of the “wisdom of crowd” – the ability of crowdinvestors to better distinguish between high and low quality projects.

Mollick & Kuppuswami (2014) studied the development of Kickstarter campaigns after crowdfunding. The majority of the projects delayed the delivery of promised results but despite of that they were active and managed to attract external financing from various traditional sources. The entrepreneurs could also gain additional customer base, expand in terms of employees and gain more publicity. To a large extent, a successful post-crowdfunding performance of startups was explained by a well-developed business plan, schedule, a specific background in industry and external recognition. The network of entrepreneurs was less important in the context of post-crowdfunding development.

In his study, Ahlers et al. (2014) has also mentioned that effective signals have to be observable and should be characterized by signal cost. Whereas the first characteristic means that signals should be well “understood by investors”, the presence of signal costs assures that low-quality companies are not attempting to use the same signals as high-quality companies. (Ahlers et al., 2014, p. 19)

3.3. Research question and hypotheses

Even though a number of academic studies was devoted to the topic or quality signaling in crowdfunding, the current literature review shows that most of these studies have an exploratory nature and, therefore, many aspects still have to be studied further.

More specifically, the existing empirical studies that aim at exploring quality signaling within crowdfunding are limited to either only reward-based crowdfunding (Mollick, 2014) or only a specific country and platform (Ahlers et al., 2014). Agrawal et al. (2013) and Ahlers et al. (2014) point out these limitations and encourage more research on this topic.

Therefore, the aim of this study is to make contribution to previous exploratory research on signaling in crowdinvesting by providing theoretical and practical insights on the quality signals that increase the probability of a successful campaign funding.

With this said, the research question of the following study will be formulated in a following way: 

*Which quality signals increase the probability of closing an equity-based crowdfunding campaign successfully?*

For this purpose, I will collect the data on the outcome of the campaigns (dependent variable) and the data on various quality signals (independent variables) from 82 equity-based campaigns listed on the Nordic’s leading international crowdfunding platform FundedByMe.com between 2012 and July 2015. Crowdfunding platforms impose different requirements on the information that companies should present in the fundraising campaigns. Therefore, the data presented in this thesis will partially differ from the data presented in the previous studies in the theoretical framework chapter.

Along with the logic of Mollick (2013) and Ahlers et al. (2014) as well as the data available at FundedByMe’s campaign pages, quality signals (explanatory variables) were divided into four groups: general signals (funding goal, percentage of equity offered for sale, share price, age of a firm), level of preparedness (video, business plan, investment memorandum, financial forecast, valuation), third-party
accreditation (awards, governmental grants, patents, partnerships, external financing, media articles) and the quality of entrepreneurial team (number of the team members, business experience, master degree in economics, business or finance, board members, non-executive board). All the variables will be tested in the context of fixed-effect variables – launch year, city, country and industry category. The effect of the quality signals on the probability of a successful outcome will be estimated with the help of four logistic (logit) regressions corresponding to each of the above specified group of explanatory variables. The division of the variables into four thematic groups and the corresponding estimation of the four regression models respective to these groups is motivated by an attempt to avoid an issue of model overfitting. Overfitting leads to misleading estimates and occurs when a sample size is too small while the number of explanatory variables is too large. (Carter et al., 2008)

Based on the data collected from Fundedbyme.com, the literature review within equity crowdfunding and the categorization of the empirical models, the following hypotheses will be tested:

H1: Startups which have a lower funding goal, a lower share price, a lower level of dilution and are older are more likely to succeed.

H2: Startups which demonstrate preparedness are more likely to succeed.

H3: Startups which demonstrate third-party recognition are more likely to succeed.

H4: Startups which have a larger and more qualitative entrepreneurial team are more likely to succeed.
4. Methodology

The purpose of this chapter is to describe the methodology used in the current study. First, it includes the description of the data source - a crowdfunding platform Fundedbyme.com. Afterwards, it includes the description of the logistic regression model that is used for estimating the relationships between the explanatory and the dependent variables. Finally, a description of the dependent and independent variables follow.

4.1. Fundedbyme.com

FundedByMe was founded in March 2011 in Stockholm, Sweden, and is considered to be one of the Europe’s leading and fastest growing crowdfunding platforms. Currently, this crowdfunding platform has its representatives in all Nordic countries as well as in Singapore and Malaysia. It accepts crowdfunding campaigns from more than 10 countries, while providing investment opportunities for investors from 172 countries.

By offering three types of crowdfunding products – rewards, equity and loans – FundedByMe provides entrepreneurs and investors with a one-stop shop solution and, by this, helps to raise financing for both younger and more mature companies. The focus on cross-border investments is intended to generate not only a large funding pool but also a larger network and a variety of competences.

FundedByMe has a strong network of partners with expertise in equity issue process, due diligence and company valuation. FundedByMe is also a member of the Nordic Crowdfunding Alliance – an organization, which strives to create an even friendlier crowdfunding climate in the Nordic countries and, by this, to contribute to the development of entrepreneurship and national economic growth.

Only in 2013, just before the launch of an equity product, FundedByMe registered the value of sales equal to SEK 2.2M and a net turnover of SEK 8.3M (Felländer, Ingram, & Teigland, 2015). In general, FundedByMe served around 440 companies and generated more than €18 000 000 in financing.

Currently, by offering all three crowdfunding products and attracting cross-border investments, FundedByMe competes with various European and American platforms. Its competitors specialize in one specific type of crowdfunding, i.e. Kickstarter and Indiegogo provide entrepreneurs with donation- and reward-based models. Funding Circle, a British platform, and Swedish Toborrow are the largest competitors in loan-based crowdfunding. Finally, British Crowdcube and Finnish Invesdor are main competitors in equity-based crowdfunding. Kickstarter, Crowdcube and Toborrow are currently competing with FundedByMe in its largest market – Sweden.

Among all three crowdfunding products, equity-based is a product, which ensures the platform’s unique position in the Nordic market and is considered to be the largest source of revenue for FundedByMe. By generating an average funding of €122706 per campaign and attracting average investment of €5935, FundedByMe managed to raise €9541842 and grew at a rate of CAGR 449% - that is nearly 4 times higher than the CAGR of the European equity-crowdfunding. Based on these results, FundedByMe has so far acquired 12% of the European equity crowdfunding market and 83% of the Nordic equity crowdfunding market.

In the context of reward-based crowdfunding, FundedByMe is practicing an all-or-nothing model. In other words, if the funding goal in these campaigns is not reached, the money is returned to the investors and entrepreneurs are free of charge. However, the success of the equity- and loan-based campaigns is defined as achieving at least 80% of the initial funding goal. In rare cases, it can be an exception and if
the crowd investors give their approval, entrepreneurs can issue shares even with the funding of less than 80%.

Currently, a maximum length of an equity-based campaign round is 45 days, however, it varied considerably since the launch of the product. A crowdfunding round can be closed before the final date if the campaign manages to raise 100% of the indicated funding before the expiry period and the entrepreneur does not wish to raise more funding. In order to create a campaign, investors should create an account, and fill in the suggested campaign form. During this process an entrepreneur is suggested to provide video, images, a broad description of a company, target market, and the background of the team members. Also, it is important to attach financial documentation and the investment proposal.

Campaigns that were created and finally submitted by the entrepreneurs are going through an Approval Committee – a team, which assesses the quality of the campaign from both the investment and content perspective. Often this review results in some general comments and feedback that are directed at improving the quality of the campaign. However, FundedByMe neither makes financial valuation, nor it provides any financial advice. Those companies that were submitted and approved can go live after paying a fixed fee to FundedByMe.

By charging a percentage fee on the actual amount of money raised, FundedByMe business model is largely dependent on the successful outcome of crowdfunding rounds. That is why, even though the primary responsibility for the crowdfunding outcome is on the entrepreneur, FundedByMe offers an access to potential investors, organizes investor pitch events, sends out newsletters, reminders, announcements and, finally, spreads information about the campaigns in social media.

FundedByMe provides a number of questions that help entrepreneurs to cover the most important part of their written presentation. However, the content of the presentation can be easily adjusted by each particular entrepreneur and, therefore, the campaigns vary in terms of the information provided to potential investors. In these circumstances, it is natural to assume that entrepreneurs may use different signals to inform investors about the quality of their ventures.

This makes the data at FundedByMe a good source for exploring which quality signals increase the probability of a successful outcome in equity-based crowdfunding.

4.2. Empirical model

This study aims to explore which quality signals increase the likelihood of a successful outcome of the equity-based crowdfunding campaigns listed at FundedByMe.com.

To achieve this aim I will estimate the effect of various quality signals that are used in those particular equity-based crowdfunding campaigns (independent explanatory variables) on the outcome of this campaign (dependent variable) by applying regression analysis.

The outcome of an equity-based crowdfunding campaign – the dependent variable – can be either successful or unsuccessful. Therefore, the chosen dependent variable is a qualitative variable, which has a dichotomous or an “either-or” nature. Because both outcomes are jointly exhaustive and mutually exclusive, only one of the two outcomes can take place at a time.

In the current research, value 1 will be assigned to a successful outcome, which takes place if the campaign achieves at least 80% of its funding goal, and value 0 – to an unsuccessful outcome, which takes place when the campaign attracts less than 80% of its funding goal:

\[ y = \begin{cases} 
1 & \text{if successful} \\
0 & \text{if unsuccessful} 
\end{cases} \]  

(1)

Such variable, where a number is assigned to a qualitative characteristic, is known as a dummy, binary or an indicator variable. (Carter, Griffiths, & Lim, 2008) This binary variable is also a random variable,
because we observe the outcome of a random sample of campaigns and because it is not possible to perfectly predict the outcome of an equity-based crowdfunding campaign until this outcome is observed. Facing the uncertainty about the outcome of the campaign, it would be more appropriate to talk about the probability of a specific outcome. In these circumstances, the probability that the campaign succeeds is \( P[y = 1] = p \), while the probability of an unsuccessful outcome is, consequently, \( 1 - p \).

Such binary random variable has a probability function as the one shown in equation (2)

\[
f(y) = p^y(1-p)^{1-y}, y = 0,1
\]

with the expected value \( E(y) = p \) and variance \( var(y) = p(1-p) \).

Models with dichotomous dependent variables are known as binary choice models. Such models show why a specific outcome occurs by estimating the extent to which each independent variable affects the probability of a specific outcome.

The effect of various independent variables (\( x' \)) on a probability of a successful outcome \( (y = 1) \) can be presented as the general functional form exhibited in equation (3), which has both a systematic part \( E(y) = F(x' \beta) \) and an unpredictable random error, \( e \)

\[
y = P[y = 1|x] = F(x' \beta) + e
\]

In general, the binary outcome presented in equation (3) can be modeled in three different ways - the linear probability model, the probit model and the logit model. (Carter et al., 2008)

The linear probability model assumes that the change in the dependent variable triggered by a one-unit change in an explanatory variable is constant. However, this assumption does not hold for the estimation of probability, because it may produce the resulting values outside the range of 0 and 1. This is inconsistent for the concept of probability and makes this model inappropriate for the current research.

Both probit and logit models resolve the issue of the linear probability model and constrain the probability of a binary outcome to the values between 0 and 1. This is the case because both models assume nonlinear relationships between the probability of a specific outcome and the independent variables. Probit and logit model are based on different probability density functions and, therefore, provide somewhat different estimations of regression coefficients. According to a common opinion within econometrics, both models provide quite similar results. However, probit model is much more complicated from the calculation perspective. (Carter et al., 2008)

Considering for and against of each of the three binary choice models, the logit model would be the most appropriate for modeling the binary outcome in the current research. Additionally, the current choice of an empirical model goes along with the methodology applied in similar empirical studies conducted by Mollick (2014) and Ahlers et al. (2014). These researches agree upon the fact that the logistic regression model is the most appropriate empirical model for the exploratory study of signaling in crowdfunding.

The logistic regression model

The logistic regression or Logit model is presented in equation (4) and shows the likelihood of a successful outcome

\[
p = F(x' \beta) = \frac{e^{x' \beta}}{1 + e^{x' \beta}} = \frac{\exp(x' \beta)}{1 + \exp(x' \beta)}
\]
Alternatively, the probability of an unsuccessful outcome is presented in equation (5)

\[ 1 - p = \frac{1}{1 + e^{x'\beta}} \]  

(5)

The exponential function ensures an S-shaped form of a probability distribution and ensures that the value of an estimated dependent variable falls between 0 and 1.

The odds of a successful outcome are obtained in equation (6), by dividing equations (4) and (5).

\[ \frac{p}{1 - p} = \frac{1 + e^{x\beta}}{1 + e^{-x\beta}} = e^{x\beta} \]  

(6)

If to take the logarithm from the odds ratio, the log of odds ratio becomes linear in both variables and parameters. That is the logit function:

\[ L_i = \ln \left( \frac{p}{1 - p} \right) = x'\beta = \beta_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots + \beta_n x_n \]  

(7)

\( x'\beta \) is a linear regression of a form \( x'\beta = \beta_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots + \beta_n x_n \)

The slope of the logit curve is not constant and shows the change in the probability of a successful outcome (the expected value) as the explanatory variable changes by 1 unit.

Regression coefficients in the equation (7) can be estimated by using maximum likelihood estimates, that is, the estimates that increase the value of the logit function and the probability of observing the sample.

Therefore, the estimated model will take the form presented in equation (8)

\[ x'\beta = b_1 + b_2 x_2 + b_3 x_3 + \cdots + b_n x_n \]  

(8)

where \( b_n \) is a maximum likelihood estimate.

The estimated coefficients in the logit model may be interpreted only from the perspective of a sign.

The effect on the probability of a successful outcome depends on the sign of the estimated regression coefficient \( \beta_j \) and is accurately estimated because the value of the logistic probability density function \( F(x'\beta) \) is always positive.

Thus, the probability of a successful outcome increases if the value of the estimated regression coefficient of a specific variable is positive and, consequently, decreases if the value of the estimate is negative. Positive or negative effect of a specific independent variable on a probability of a successful outcome is true only if we assume that all other independent variables are held constant.

The absolute effect of coefficients on the independent variable, in its turn, may be interpreted only after calculating the marginal effects. To assess the effect of independent variables on the probability of a successful outcome in numeric terms, a derivative has to be taken from the logistic probability density function from equation (8)

\[ \frac{\partial p}{\partial x_j} = F(x'\beta)\beta_j = F(x'\beta)(1 - F(x'\beta))\beta_j = \frac{e^{x\beta}}{(1 + e^{x\beta})} \beta_j \]  

(9)

where \( j \) is a number of an independent variable.

The calculation of marginal effects for the coefficients allows estimating the change in probability of a successful outcome given a one-unit change in the independent variable \( x_j \).
The estimated value of a marginal effect depends on the chosen value of the explanatory variable \( x_j \), which in this case, as presented in equation (10), is a mean or an average value of an outcome in the sample.

\[
\frac{\partial p}{\partial x_j} = F'(\hat{x}'\beta)\beta_j \quad (10)
\]

The logit model will be estimated with the help of the econometric package STATA, which will automatically provide the maximum likelihood estimates of the regression coefficients and the marginal effects calculated at an average value.

To estimate the statistical significance of the estimated coefficients and to accept/reject the hypothesis about the effect, which each independent variable has on the outcome of the campaign, the p-value with will be compared with the significance level of the regression coefficient. P-value shows the probability of accepting insignificant regression coefficients. If p-value produced by econometric package STATA is less than the significance level, the null-hypothesis is rejected because the estimate is statistically significant.

The accuracy of the model

The accuracy of the regression model is measured with a summary statistic known as goodness-of-fit measure, which shows the precision with which the estimated model forecasts the probability of successful outcome or the accuracy of the fit between the calculated and observed probabilities. The goodness-of-fit can be calculated as the percentage of the correctly predicted values in the total number of predictions. Logit model does not have the same goodness-of-fit measure as the one used in ordinary least square analysis. Nevertheless, the goodness of fit in logit is approximated by pseudo R-squared statistics, which will be indicated in the output of the results in the Result section. It is usually low for the logit model and, according to econometricians, has to be interpreted with caution. Therefore, its interpretation will be disregarded. (Gujarati, 2012)

Heteroscedasticity

Other factors than the chosen explanatory variables may influence the probability of success when the values of the explanatory variables increase. In this case the random variable may have a larger variance and is more likely to take large values. The problem when the random part of the equation is directly dependent on the explanatory variable is called heteroscedasticity. In that case both the dependent variable and the error term are heteroscedastic and a classical assumption of a constant variance of the error term is violated. The presence of heteroscedasticity leads to the incorrect estimation of the least squares estimators and, thus to the misleading tests of statistical significance and hypothesis (Carter, Griffiths, & Lim, 2008, pp. 300-301). Heteroscedasticity in the logit model is defined by deviance residuals and often serves as a measurement of the model’s overall fit. The purpose with the logit model is to model the probability of a specific outcome so as to minimize the sum of the squared deviance residuals for all the observations. Rectification of heteroscedasticity in empirical studies is considered to be problematic because often researchers cannot distinguish between the effects coming from changing variance and misspecified mean function (Hole, 2006). Additionally, because signals of quality to a big extent are based on the presence or absence of specific characteristics, there is no reason to suspect the presence of heteroscedasticity in the current model. Due to the information above, the presence of heteroscedasticity will not be tested in the current thesis.

Endogeneity

The problem of endogeneity is present when an explanatory variable is correlated with the error term or, in other words, variables that were not included in the model. For example, a larger number of members in the entrepreneurial team might be correlated with the larger number of friends in social
media (a variable, which is not included in any of the current models) – something that generates more traffic to the crowdfunding webpage during the crowdfunding round and increases the probability of success. In this case the estimators can be inconsistent and biased (Carter, Griffiths, & Lim, 2008). Similar studies of Mollick (2013), Mollick (2014) and Ahlers et al. (2014) did not make a check on endogeneity, what will also be the case for the current study.

**Collinearity**

The problem of collinearity arises when two or more explanatory variables are changing in a systematic way (correlated) what leads to the increased variance of the estimated coefficient, large standard errors and, thus, to an unreliable result. The main reason for the unreliable estimates is that it is hard to isolate the economic relationships between dependent variable and several explanatory variables from each other. Collinearity is more likely to be present in models with more than two explanatory variables or when a variable is tested together with its square or cube form. In this case it means that the data is not particularly informative. If the estimated coefficients are the same as expected, then there is no necessity to test for collinearity, otherwise a test on pairwise correlation should be performed. When multicollinearity is present, the variances of two variables increase. It is possible to see the speed of variance with the help of VIF (variance-inflating factor). VIF shows how the variance of an estimate is affected by the presence of multicollinearity. According to a more informal rule of thumb, the problem of multicollinearity has to be addressed when the Pearson’s correlation between variables is more than 0.7, while according to the VIF test the values more than 5 indicate the presence of high correlation between variables. It can still be important to keep in mind that the VIF values between 1 and 5 indicate at a moderate correlation. (Gujarati, 2012)

**4.3. Data**

This paper analyzes 82 equity-based campaigns listed at FundedByMe.com since the introduction of the equity product in 2012 until July 2015. Within the indicated time period a total of 89 companies were running their equity crowdfunding at FundedByMe.com. As it is explained below, some of the campaigns were excluded from the sample of the current research.

In particular, two of the campaigns – Norwegian “Jobspot.no” and Swedish “Carin Wester” – cancelled their crowdfunding campaigns before the official closure of the crowdfunding round. The campaign “Sumo Apps” did not contain enough information for the purpose of the current research, while a Swedish campaign “A private story” diluted 100% of its ownership in a company – a strong signal which considerably undermines the effect of all other quality signals. In addition, FundedByMe which is itself a crowdfunded company, ran two funding rounds. In order to eliminate the possibility of biased results, both campaigns were excluded from the sample used in the current research. Mainly, because FundedByMe is a well-known crowdfunding platform and has a strong network of potential investors, signals of quality used by FundedByMe are assumed to have a stronger effect on investors than identical signals of quality used by other companies. In total, the sample was restricted to 82 equity-based crowdfunding campaigns.

Before 2015 FundedByMe showed the funding goal and the amount of money actually raised in either Euro or national currency. This research follows, however, a recently introduced decision to exhibit all the transactions in Euro. Therefore, the amount of money in national currency was transferred to Euro based on an average exchange rate, which was registered on the day when the crowdfunding campaign went live. The data on the exchange rate was collected from exchangerates.org.uk.

From the research question stated in Chapter 4, it follows that the dependent variable relevant for this study is the outcome of a crowdfunding campaign. Further, along with the logic of Mollick (2013) and Ahlers et al. (2014), quality signals collected from 82 equity campaigns were divided into four groups: general signals, level of preparedness, third-party accreditation and the quality of entrepreneurial team. Taking into account a relatively large number of all independent variables put together and a relatively
small sample size, it would be reasonable to run separate regressions for each of four groups of variables. This will help to avoid possible misspecifications and inaccuracy of the common model, which would include all the variables together. Each of the four models will include fixed-effect or control variables, which will account for differences in the probability to succeed with respect to geographical origin of the company, industry of its operations and the year of the crowdfunding campaign launch.

Disclaimer: this thesis includes the crowdfunding campaigns only until July 2015.

**Dependent variable:**

*The outcome of an equity-based campaign*

The outcome of the campaign is a dependent variable which can take either of two forms – success or failure. The campaign’s outcome is measured by the percentage funded – the amount of money actually raised through a crowdfunding round divided by the initial funding goal.

For the purpose of this study, an equity campaign will be considered successful if it reaches at least 80% of its initial funding goal. In the opposite case, the campaign will be defined as unsuccessful. Therefore, the dependent variable will be a dichotomous variable with 1 defining the funding of at least 80% of the initial funding goal, and 0 – funding of less than 80% of the funding goal.

**Independent variables:**

**General signals**

*This group includes such explanatory variables as the funding goal, percentage of equity offered for sale, price per share and the age of the firm.*

**Funding goal**

The funding goal variable describes the amount of money entrepreneurs want to raise by means of equity crowdfunding. According to FundedByMe.com entrepreneurs can consider equity crowdfunding as a source of financing if they aim at raising at least €25 000.

By analyzing reward-based campaigns, Mollick (2014) admits that despite the variation of the funding goal across the companies, the amount of money entrepreneurs seek should be realistic. Aiming at too low amount can be useless and will not help entrepreneurs to manage their business/product development. Too high funding goal, on the other hand, will more likely reduce the campaign’s chances for success because investors will more likely doubt the company’s ability to generate return comparable to the amount of their funding goal. Taking into account Mollick’s (2014) findings and the presence of the lowest funding boundary implied by FundedByMe, it will be reasonable to assume that, keeping all other factors constant, an increase in the absolute amount of funding goal decreases the probability of a successful outcome of the campaign.

**Percentage of equity offered**

Percentage of company’s equity offered describes the extent to which an entrepreneur wants to dilute the ownership of the company. It is calculated as the number of the shares offered to investors at FundedByMe divided by the number of total shares in the company.

Ahlers et al. (2014) in line with Leland & Pyle (1977) sees the diluted percentage of ownership as an indication of riskiness and expect negative relationships between the probability of a successful outcome of an equity campaign and the percentage of equity offered. In particular, Leland and Pyle (1977) expect a higher level of ownership dilution to be a signal of lower future cash flows. It is costly for entrepreneurs to retain larger proportion of ownership, therefore, it will be a case only if they expect high return on investment in future. Furthermore, owner’s bigger stake in the company may help “to align the interest of funders and founders” (Ahlers et al., 2014, p. 24).
Price per share

Price per share is either shown at the campaign’s page or is calculated as the pre-money valuation of the company divided by the total number of shares outstanding. This variable is nothing more but an indication of the current valuation, which is relevant before the investment is made (pre-money valuation). A higher price per share implies a higher valuation.

Ahlers et al. (2014) evaluates price per share as a factor relevant for the speed of investment and, consequently, the growth of a firm. At FundedByMe.com companies have only one investing round and this means that the lower the speed of investments, the lower is the probability of reaching 80% of the goal during the funding round. Taking into account that share price and speed of investment are negatively related, it would be reasonable to assume negative relationships between share price and the probability of a successful outcome. Furthermore, a high price per share may either signal an overvalued company or be perceived as a disadvantage if crowdinvestors compare share prices of several companies.

Firm age

The age of the firm was defined as the number of years that passed from the founding year to the year of crowdfunding campaign launch. Firm age may serve as an indication of entrepreneur’s devotion to business in terms of money and time that were invested. Also a company that has been in business longer may give an impression of lower risks, larger network and stronger vitality. (Ahlers et al., 2014). Therefore, positive relationships are expected between the age of the firm and the probability of a successful outcome.

Level of preparedness

This group of explanatory variables include such factors as the presence of the video and business documentation (business plan, investment memorandum, financial forecast and valuation).

Preparedness according to Chen, Yao & Kotha (2009) is supposed to define the time and effort entrepreneurs invest into the campaign creation as well as the degree to which the pitch conforms to the suggested criteria for successful pitches.

In the current study, the group of quality signals that define the level of preparedness are the presence of video and the presence of the business documentation.

Video

Video helps to process information about the company quicker and also suggests how much effort entrepreneurs put into their campaign. (Mollick, 2014)

Business documentation

The presence of business plan, investment memorandum, financial forecast and valuation documents in line with Mollick (2013) and Ahlers et al. (2014) help to assess risks and opportunities connected with this specific business venture. In addition, it provides investors with a deeper insight about the projected sales as well as future value of a company and helps to estimate the relationships between the expected risks and the projected gain, the potential to increase earnings and generate positive future cash flow. According to Mollick (2013) and Ahlers et al. (2014), startups that do not provide these documents signal a high level of uncertainty.

Because the provision of these signals of quality requires time, it inevitably signals a certain level of professionalism, openness and trust to the entrepreneurial team. (Chen et al., 2009)

Because not all campaigns used the above stated signals of preparedness, these variables were presented as dummy variables, taking value 1 if the signal was used in the campaign and 0 otherwise.
Third-party recognition

Third-party recognition includes such explanatory variables as granted awards, patents, established partnerships, previous financing and presence in media.

Previous financing, established partnerships, received patents and awards

The external certification is expected to be positively related to the outcome of the campaign. As in case of VC, recognition of startups by third parties in either the form of previous financing, established partnerships and received patents or awards can, on the one hand, signal a wider access to financial resource and more opportunities, and, on the one hand, a higher level of reputation and trustworthiness of the entrepreneurial team. (Ahlers et al., 2014) (Mollick, 2014)

This way of reasoning is in line with Spence (1973), who views these factors as reliable signals of quality because entrepreneurs have to invest either time or money to receive them. For example, while patents are costly to acquire, they protect the market niche. Receiving awards also requires time and distinctive efforts.

Articles in mass media before the campaign’s launch

In addition, Mollick (2013, p12) assumes that backers in reward-based crowdfunding should also look for projects that “prominent organization, journalists, or high status individuals indicate”. In this context recognition can also come from the articles in mass media.

As third-party accreditation may indicate the degree to which business idea goes in line with preferences of the potential customers, they can be considered as further signals of reputation that signal proof of concept and market recognition. (Mollick, 2014)

In the current study previous financing will be presented by a common variable of external financing that will include the presence of any financing alternative, ranging from business angels, bank loan, investments from other companies to earlier share issue.

Presence of any type of third-party recognition (granted awards, patents, established partnerships, previous financing and presence in media) is defined by a dummy variable with value 1. Besides, positive relationships between the third-party recognition signals and the outcome of the campaign are expected.

The quality of team members

The quality of the team members will be described with the help of such explanatory variables as the number of the team members, the master degree in business held by at least one team member, the previous management experience acquired by at least one team member, indication of the board members and indication of non-executive board members.

The characteristics of the entrepreneurial team are considered to be one of the most important factors in the investment decisions made by VCs. In particular, traditional private equity investors strongly believe that the appropriate competence, experience as well as a history of achievements are reliable signals of future success. (Mollick, 2013)

The information about the team members was obtained from both the campaign pages and their team’s private LinkedIn profiles, which are usually attached to the campaign pages.

Number of team members

According to the literature review made by Ahlers et al. (2014), a larger number of team members implies varying competences, a somewhat more confident financial situation and the ability to make employees interested and engaged into the idea. A literature review on VC investment decisions also
indicates at a similar way of thinking (Mollick, 2013). This implies positive relationships between the number of the team members and the status of the campaign.

**Master degree in business, finance or economics**

Educational background, and in particular MBA degree possessed by the board members, according to Ahlers et al. (2014), can be viewed as a signal of high productivity, larger professional network and innovative ability. In this current study, because of the importance of the background of the team members implied in the literature overview made by Mollick (2013), the focus will be on the team members who possess a Master degree in business, finance or economics. Master degree was chosen instead of Ahlers’ MBA because almost none of the reviewed entrepreneurs possessed an MBA while Master degree in the disciplines specified above was possessed by 46% of team members on average. Value 1 will be assigned to the team where at least one team member has a an above stated educational degree. Otherwise, this variable will be defined as 0. This variable is expected to be positively related to the outcome of the campaign.

**Previous experience in management positions**

A study of VC decision-making implies that previous experience in management positions can be seen as an indication of professionalism, ability to handle projects and dealing with questions closely related to startups and business development (Mollick, 2013). This category includes both various management positions as well as the experience in management consulting. A dummy variable with value 1 will be assigned in case at least one of the members in the entrepreneurial team has such experience. This variable is also expected to be positively related to the outcome of the campaign.

**Board members and non-executives**

Indication of board members is also expected to increase the legitimacy of a startup and as a result affect the status of a campaign positively. Board members can introduce entrepreneur to a broader network and compliment with additional knowledge. It also signals that some due diligence was in place. (Ahlers et al., 2014). All companies that use crowdfunding are supposed to have board members because of their legal form (private or public limited liability companies). However, as it appeared, not all companies indicate their board members. Therefore, mentioning of the board members in the campaign can be interpreted as a signal of quality. Additionally, companies may have non-executive board members that give them additional advice. Not all companies have non-executives and, therefore, their indication can also be interpreted as a positive signal of quality (Ahlers et al., 2014). Dummy variables will be used for the presence of board members and the presence of non-executives respectively.

**Control variables**

In line with Ahlers et al. (2014), I will use control variables to account for unobserved differences between the campaigns. In particular, two dummy variables will account for the category of the campaign – digital technology or pure service/product. This is an alternative to the industry fixed effects that Ahlers et al. (2014) uses to control for differences in growth potential of the startups. An assumption that companies coming from the capital cities can be more successful in terms of funding or have higher chances to survive is controlled with a dummy variable for the capital city effect. Because Fundedbyme is a Stockholm-based crowdfunding platform and the majority of investors come from Sweden, Swedish companies can be more popular than these from other countries. This assumption will be controlled for by a country dummy variable. Four dummy variables for the year of the crowdfunding round will account for the differences associated with the legitimacy of Fundedbyme. In particular, the year of equity product’s introduction differs considerably from the fourth year in terms of the number of start-ups and amount of funding goal. Following the logic of Ahlers et al. (2014), the results for control variables will not be interpreted but will only be included to account for the above stated differences between the campaigns.
5. Results and Discussion

The current chapter presents the results of the descriptive statistics and the correlation analysis. The focus of this chapter is the description of the results received by means of the regression analysis.

5.1. Descriptive statistics and correlation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Expected sign</th>
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<td>11</td>
<td>+</td>
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<td>non-executive board members</td>
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<td>0.23</td>
<td>0.42</td>
<td>0</td>
<td>1</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 1: Descriptive statistics

Status of the campaign

According to the summary statistics, 31.7% of all 82 equity campaigns were able to raise at least 80% of their initial funding goal and, therefore, can be considered as closed successfully. From the data outside the one presented in the descriptive statistics table (Table 1), only 18.3% of all 82 companies managed to receive more funds than their initial funding goal. It indicates that more than half of the companies and, in particular 57.5%, from those who succeeded could raise more than 100% of their funding goal.

In total the campaigns raised €8816786.59, while an amount of money raised per average campaign equals to €107 281.7. The total amount of raised funding deviates from the average value by approximately €206 538, with the maximum funding of €1 398 503 and no funding at all.

In terms of the percentage of money raised relatively to the initial funding goal, the highest overfunding was registered at the value 216%. Some campaigns didn’t receive any funding at all. On average, however, campaigns were able to reach only 54% of their initial funding goal.
Funding goal

According to the descriptive statistical analysis, an average equity campaign had a funding goal of €220 425.1 with the deviation of €318 127. The lowest funding goal was €22 999.87, while the highest amount constituted €2 370 005, implying big differences in the amount of money entrepreneurs aim for.

Percentage of equity offered for sale

At Fundedbyme.com companies diluted an average of 12% of company’s shares. However, there are large variations in the percentage of equity offered, ranging from a minimum amount of 1.7% to a maximum amount of 54%.

Price per share

A single share at Fundedbyme.com was sold, on average, for €104, deviating by the value of €258. In overall, share prices varied considerably from the values of a minimum price per share equal to €0.1 to a maximum share price of €1617.

Firm age

Startups that were organizing equity-based campaigns at FundedByMe.com had an average age of 2 years and varied from just newly founded (existing for less than a year) as a minimum age to 11 years as the maximum age.

Because all the above variables in the general variable group are continuous, it would be advantageous to decrease the variation by creating a logarithm of these variables. The age of the firm, however, will not be transformed into a logarithmic value because around 16 companies (that is around 19.5% of all 82 campaigns) have been in business for less than 1 year.

As a result, the logarithm of price per share had an average value of 3.19 with a minimum value of 0.095 and a maximum value of 7.39. The standard deviation was decreased to 1.77. Logarithm of the percentage of equity offered to the public had an average value of 2.44. The standard deviation was also decreased to 0.53. The logarithm of the funding goal has decreased the variation considerably. The values are ranging from 10.04 to 14.68 with a standard deviation of 0.9 and an average value of 11.8.

Business documentation

At Fundedbyme.com only 65% of companies used a classical business plan, 89% provided financial forecast, around 70% wrote a well-developed motivation for valuation and around 27% of companies chose to present investment memorandum instead of a business plan.

Video

79% of campaigns included video in their company presentations.

Third-party recognition variables

Regarding the external recognition, 23% of startups received awards for their ideas, 21% - governmental grants, only 9% had patents. 2% started with seed financing, 7% were supported by business angels and none of the campaigns was previously financed by venture capitalists. Around 3.6% had previously taken bank loans, and some startups (7%) managed to receive financing from other larger companies before the crowdfunding round. Among all the funding options, only 15% of the startups had issued shares before the crowdfunding round. In total, the external financing in any of the forms presented above was received by 24% of companies. Around 34% of the startups had established strategic partnerships at the moment of crowdfunding round and 61% of firms were mentioned in media before the start of the crowdfunding round.
Factors that describe the entrepreneurial team

Statistical description of the information about the teams behind the campaigns showed that an average company had 3-4 team members, with a minimum of 1 and a maximum amount of 16 members. 46% of the team members possessed a Master degree in either economics, finance or business administration and 83% had already acquired experience in business related areas, such as management consulting, business development and management positions.

Board and non-executives

Despite of the fact that companies have to have board members, only in 40% cases startups indicated the names and background of at least one of their board members. Even fewer startups (23%) indicated their non-executive board.

Control variables

38% of campaigns came from Sweden, while the rest of companies were from Finland, Norway, Denmark, other European countries, China and US. The largest number of companies was registered in 2014 and constituted 46% of the total of 82 companies. It was followed by 30% of companies in 2015, 21% of firms in 2012 and only 2% in 2012. Around 53% of all companies in these campaigns were registered in capital cities in the respective countries. Regarding the campaign category, around 53% of ideas and products were connected with utilization of internet potential, development of mobile applications and data organization and management (technology). The rest of the campaigns (29%) were coming from different industries with a common offer of consumer products and offline services.

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Table 2: Pearson’s pairwise correlation
Table 3: VIF test

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<th>Variable</th>
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<td>media articles</td>
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<td>log of % of equity offered</td>
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**Correlation tables: Pearson and VIF**

From the result shown in the Pearson correlation table (Table 2), no strong correlation is observed between variables. Even though there is still some presence of a slightly moderate correlation according to the VIF test (Table 3), in general, it is too low to be considered as the issue in the current regression analysis.
## 5.2. Regression results and Discussion

### Table 4: Logit model results

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<td>2.918***</td>
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**Level of Preparedness**

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**Third-party recognition**

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<td><strong>Governmental grants</strong></td>
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**Entrepreneurial team**

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<td><strong>Business experience</strong></td>
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**Control variables**

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Standard errors in parentheses

***p<0.01, **p<0.05, *p<0.1

Table 4: Logit models
Regressions Model 1 – General variables

In the first regression which was run for the group of general variables, logarithm of the funding goal and logarithm of the share price were found to be statistically significant at a 5% level with the expected negative signs. For the logarithm of the funding goal, the estimation of the marginal effects at the average value showed that with each 1% increase in the funding goal, the probability of success will decrease by 12% keeping all other variables constant.

The result received for the funding goal goes in line with the findings of Mollick (2014) in reward-based crowdfunding, who stated that, when a crowdfunding platform indicates a minimum amount of the funding goal, campaigns usually succeed at a smaller size of a funding goal and fail at a larger one. The negative effect of the funding goal on the probability to close the campaign successfully might indicate that the market of equity-based crowdfunding in general and in particular (the market where Fundedbyme.com operates) is not mature enough to facilitate large amounts of funding. It might require more education for both the entrepreneurs and investors on such topics as what crowdfunding is, its benefits, how to manage a successful project and why people should invest through crowdfunding and etc. At a first sight, the received results for the effect of the funding goal on the probability of success might be interpreted as similar for both reward- and equity-based crowdfunding and by this indicate at the immature state of the market of crowdfunding as a whole. The lack of professional investment knowledge and skills from the side of amateur crowd investors might limit amount of money each potential investor is ready to commit to a specific project. This, in its turn, will support the result for the negative relationships between the funding goal and the probability to succeed. In addition, larger amounts of the funding goal might also indicate at the lack of cooperation between the studied crowdfunding platforms and larger institutions or professional business angels and venture capitalists.

Such cooperation, in particular, could facilitate co-financing opportunity, a smaller knowledge gap and a more mature market of crowdfunding. From this perspective, as the market of crowdfunding will continue to develop and mature, one might expect the shift of the received result towards a lower negative effect of the funding goal on the probability to succeed. On the other hand, even though at the current stage the two types of crowdfunding – rewards and equity - might be seen as somewhat similar with respect to the effect of the funding goal, one should not overlook the possible differences. First of all, Mollick’s study was conducted in US where the entrepreneurial infrastructure is much more developed and where the investments, even on an amateur level, might be made in higher volumes than in Sweden. Therefore, even though the relations between variables might have the same direction, the extent of such relations does not have to be comparable. Additionally, the studies were made based on different crowdfunding platforms. In particular, Kickstarter was the first crowdfunding platform that was acknowledged worldwide and could therefore acquire more support for facilitating larger amounts of money rather than FundedByMe.com. Secondly, the reward- and equity-based crowdfunding have substantial differences in their structure what might imply different explanations of the negative effect of the funding goal on the campaign’s outcome. In particular, the funding goal in reward-based crowdfunding might depend on the short term goals, on the level of quality and the available number of tangible and intangible rewards that are offered to the crowd. In equity-based crowdfunding, firms might search funds for more long-term development and motivate it by the projections for the future. Taking this into account, it can be harder for crowd investors to estimate how well-motivated the funding goal is. It may, in its turn, evoke some level of mistrust and scepticism what might imply negative relationships between the higher funding goal and the probability to raise fund successfully. To conclude, in terms of funding goal, the received results imply some similarity between the equity- and reward-based crowdfunding if to compare this study to the study conducted by Mollick (2014). Nevertheless, this similarity has to be explained with caution due to the differences in the studied countries, crowdfunding platforms and types of crowdfunding.

As mentioned above, the received results showed that the share price has also a negative effect on the probability to succeed in the crowdfunding round. A 1%-increase in the share price will lead to an approximately 6% decrease in the probability of closing the campaign successfully.
The received results correspond to the expectations about the negative effect of a higher share price on the probability of success what, in its turn, goes along with the hypothesis of Ahlers (2014) about the negative relations between the share price and the speed of investment. Because FundedByMe runs only one investment round, in contrast to the crowdfunding platform studied by Ahlers, a lower speed of investment might considerably undermine the probability of closing a crowdfunding round successfully. In this case, a higher share price can be seen as a reason for unsuccessful fundraising. On the other hand, because the results for the share price in the study of Ahlers were not statistically significant, no definite conclusion can be drawn regarding the negative relations between the shares price, speed of investment and the probability to succeed. Taking this into account, the results, received in this thesis, might suggest that crowd investors in the network of FundedByMe are price aware and might compare the share prices between the campaigns presented at the platform simultaneously. Additionally, the received results may give an insight into the company valuation, where the startups with higher valuation tend to be less successful. On the one hand, a high company valuation might be seen as too high for a particular company or circumstances and, therefore, might imply an overvalued investment offer. On the other hand, the current results might also imply that a higher share price might indicate lower future growth rates of the company, what might be perceived as a negative signal. Based on this argument, keeping all other variables constant, crowd investors might see startups with a higher share price as the source of lower future returns on investments.

As expected, the logarithm of the percentage of equity offered was negatively related to the probability of success. In the research made by Ahlers (2014), equity offered was negatively related to both the number of investors and the speed of capital allocation. Nevertheless, in this study the coefficient of the logarithm of equity offered was statistically insignificant. With regard to this matter, no specific conclusion about the effect of the percentage of equity offered and the probability of success can be drawn. On the one hand, it could have the expected negative effect on the probability of success because a high level of ownership dilution might signal pessimism in the company’s future development. At the same time, the extent to which ownership is diluted might depend not on the future of the company but on an underlying ownership structure and the types of shares registered in the company at the moment of fundraising. In this case, a larger number of shares sold in relation to the existing shares might not be an important factor in the investment decision.

In contrast to the initial expectations, the age of the firm was negatively related to the probability of success. At the same time, this coefficient was statistically insignificant. For Ahlers et al. (2014) the age of the firm increased the speed of the investment round. This, in its turn, could contribute to the higher probability of success.

Nevertheless, due to the statistical insignificance of the coefficient no specific conclusion can be drawn from the received results. On the one hand, more experienced and less informationally opaque firms could be more trustworthy and could have higher chances to attract funds. Additionally, such firms could also be closer to their exit (being listed at the stock exchange or bought by another company) – a point where investors are most likely to receive return on their investments. On the other hand, crowd investors could see a lower growth potential in case of older firms and, therefore, allocate their funds to younger firms that could potentially experience a relatively faster development and generate relatively higher returns on investments.

**Regressions Model 2 – Level of Preparedness**

The presence of video in a crowdfunding campaign was negatively related to the probability of closing a crowdfunding round successfully. According to Mollick’s (2013) and Mollick’s (2014) exploratory studies of reward-based campaigns, the video was positively related to the successful outcome of the campaign. Therefore, the results in this study contradict the initial expectations. At the same, the result
for video is statistically insignificant and no specific conclusion can be drawn. If to assume similarity between the reward-based and equity-based crowdfunding, the presence of video should have been seen as a positive signal of quality because it would provide information about the business idea, help to understand the investment offer faster, show a higher level of preparation and efforts invested into the campaign and, finally, present the team behind the campaign. On the other hand, some substantial differences could have influenced the results and contribute to an unexpected sign of the coefficient. In particular, the video for a reward-based campaign and equity-based campaign might have substantial differences, which entrepreneurs could ignore to address. Reward-based crowdfunding is all about the product, what, in its turn, requires the promotional video directed mostly at a final customer. Such video will, however, not work in the context of equity-based crowdfunding because the primary goal of the investors is not to find out information about the product or service but to understand the potential of the business in general and the attractiveness of the investment offer in particular. As the practice shows, not all entrepreneurs have the video with the content relevant for equity-based crowdfunding. Therefore, it might negatively affect the expectations of crowd investors and contribute to a lower probability to succeed in the crowdfunding round. The other factor important to consider in these circumstances is the process of fundraising and the services offered by a crowdfunding platform. In contrast to Kickstarter studied by Mollick (2014), FundedByMe offers entrepreneurs to participate in the pitch evenings where entrepreneurs can present their idea during the classic five-minute pitch and to personally talk to interested investors. In this situation, video might be a neglected signal of quality, which is not taken into account by crowd investors. The pitch evenings might also reveal difference in the presentation skills and the preparation of entrepreneurs in the video and during the pitch evening. If the difference is substantial and is not in advantage of a live performance of the entrepreneurs, video might also be seen as a negative signal of quality. However, the effect of video on the probability of success can not be confirmed due to the statistical insignificance of the regression coefficient.

The result on the presence of the business plan was also unexpected and was negatively related to the probability of success. The presence of the investment memorandum, financial forecast and motivation for valuation had a positive effect on the successful outcome of the campaign just as expected. These results go along with the results from the research within VC’s and business angels’ selection criteria (Chen et al., 2009). Ahlers et al. (2014), in his turn, found that the absence of the documentation or the disclaimers about the documents had a negative impact on the absolute funding amount and the speed of investment. Nevertheless, the coefficients for each business documentation just as for video were statistically insignificant. Due to statistical insignificance of the results, no specific conclusion can be formulated. On the one hand, the presence of the business documentation could indeed have a positive effect on the probability of success because it could allow investors to understand the investment offer better through the investment memorandum, assess the projections and potential for the future development with the help of the financial forecast and understand why the company is valued at a specific amount through the motivation for valuation document. On the other hand, the majority of crowd investors are not trained in finance and investment decisions. Therefore, they might neglect reading the above specified documents due to their financial illiteracy. In this case, they would not see the information provided in these documents as an important quality signal for their investment decision – something that would not be the case in the investment decision made by business angels and venture capitalists.

With regard to the business plan, the insignificance of the received result does not allow to estimate its effect on the probability of success. Nevertheless, according to the logic in venture capital literature, the presence of the business plan should be seen as a positive signal because it provides a deeper information about the firm, helps to better understand the company’s market and assess the level of entrepreneur’s knowledge about its business. In terms of crowdfunding, however, there is still a possibility that the presence of the business plan would be seen differently in comparison to professional investors. The received result might imply that the information provided in the business plan is quite shallow and is not particularly different from the information provided on the crowdfunding page.
information might, in its turn, imply a quite low level of entrepreneur’s knowledge about the market and a low level of preparedness. Crowd investors might also find information in the business plan unclear and could not draw the same conclusions as professional investors.

However, in this thesis none of the variables from the group of preparedness was statistically significant. Just as in case of the firm age and percentage of equity offered in the general variable group, the lack of statistical significance for the level of preparedness might be explained by a relatively small sample and a corresponding lack of sufficient evidence. Due to the statistical insignificance, the conclusions on the effect of these variables on the probability of success can not be drawn based on the results received.

Regressions Model 3 – Third-party accreditation

In the group of the third-party recognition, external awards received by the companies are statistically significant at a 5% level with an expected positive sign. Keeping all other variables constant, indicating an award is expected to increase the probability of success by approximately 3.1%. Other variables in the group were not statistically significant.

While Ahlers et al. (2014) does not really find any statistically significant confirmation for the positive relationships between the external endorsement and the probability of a successful outcome within equity crowdfunding, Mollick (2013) observes strong positive relationships between the third-party accreditation in the form of media quotes and the probability of success in reward-based crowdfunding. The results of the current study suggest that the awards given to startups or their founders can be perceived as the stamps of quality by the crowd investors from the FundedByMe network. In terms of crowdfunding, this result might have a special meaning implying that crowd investors might rely on the opinion of other parties. In some way the received awards could also be interpreted as the signal of market acceptance. On the other hand, it is argued that crowd investors in equity crowdfunding are often driven by the possibility to become a part of the next big thing – a growing and famous company (something that does not often hold for rewards, which is often seen as a pre-sale of products). In this case, the received awards could be an indication of startup’s superiority and could, therefore, be seen by investors as a positive signal of quality.

The rest of the variables in the group of the third-party accreditation were statistically insignificant with the probability of success being positively related to the governmental grants and patents (as expected) and negatively related to external financing, partnerships and presence in media (in contrast to the expectations).

Just as awards, governmental grants could be seen as the market accreditation and a stamp of quality from the specialized institutions. Due to statistical insignificance of the results, government grants could equally be disregarded in the investment decision, especially if to assume that in Sweden the majority of startups have the opportunity to receive such grants. Patents could be seen as a positive signal because it would provide startup with, for example, exclusive rights for the production and would secure a specific market niche for a specified amount of time. This could be seen as a guarantor of lower business risks and higher chances of survival. Additionally, it could show the company as innovative and in some way disruptive. At the same time, patents could be neglected in the investment decision because crowd investors could lack knowledge necessary to access the value of the patent for a particular business. In any case, the results are statistically insignificant and cannot be considered for the conclusion.

External financing, partnerships and media articles could with a high probability be disregarded in the investment decision, be seen as positive signals, or as the study showed, as negative signals due to the statistical insignificance. Related to the results of this study, receiving external financing from business angels and venture capitalists and then turning to crowdfunding could be seen as negative from several perspectives. On the one hand, crowdfunding has quite often been seen as the investment prior to the professional investors, which were supposed to support the company at later stages. In these
circumstances, this signal might imply the entrepreneur’s inability to deliver results after the investment and to turn to crowdfunding as to the last possible funding option. On the other hand, previous financing could influence the market acceptance and signal a specific level of due diligence, knowledge and trust that could be brought forward by professional investors. Media articles could reveal a sensitive information about startups and, therefore, negatively affect the probability to succeed. At the same time, it could also serve as a proof of concept and signal public interest form the market. Existing partnerships usually add value to the business and are seen as a positive signal. Nevertheless, a negative effect of this variable could also take place due to the expectations of the lower growth rate in future. The company that strives to establish partnerships might grow faster and generate more return on the investment.

The effect of other signals than awards from the third-party accreditation group might be insignificant due to a small sample and, therefore, should not be considered for the conclusions of this study.

Regressions Model 4 – Entrepreneurial team

The regression model that defines the characteristics of the team members showed that the indication of the non-executive board members is positively related to the probability of success and is statistically significant at a 10% level. Other variables in this group were statistically insignificant.

Even though, empirically, the variable for non-executive board was not statistically significant in the study of Ahlers et al. (2014), the inclusion of the non-executive board members was supposed to positively influence the probability of success. Just as Ahlers et al. (2014) suggests, on the one hand, it may signal some degree of due diligence done by non-executives who had to invest their limited time. On the other hand, it may suggest a proof of concept. Finally, the presence of non-executives expands the startup’s network as they bring in contacts from their network.

Interesting and unexpected that among insignificant results, the numbers of stuff members, possession of master degree in economics, business or finance and the indication of the board members were negatively related to the probability of success. Even though professional investors would treat these signals as positive, crowdfunding might have some possible explanations for the received contradictions in the results.

Ahlers et al. (2014) found, however, that the number of board members is positively related to the larger number of investors and the speed of investment. In Sweden every company has to have board members, however, not every startup indicated their names in the crowdfunding campaign. The indication of the board members is expected to provide positive effect on the professional investors, however, in case of crowd investors, the indicated name might not make a big difference due to the lack of knowledge about these people and their role in the industry where startups operate. A larger number of stuff members is often seen as a positive signal among venture capitalists as it is supposed to contribute with more competences, indicate the commitment to the company and to some extent financial stability. On the other hand, crowd investors might see a larger number of stuff members in young startups as an inefficient allocation of resources or higher costs associated with that. The possession of master degree could equally well be neglected in the decision making process. Crowd investors might pay more attention to other qualities of the business members rather than their education. Also, their investment decision might be based more on the business idea itself rather than the personal profile of the team members. On the other hand, taking into account that the majority of master degrees are highly theoretical, crowd investors might not see the value in it. Additionally, because the platform is international, master degrees acquired at specific universities might not be important as the level of the university might be unknown to the potential crowd investors. Regarding business experience which was positively related to the successful outcome of the campaign, it, just as in case of professional investors, might signal the ability of entrepreneurs to generate value on the invested resources. At the
same time, the business experience could be received from other industries and be unrelated to the core business. In this case, it could well be neglected by crowd investors. A small sample might again explain the statistical insignificance of many variables in this group. Therefore, the results for the regression coefficients other than the presence of non-executives will not be considered in the conclusions.
6. Conclusions and Implications for future research

The purpose of this study is to provide theoretical and practical insights on the quality signals that increase the probability of a successful funding of an equity-based campaign. The study will serve as a contribution to the previous exploratory research on signaling in crowdinvesting.

6.1. Summary of the results

First of all, based on the results received in the current thesis, it can be concluded that crowd investors in the network of Fundedbyme.com use particular signals to distinguish between the projects. In this matter they seek both financial signals and qualitative signals. While financial signals (funding goal and price per share) can serve more as an indication of the company’s future ability to use the received funds wisely and generate the return on investment, more qualitative signals (received awards and the indication of the non-executive board) may serve as stamps of quality and endorsement from the third-party. In relation to this, the results showed that an increase in the funding goal and the share price decrease the probability to succeed in the equity crowdfunding, while the indication of the received awards and non-executive board members affect the outcome of the campaign positively.

Secondly, the results of the study imply some similarities between the traditional funding, reward-based and equity-based crowdfunding. Despite of many statistically insignificant results, there is seen a common logic in assessing the significant signals of quality and seeing them as indication of startup’s ability to deliver results. At the same time, even the direction of the effect of various quality signals on the probability of success in a crowdfunding campaign might be similar between various forms of financing, the size of these effects can be different. Additionally, the explanations behind the specific results might also differ. These differences can be implied by differences in the investment knowledge possessed by professional investors and crowd investors, by different mechanisms behind reward- and equity-based crowdfunding, by the specific requirements that FundedByMe imposes on the context of the campaign and that distinguishes it from other crowdfunding platforms, by different countries studied and by different dependent variables. Therefore, any explanation of the results similar to the results in the studies of Mollick (2013), Mollick (2014) and Ahlers (2014) have to be treated with caution.

As a third point, this research shows that the presence of a specific selecting mechanism in crowdfunding helps to some extent to decrease the information asymmetry and adverse selection in the market of crowdfunding. The current findings prove that crowdfunding can be seen as a viable alternative to traditional forms of startup financing.

6.2. Limitations

The current study has a number of limitations that challenge the generalization of the empirical results received from the sample.

For the first, the size of the sample used in the current study is relatively small. On the other hand, a large number of statistically insignificant results also depends on a relatively small sample and does not allow receiving a more elaborated picture of quality signaling in equity crowdfunding. While the role of each quality signal is estimated based on the difference between successful and unsuccessful projects, the results cannot be generalized because the success rate of the campaigns is only 31.7%. In these circumstances, the received results might be a point of interest for FundedByMe, but hardly applicable to other platforms.

The quality signaling was studied by taking into account fixed effects. Two of them – industry and country – present a further limitation of this study. In particular, while industry was seen only from the perspective of either non-digital or digital sector, a broader classification of industry may also affect the results. The main reason for this is the fact that some industries, for examples Fintech, might be more
interesting for investors than others. However, at the current stage, if the campaigns would be classified according to their industries, the sample would be not representative.

Additionally, a similar issue arises for the country control variable where the distinction was made only between Sweden and other countries. In reality, the geography might play a more important role and Nordic countries in general might be more successful than other countries. On the other hand, it would also be relevant to distinguish between countries where FundedByMe has and does not have its local representatives. The risk with this though is again a non-representative sample.

The goodness of fit in the logit model is, as a rule, relatively low. Nevertheless, in case of the current study, only a small portion of potential quality signals was included. To assess the quality signaling in equity crowdfunding more accurately, it would be interesting to take into account the effect of other variables mentioned in the Further research section. For the moment, however, the number of observations limits the possible number of explanatory variables. Otherwise, it may lead to inconclusive and contradictory results as Model 5 showed.

In general, the current study cannot be completely comparable to the previous empirical research made by Mollick (2013), Mollick (2014) and Ahlers et al. (2014) because it differs in terms of the type of crowdfunding, the choice of the explanatory variables and the crowdfunding platform. Even though the study provides and supports important insights received from the above mentioned empirical papers, the current results cannot be completely comparable and, therefore, have to be studied further.

6.3. Implications for further research
The research has both theoretical and practical implications for the academic world, for the entrepreneurs and crowdfunding platforms. In particular, the results of this research can serve as a good contribution to the knowledge of FundedByMe.com and its entrepreneurs. The future campaigns may put more weight on planning their funding goal and company valuation and revealing information about the third-party accreditation such as awards and external non-executive board. For the crowdfunding platforms, the significant quality signals received in this study can be considered in their selection process.

For the academic world, the study opens new topics for the future research. On the one hand, it would be interesting to examine more variables on used in the campaigns of FundedByMe.com. For example, it might be the size of the network measured through the social media channels, gender composition of the team members, number, education and experience of the board and non-executive board members. One may study not only the presence of the factors studied above, but also their content. This is, in particular, relevant for the business documentation. It would be also interesting to see whether quality signals differ among industries, types of product, and countries. The current study also suggests studying the motivation behind the decision-making process of crowd investors further, both from quantitative and qualitative perspectives. Mainly, which quality signals appear to be more important and why.

While this thesis focused on the firm’s characteristics before the crowdfunding campaign, one may study how various activities (updates, comments, marketing and etc.) during the crowdfunding round contribute to the probability of success.
List of references


