THE DETERMINING FACTORS OF CROWDFUNDING SUCCESS

Master Thesis

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Enschede, August 2018

UNIVERSITY OF TWENTE.

Acknowledgements

Hereby I present my master thesis. This thesis is the final assignment of the Master Business Administration, Financial Management at the University of Twente. I would like to thank some people who have helped me during the period I was working on this thesis. First of all, I would like to express special gratitude to my first supervisor, dr. Xiaohong Huang. She has guided me through the process of the master thesis, and provided me with feedbacks, comments, and guidance, which have been highly valuable for me. Next, I would like to express my appreciation for prof. dr. Rezaul Kabir as my second supervisor for his feedbacks. Furthermore, I would like to thank my family, and friends for their support, and encouragement during the period I was working on this thesis.

Annemiek van der Zee,
Enschede, August 2018

Abstract

With crowdfunding, entrepreneurs can attract external finance for their ventures. Crowdfunding is an internet-based method of financing, in which many small contributions of the crowd are gathered over a fixed time period. There are four types of crowdfunding, which are loan-, equity-, reward-, and donation-based crowdfunding. This study seeks to find the determining factors of crowdfunding success at a Dutch crowdfunding platform that offers the four different crowdfunding types. As most crowdfunding platforms use the all-or-nothing approach, which has the consequence that the founder will not receive the provided funds if the funding target it not reached, it is important to founders that the funding goal of their crowdfunding project is reached or exceeded. When the drivers of successful crowdfunding projects are known, founders can use this knowledge for future crowdfunding projects. Based on a sample of 225 projects, the influence of project-specific, funding-period specific, founder-specific, and loan-based crowdfunding-specific factors are tested. The methods used to test the influence of these factors are logistic regression and ordinary least squares regression. One factor, updates on the project, which is a funding-period specific factor, is found to drive successful fundraising at this platform. The length of the project description is found to drive successful fundraising for reward-based crowdfunding projects. Furthermore, the crowdfunding experience of the founder is important for the funding ratio of the crowdfunding project, but not for whether the crowdfunding project is successful or not. The other factors in this study are not found to drive successful fundraising.

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1. Introduction

Entrepreneurs often face difficulties in attracting external finance. Many ventures are unable to attract external capital due to failed efforts to convince investors, a lack of concrete specification what the capital is needed for, or the lack of enough large sums from investors in general (Lambert & Schwienbacher, 2010). Main reasons for the difficulties in raising external funding are a lack of internal cash flows and securities, asymmetric information and agency problems (Hall & Lerner, 2010; Block, et al., 2017). Crowdfunding is an emerging alternative way for entrepreneurs to raise funds. As new ventures often face difficulties in attracting external finance at their initial stage, crowdfunding appears to be a useful alternative form of financing the venture (Belleflamme, et al., 2010). Crowdfunding is an internet-based method of fundraising. In crowdfunding, the focus is gathering many small contributions from the crowd, referred to as backers in this report, over a fixed time period. Crowdfunding allows entrepreneurs, hereafter referred to as founders, to fund their concept or idea by attracting contributions from a relatively large number of investors, without the intervention of financial intermediaries. This often happens in return for future profits or equity. There are four different types of crowdfunding, which are loan-based crowdfunding, equity-based crowdfunding, reward-based crowdfunding, and donation-based crowdfunding, and they all have different rewards for backers. Moreover, the contributions of these different types have different forms. The chance of achieving a fundraising goal depends upon a successful outreach campaign, in which a larger crowd translates into more money raised (Wheat, et al., 2013; Mollick, 2014; Kuppuswamy & Bayus, 2015). Where in 2015 there were 42 AFM-registered (Authority Financial Markets) crowdfunding platforms in the Netherlands which together have funded 98 million euros, this number has increased to 49 AFM-registered platforms which funded 134.5 million euros in 2016 (Van der Beek & Van der Linden, 2017). In 2012, 14 million euros were financed with crowdfunding. In 2017, this amount added up to 223 million euros (Crowdfundingcijfers, 2018).

Crowdfunding platforms allow the founder to request funding for their projects or for the realization of their concepts from a large group of internet users which are active on the online platform (Mollick, 2014). Crowdfunding platforms are used to advertise the projects online of anybody who wants to launch a new project and receive funding. In order to describe the ideas of the founder, the platform allows the founder to post a project description, communicate with backers and explain the finance form of the project. By exhibiting

information of the founder's concept or idea, platforms can reduce information asymmetry for backers. Due to their simplicity, crowdfunding platforms have become very popular. Over the past years, thousands of projects have been successfully completed on crowdfunding platforms (Bradley & Luong, 2014). Most platforms provide two key ways to pitch a project: a description of the project and a video to help the investors visualize the concept and to introduce the founders (Wheat, et al., 2013).

There have been numerous studies to the concept crowdfunding, as this is an emerging way of attracting external finance. Moreover, several studies have studied the success factors of crowdfunding, and how different project characteristics have to be specified in order to attain successful funding for the crowdfunding campaign. As many platforms use the all-or-nothing approach, it is important for founders to reach or exceed their funding target. If the founder does not reach the funding target, the founder will not receive any of the funds. Therefore, the crowdfunding campaign has to be well organized. This research aims to provide insights in the factors that influence the funding success of a crowdfunding campaign. When it is clear which factors influence the success of a crowdfunding campaign, founders can use this when organizing future campaigns in order to make their campaigns successful.

Some factors have been found to successfully influence the funding success of a crowdfunding campaign, and other factors negatively influence the funding success of a crowdfunding campaign. However, different studies have combined different factors. This research aims to get insights in which factors influence the success of a crowdfunding campaign. Therefore, the research question is:

"Which factors influence the success of a crowdfunding campaign?"

This research does not focus on the later market performance, but at the way in which the founder, and the platform organize the crowdfunding campaign. As this research aims to get insights in which factors determine the funding success, it is of interest for future project founders that organize crowdfunding campaigns.

This research makes a distinction in the determining factors in project-specific factors, funding period-specific factors, founder-specific factors, and loan-based crowdfunding-specific factors. This research extends the existing literature by combining these factors in one study, which allows for a comprehensive view on the successful funding of crowdfunding campaigns, and the factors influencing them. Moreover, this research will be carried out at a platform which offers the four crowdfunding types, and therefore it is possible to examine whether different factors influence the success of the different crowdfunding types. As crowdfunding keeps

gaining in popularity, it is important to founders to know which factors have an influence on the funding success of the project. When the determining factors of funding success are known, founders and platforms know how to successfully organize a crowdfunding campaign.

The research is carried out at a Dutch crowdfunding platform. This Dutch platform is founded in 2012 and has raised over 20 million euros with crowdfunding so far. This platform is chosen for a number of reasons. First, this platform is chosen because this platform offers projects with all the four types of crowdfunding, which allows to make a comparison between the different types of crowdfunding. Second, this platform is chosen because of the data availability, as this platform offers data publicly for an extensive research. Third, as the data is publicly available, this allows for comparability, and fourth, the platform only offers crowdfunding projects from entrepreneurs, and not for private purposes.

To the best of my knowledge, this research has not been carried out before in the Netherlands at a Dutch crowdfunding platform. This research contributes a differentiation of the success factors of crowdfunding projects from a Dutch crowdfunding platform among the four types of crowdfunding to the exiting literature.

This paper proceeds as follows: chapter 2 presents the relevant literature to this study, chapter 3 presents the institutional background in the Netherlands, chapter 4 presents the research design, chapter 5 presents the results, chapter 6 presents the conclusions, and chapter 7 presents the discussion, and limitations.

2. Literature review

This chapter introduces the concept crowdfunding, and explains the different types of crowdfunding. Then, it introduces the crowdfunding platform is, and the role of the platform in crowdfunding. Next, important theories used in crowdfunding are explained. Hereafter, factors that have been found to determine funding success are described, and the hypothesis development is stated.

2.1 Crowdfunding

Crowdfunding stems from the concept crowdsourcing, which is defined as the outsourcing of specific tasks of a profit oriented firm which are essential for the making or sale of a product to the crowd in the form of an open call over the internet (Kleemann, et al., 2008; Bayus, 2013). Crowdfunding is the "process of financing ideas, ventures, and projects by gathering funds from a large network of people" (Leach & Melicher, 2018, p. 477). The difference between crowdsourcing and crowdfunding is that in crowdsourcing, labour resources are pooled and in crowdfunding, capital is pooled (Harms, 2007). The basic idea of crowdfunding is that a founder wants to raise external capital from a large audience, where each individual provides a small amount of money. The founder presents the concept or idea to the public, mostly via a platform, and backers of the project can participate in the crowdfunding campaign by providing funds, often in return for a reward. This is in contrast to raising external finance through financial intermediaries or from a small group of sophisticated investors (Belleflamme, et al., 2014). A monetary contribution is the desired input for a crowdfund project. In contrast to traditional investments, crowdfunding is fundamentally open to everyone (Kraus, et al., 2013). In crowdfunding, the founders launch or want to launch a project of any kind, which can range from one-time events to the starting of new ventures (Cordova, et al., 2015; Koch & Siering, 2015). Therefore, the funding goals can range greatly in amount. The goal of the founder and the goal of the potential backers are both of great importance, but are also both subject to much variation (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). The focus of crowdfunding can vary in goals and in magnitude. The donations can range from 1 euro to several millions of euros (Ahlers, et al., 2015). It involves providing financing, arranging the whole process, mobilizing the crowd and generating ideas (Valančienė & Jegelevičiūtė, 2014). Founders can have different goals for their projects, as funding does not need to be the only goal of a crowdfunding project. Other goals can be to demonstrate the demand for a proposed

product or marketing purposes (Mollick, The dynamics of crowdfunding: An exploratory study, 2014).

Crowdfunding can be seen as a tool which helps collecting funds from small investors or ordinary people in return for tangible of intangible benefits (Beugré & Das, 2013). Each individual provides a small amount of financing, in contrast to large contributions of a small group of investors (Belleflamme, et al., 2014). As small amounts of money from a large number of people can sum op fast, crowdfunding platforms have passed through enormous success (Stemler, 2013). Crowdfunding backers can be seen as the earliest possible adopters. They may be even more valuable than early adopting consumers (Stanko & Henard, 2017). Backers presumably have a predictive power when looking at the new product assessing the market (Deffains-Crapsky & Sudolska, 2014). The goals of backers also have a wide range. A few examples of the goals of backers are the return on their investment, the ownership of the offered reward, the ownership of equity stakes or no return at all, but knowing that the investment helps with for example humanitarian projects (Mollick, The dynamics of crowdfunding: An exploratory study, 2014).

Non-profit crowdfunding initiatives tend to be significantly more successful than other organizational forms when trying to reach the fundraising target (Belleflamme, et al., 2013). Next to that, projects that show linguistic styles that make the campaigns better understandable and relatable to the crowd have a positive effect on the success of social campaigns (Parhankangas & Renko, 2017). Furthermore, backers want to help others if they believe that their contribution really matters (Kuppuswamy & Bayus, 2015). Moreover, the crowdfunding support increases as a project is near its target goal and the support decreases once the target goal is fully reached (Kuppuswamy & Bayus, 2017).

The key elements of crowdfunding are the technology, capital funding, and the power of the crowd. These elements altogether enable a significant financial outcome (Beaulieu, et al., 2015). The three main stakeholders of a crowdfunding project are the founder, the backers and the platform the founder has chosen (Beugré & Das, 2013). In principle, crowdfunding is a concept in which two groups secure the money and support they need, which are the founders who try to turn their ideas into viable companies and small companies which try to keep their business alive or growing (Stemler, 2013). Strengths of crowdfunding campaigns are the change to test the marketability, the chance to test the accessibility of capital, the change to create benefits for communities, and the right to make company decisions stay in the hands of the founder. Weaknesses of crowdfunding involve administrative and accounting challenges,

the chance that ideas can be stolen, and the weakening investor protection (Valanciene & Jegeleviciute, 2013).

Founders have to go through five stages to launch a crowdfunding campaign (Hui, Greenberg, & Gerber, 2014). First, the founder prepares the campaign material, which involves the creation of a project profile. Typically, the project profile includes a title, a description of planned use of funds, a video, a funding goal, the duration of the campaign and descriptions of the rewards. This has to be presented in a preformatted page which is drafted by the chosen platform. Second, the founder tests the material of the campaign. Third, the project is publicized, which involves reaching out to potential backers. During this stage, the project is open for backers to provide funds to the founder. Fourth, once the campaign is over, the founder has to continue the proposed project. This involves producing and delivering the promised rewards. These rewards range from getting the new crowdfunded project, to a simple thank-you note, to the repayment of the loan with interest. This will be explained in section 2.1.3, where the different crowdfunding types are explained.

2.1.1 The founder, motivations and deterrents

Crowdfunding is driven by the unfulfilled need for capital of founders (Beaulieu, et al., 2015). Founders can have different motivations to participate in crowdfunding. Founders have a number of main motivations to engage in crowdfunding. The first is to raise funds. Crowdfunding provides an easy, organized, and efficient way to collect financial support from a large amount of people in a distributed network. By using social media and online payment systems, founders are able to solicit and market resources safely through crowdfunding platforms. Second, crowdfunding campaigns expands the awareness of the work of the founder. Crowdfunding platforms also serve as a marketing tool, by which founders can bring their ideas to the public. Third, with help of crowdfunding, founders can form connections (Gerber, et al., 2012). Founders connect with the backers which through a long-term interaction that goes beyond a single financial transaction. Fourth, founders use crowdfunding to gain approval, as the number of backers and the amount of money raised can serve as a quantification of the value of a project. Fifth, founders are motivated to engage in crowdfunding to maintain control over their work, instead of giving or sharing the control with an investor. Sixth and last, crowdfunding forces founders to learn new fundraising skills, as founders have to gain experience in fields outside their professional expertise (Gerber & Hui, 2013). Sixth, founders are motivated to participate in crowdfunding in order to obtain feedback (Lambert & Schwienbacher, 2010).

There are also deterrents for founders to participate in crowdfunding. The first deterrent is the inability of the founder to attract supporters. Many founders choose not to engage in crowdfunding, as they believe that existing crowdfunding platforms would not attract a sufficient number of backers to fund. The second deterrent is the fear of the founder for public failure and exposure. Founders fear ruining chances of future investments, their ideas being stolen and personal embarrassment. The third and last deterrent is the time and resource commitment that is bound to crowdfunding (Gerber & Hui, 2013).

2.1.2 The backers, motivations and deterrents

Backers also have different main motivations to participate in crowdfunding. The first main motivation for backers to engage in crowdfunding is to collect rewards. This can be in the form of external rewards, like an acknowledgement, an experience or a tangible object. The consumer experience, buying and receiving something, shares some similarities with crowdfunding. However, backers have to wait a certain time before receiving the reward. The second motivation is to help others. This way backers are motivated to give, which is in contrast to collecting. This behaviour is connected to philanthropic behaviour. The third motivation for backers is to be part of a community of like-minded people. The fourth and last main motivation for backers to engage in crowdfunding is to support a cause. Backers don't necessarily solely support the founder, but rather the cause of the project.

Next to this, backers also have a deterrent to participate in crowdfunding. Backers have one main deterrent to participate in crowdfunding, which is the distrust of the founder's use of the funds. Some platforms allow the founder to keep the money they raise, even when the funding goal is not reached. This will be explained later. However, some backers worry that the money will not be used effectively, or the inability of the founder to use the funds wisely (Gerber & Hui, 2013).

2.1.3 Geographic area

As crowdfunding projects are posted on online platforms, the founders can reach a lot of individuals, in a large geographic area. Crowdfunding has the potential to tone down the distance effects, which are found in traditional fundraising efforts (Agrawal, et al., 2011). The geographic distance between the founder and the backer is not strongly related to investment patterns over time. This finding is in contrast to existing literature, which emphasizes that spatial proximity is important in early-stage financing. An online platform seems to remove

most of the distance-related frictions, such as providing input, monitoring progress, and gathering information (Agrawal, et al., 2015).

There is a strong geographic component to the nature of projects with founders who propose projects that reflect the cultural products of their geographic area. An example of this is country music in Nashville, Tennessee (Mollick, 2014). Distance does play a role. When there is a single round of financing, local investors invest relatively early. Next to this, local investors appear less responsive to the decisions of other investors. The geography effect is driven by investors who likely have a personal connection with the founder. An online platform does not eliminate social-related frictions (Agrawal, et al., 2011).

2.2 Crowdfunding types

Crowdfunding can be divided in four categories, which are equity-based crowdfunding, loan-based crowdfunding, reward-based crowdfunding and donation-based crowdfunding (Damus, 2014; Frydrych, et al., 2014; Ahlers, et al,. 2015; Vassallo, 2016; Block, et al., 2017). Beleflamme, et al., (2013) have found that the type of project has an effect on the success rate. Generally, backers receive rewards in different ways: either they receive material compensation, which often is in the form of monetary rewards, or immaterial compensation, which is in the form of social acknowledgement (Kazai, 2011). The main differences in these models exist in the rewards for the supporters and in their involvement (Damus, 2014). However, Mollick (2014) argues that the main difference lies in the goals of the founders and backers. All four models have the goal to obtain capital from the crowd in exchange for tangible or intangible returns (Frydrych, et al., 2014). In the equity-based model and in the reward-based model, the backers enjoy additional utility over 'regular' consumers (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). In equity-based and loan-based crowdfunding, social and psychological processes are significantly more integrated than observed in traditional venture capital (Mollick, The dynamics of crowdfunding: An exploratory study, 2014).

Reward-based, loan-based, and equity-based crowdfunding differ from donation-based crowdfunding, as these forms all have a tangible or monetary exchange. Therefore, contractual relationships are created in these three forms of crowdfunding (Frydrych, et al., 2014). Donation-based crowdfunding is different from the other forms, as backers don't usually receive a tangible exchange for their investment. This model is therefore more aligned with models of social entrepreneurship (Lehner, 2013).

2.2.1 Loan-based crowdfunding

As the name suggests, loan-based crowdfunding is based on issuing a loan. Backers provide funds through small loans (Allison, et al., 2015). Loan-based crowdfunding creates a debtor and lender relationship between the founder and the backers (Frydrych, et al., 2014). Peer-to-peer or person-to-person (P2P) lending is an example of loan-based crowdfunding (Damus, 2014). The peer-to-peer lending model is based on the social lending between people without the encounter of a financial or retail intermediary (Vassallo, 2016). Backers will only want to invest in a project which is likely to return their investment. Most peer-to-peer lending is for profit oriented firms or projects in which the backers expect a rate of return for the use of their money (Young, 2013). However, loan-based crowdfunding is broader than peer-to-peer lending, as it also includes peer-to-business lending (Beck & Casu, 2016). In this case, there is a contract between a private person and a company.

In loan-based crowdfunding, backers receive fixed periodic income and expect repayment of the principal (Ahlers, et al.,2015). Loan-based crowdfunding offers funds to an entrepreneur that wants money, but doesn't want other shareholders (Rossi M. , 2014). In this type of crowdfunding, backers lend their money to the founder with the expectation that they will receive repayment. It depends on the platform whether the money is repaid with interest or not (Meyskens & Bird, 2015). Motivations for this type of crowdfunding are mainly financial, as in most projects the loans are repaid with interest. This type of crowdfunding raises on average the largest raised amount (Block et al., 2017). Backers participating in loan-based crowdfunding projects become debt holders. On average they prefer predictable and smooth earnings which will decrease uncertainty about a loan's contractual repayments (Wittenberg-Moerman, 2008).

2.2.2 Equity-based crowdfunding

In equity crowdfunding, the backers provide the founders with funding in exchange for shares in the company (Ahlers, et al., 2015; Vassallo, 2016). Backers can invest their money in return for a share of the profits or to purchase equity securities (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). Equity crowdfunding is a model in which the backers receive an interest in the form of equity or equity-like arrangements (Bradford, 2012). Unlike the donation-based projects and the reward-based projects, this type of crowdfunding allows the backers to buy a piece of the business (Young, 2013). Equity-based crowdfunding projects tend to raise larger amounts of capital than the other crowdfund models. Equity-based crowdfunding creates an entrepreneur-investor relationship between the founder and the

backers (Frydrych, et al., 2014). Equity-based crowdfunding is mostly used to finance start-ups. A common feature of equity-based crowdfunding is profit sharing (Damus, 2014).

In general, founders favour the profit-sharing mechanism for large capital amounts. The benefits are higher when the capital requirements are large (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). The central difference between traditional capital-raising and equity crowdfunding is the funding process itself. Equity crowdfunding differs from reward-based and donation-based crowdfunding in numerous aspects (Vulkan et ak., 2016). Non-financial motives do not play a significant role in the investment decisions of the backers (Cholakova & Clarysse, 2015). Equity crowdfunding projects have on average a higher amount pledged, a higher campaign goal, a (pre-money) valuation of the project and the goal of the backers to obtain financial return on their investment. The agency theory is of importance in this type of crowdfunding, which means that parties in an investment partnership, in this case the founder and the backers, have misaligned goals and interests (Jensen & Meckling, 1976). This may cause agency problems and conflicts between the founder and backers. It is therefore important that founders clearly indicate what their goals are.

2.2.3 Reward-based crowdfunding

Reward-based crowdfunding offers a non-financial benefit to funders in exchange for their investment (Ahlers, et al., 2015). It offers rewards to funders in the form of material or immaterial things or activities (Damus, 2014; Kraus, et al., 2013). The most typical reward for this crowdfund type is the delivery of a product or service, which is why this crowdfund type is somehow similar to financial bootstrapping. Another possibility is that backers receive so called “ego-boosting” rewards, like the offering of symbolic objects that display support for the project or invitations in social events (Block, et al., 2017). This model is used by many founders to pre-sell their product as a reward for a pre-determined contribution amount (Vassallo, 2016). Backers can benefit from pre-ordering, as they receive the financed product or service before publication or market performance, or even only at the price of a plug or acknowledgement (Belleflamme, et al., 2013; Kraus, et al., 2013). Pre-financing for production is used in reward-based crowdfunding for a demand-test (Rossi M. , 2014). When the founder uses the pre-ordering scheme and wants to launch the production, the amount funded by the backers must cover the required amount of capital. Once the product is on the market, new consumers will pay a different price than the backers from the crowdfund product, meaning that founders are able to price discriminate between backers and ‘usual’ consumers (Belleflamme, et al., 2014).

Based on earlier research, reward-based crowdfunding projects tend to be more successful than other types of crowdfunding (Belleflamme, et al., 2013).

In reward-based crowdfunding, rewards are considered motivational triggers. Therefore it is critical for founders to carefully design the reward scheme of their crowdfunding campaign (Thürridl & Kamleitner, 2016). Generally, the size of the reward is tied to the pledge level. When a backer chooses to pledge more to the crowdfunding campaign, the reward gets bigger as well. For example, in film projects, a small pledge of the backer can result in a "thank you" note, while larger pledges may result in a rewards such as a copy of the DVD when the film is completed (Chen, et al., 2016).

2.2.4 Donation-based crowdfunding

Donation-based crowdfunding refers to the type of crowdfunding in which a large, diverse crowd of people make many (small) donations (Damus, 2014). In donation-based crowdfunding, the backers are giving money to the founder without expecting a monetary reward in return. Backers finance the crowdfund project without sharing the profits (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). In contrary to a material reward, backers in the donation-based crowdfunding model expect a social reward in return (Kraus, et al., 2013). Another motive for backers in donation-based crowdfunding is that the backers expect to become future consumers. By donating money, the founder is able to carry out the project (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). Backers are often motivated by charitable giving and social image (Block, et al., 2017). Therefore, intrinsic motivation is most associated with donation-based crowdfunding (Tomczak & Brem, 2013). This suggests that the backers care about social reputation and enjoy private benefits from the success of the initiative (Lambert & Schwienbacher, 2010). Donation-based projects commonly have a social or sustainable funding goal (Lehner, 2013). Social and sustainable incentives are essential when making donation-based crowdfunding successful (Sakamoto & Nakajima, 2013). Often donation-based crowdfunding projects have non-profit associations and these are therefore more likely to reach their funding goal in comparison with other organizational forms (Belleflamme, et al., 2010).

There are motivational similarities between crowdfunding projects with the pro-social behaviour theory and the warm-glow giving theory. Pro-social behaviour explains the behaviour of people who want to help others in order to benefit the society and to contribute to the public good (Younkin & Kashkooli, 2013). The warm-glow giving theory states that backers will not only gain utility from increasing the total supply, but also from the act of giving

(Andreoni, 1989). In order to attract donations more easily from the backers, founders have to limit monetary incentives (Belleflamme, et al., 2010). Donation-based crowdfunding should not be confused with sponsoring, as with sponsoring a founder has to advertise or represent the product or service of the investing backers. (Tomczak & Brem, 2013). In the donation-based crowdfunding projects, information asymmetries about the ability of the founder to generate future cash flows are less important than for equity-based or loan-based projects (Ahlers, et al., 2015).

Donation-based crowdfunding has mainly been used to fund charitable causes and to improve the availability of public resources (Leach & Melicher, 2018). In contrast to the other three models, donation-based crowdfunding is well-aligned with models of social entrepreneurship (Lehner, 2013).

2.3 Crowdfunding platforms

A crowdfunding platform has a website at which crowdfunding projects from founders are posted for backers. Crowdfunding platforms bring businesses and backers directly together (Magrini, 2017). The platforms allows founders to present their ideas to the wide public and ask for funding (Valančienė & Jegelevičiūtė, 2014). Crowdfunding platforms share a similar funding process, no matter what type of crowdfunding is used. It starts with the request for funding by the founder and declaring what the money is for. Next to that, the founder indicates what is offered in exchange, if that is the case. The crowdfunding website provides the platform for the exchange of funds (Ahlers, et al., 2015). When a project is successfully funded, the founders are usually committed to pay a fee to the platform (Valančienė & Jegelevičiūtė, 2014). Crowdfunding platforms create three benefits to conquer distance-related frictions: the platforms provide an easier search for the backers, less need for monitoring and they provide investment information from the founder (Agrawal, et al., 2015). Crowdfunding platforms provide the means for the investment transactions to take place (Ahlers, et al., 2015). Crowdfunding platforms help the founders satisfy their financial needs and allow the founders to test new products as well as run marketing campaigns (Lambert & Schwienbacher 2010; Mollick, 2013). Therfore, crowdfunding is inspired by social networking, where consumers participate in online communities where they share information and provide suggestions for the initiatieve of the founder (Ordanini, et al., 2011). In internet-enabled markets, such as the crowdfunding market, online reputation and brand communities attracts investors and therewith supports entrepreneurial activities (Reuber & Fischer, 2011).

There are numerous aspects in which projects can differ from each other. These are general aspects of funding projects. Crowdfunding can use a “keep what is raised” or an “all or nothing” strategy (Leach & Melicher, 2018; Maguire, 2013; Valančienė & Jegelevičiūtė, 2014; Cumming, et al., 2014). Usually, crowdfunding platforms work according to the “all or nothing” strategy. This means that founders only receive the offered money when the target sum is fully reached (Damus, 2014). The “keep what is raised” strategy allows the founder to keep all funds raised, even if the target is not reached. Next to that, crowdfund platforms can work with a tipping point. This means that the founder or platform owner can set a point at which the project ‘tips’: at this point, there are enough funds raised to deliver on the project and provide backers with rewards. Until this point, the strategy is all or nothing. Beyond this point, the strategy changes to keep it all (Maguire, 2013).

Traditionally, business processes are offline. However, crowdfunding takes this to an online environment, enabling founders to optimize their business development with help from backers (Frydrych, et al., 2014). One of the key elements of a successful project of crowdfunding is to select the right website and thus the right platform (Rossi M. , 2014). Other key elements are to clarify aims, targets and timeline, use proper communication, and to choose the right rewards.

As crowdfunding platforms can disclose a lot of information about the crowdfunding campaigns to backers, they can (partially) reduce the information asymmetry between backers and founders. Platforms play an important role in reducing the information asymmetries mentioned before. The platforms make demands for the founders and their project descriptions to take away most of these risks and continually adjust their regulations and monitoring (Agrawal, et al., 2014). By reducing the information asymmetry between founders and backers, it is expected that the crowdfunding campaigns receive more funds, and thus become more successful. It is in the platform’s interest that the crowdfunding campaigns are successful, as more successful crowdfunding campaigns may attract more founders.

2.4 Theories in crowdfunding

Existing theories have been used to explain success factors in crowdfunding. The most used theories are the information asymmetry theory (Agrawal, et al., 2011; Mollick, 2014; Colombo, et al., 2015; Belleflamme et al., 2014; Ahlers, et al., 2015) and the signaling theory (Mollick, 2014; Ahlers, et al., 2015; Dorfleitner, et al., 2016; Bi, et al., 2017). Both theories, and their relation to crowdfunding will now be explained.

2.4.1 Information asymmetry

Information asymmetry arises in financing entrepreneurial initiatives when there are different parties engaged in a deal, whereby these different parties do not have access to the same level of information (Myers & Majluf, 1984). When one party is not completely aware of the behavioural intentions and the quality of the other party, information asymmetries matter (Vismara, 2016). Founders and backers face different difficulties because of this. Uncertainty and information asymmetries can play a role in the design of crowdfunding projects. When backers are uncertain about the quality of a founder and his project due to information asymmetries, it is likely that backers withhold their funds. Therefore, founders should make efforts to reduce the information asymmetries between them and the backers.

Most of the time, backers of crowdfunding projects are not specialists and thus have access to less information about the industry the founder operates in, the past performance of the founder and many other pieces of information which is value relevant. Often founders have more information than backers about their project (Agrawal, et al., 2014). Due to the number of backers and their lack of professionalism, the founder might be even more reluctant to disclose information to them. The founder also faces the risk that his or her idea will be stolen, since the founder has to disclose a lot of and sensible information to the potential backers (Schwienbacher & Larralde, 2010).

The asymmetry problem includes among others the ability of the founder to deliver the product. The participation of the backers in the financing of the founder's project serves as a mechanism to attract the most interested backers (Belleflamme, et al., 2014).

Backers face three primary risks: founder incompetence, fraud and project risk (Agrawal, et al., 2014). The first is that founders don't always live up to their promises. For example, founders don't always have the experience to deal with suppliers and logistics. Moreover, when a project is far over-funded, founders often deliver late, as they are unable to adjust to demand. Furthermore, it is relatively easy for founders to use false information to promote their projects to make them look more positive. Platform owners try to prevent this, but don't always succeed. Next to that, early-stage projects come with a high level of risk, which means a great chance of failure (Agrawal, et al., 2014).

If founders can reduce the information asymmetry for the backers, this is expected to have a positive effect on the crowdfunding campaign. When information asymmetry is reduced and backers are more certain about the founder and the idea or concept, this will increase the willingness of backers to participate in the crowdfunding campaign of the founder. Potential

signals of quality are essential in the selection process, given the commonly devious and unreliable data that surrounds new firms (Michael, 1974). It is important for founders to be able to signal quality to potential backers of their projects, as this is a critical factor in gaining finance (Vismara, 2016).

Platforms play a role in reducing the information asymmetry for potential backers, as they disclose a lot of information about the crowdfunding campaigns and the founder. Next to that, existing platforms reduce information asymmetry as they act as trusted intermediaries (Belleflamme & Lambert, 2014). This way, it is likely that backers are more willing to participate in the crowdfunding campaign, and the crowdfunding campaign become more successful, as part of the uncertainty caused by information asymmetries has been taken away by the platform. It is expected that crowdfunding campaigns will become more successful, when information asymmetry is reduced.

Next to the information asymmetries mentioned above, the four crowdfunding types have additional forms of information asymmetry, which will now be explained.

2.4.1.1 Information asymmetry in loan-based crowdfunding

In loan-based crowdfunding, there are additional information asymmetries. As mentioned before, backers for this type of crowdfunding have primarily financial motivations. Therefore a few additional aspects are important to them, which mainly have to do with the return on their investment.

The information asymmetry exists that the backers don't know the repayment behaviour of the founder or previous performance of the founder. By disclosing background information of the management team, this uncertainty can be partially removed. Next to that, the founder's or the venture's ability to generate future cash flows is important, as the principal and the interest has to be paid back to backers in time (Ahlers, et al., 2015). Financial forecasts show the expected profit and loss over time and gives the backers insights in the prospects of the project. When founders include financial forecasts or a disclaimer in their project description, they create a lower level of uncertainty for backers. When founders provide more and more precise information, backers will become less restricted in giving funds. Moreover, the risks mentioned by the platform and securities the founder offers gives the backers information about what happens in case the founder defaults. Founders should clearly state the risks involved in the project, as this allows backers to analyse the crowdfunding campaign and create a more precise overview of the risks and opportunities (Ahlers, et al., 2015).

2.4.1.2 Information asymmetry in equity-based crowdfunding

The most critical differences between equity crowdfunding and non-equity crowdfunding arise due to the strengthening of information asymmetries. In equity crowdfunding, the information asymmetry problem does not only contain the founder's ability to deliver the product, but also the ability of the founder to generate equity value by building a business in contrast to just delivering the product. For lack of strict governance, accounting, reporting and other requirement which are common in publicly traded securities markets, the backers face an unusually high degree of risk (Agrawal, et al., 2014).

In comparison to the other crowdfunding forms, information asymmetries are generally higher with equity crowdfunding projects, due to the fact that gathering information, monitoring progress, and providing input are important for start-ups and early-stage investors. Moreover, information asymmetries about the ability of the founder to generate future cash flows is of importance in this context (Ahlers, et al., 2015).

In equity-based crowdfunding the information asymmetry about the founder's or the venture's ability to generate future cash flows is important. Moreover, backers don't know whether and how the founder will lead the venture once it is financed and starts to grow (Ahlers, et al., 2015).

When backers invest in equity-based crowdfunding, they commit to long-term goals. If growth is the primary goal of the backers, they are expected to keep control of the firm after an offering. Due to the information asymmetry between founders and potential backers, founders have to disclose credible information about their project that potential backers can use to evaluate the potential of the project and the founders have few options to interact with backers. Therefore, it is more challenging for founders to convince backers to support them than in traditional financing (Ahlers, et al., 2015). In equity financing managers take risks, but the shareholders are the ones who actually carry the risk. Therefore, equity finance is a way to spread the risk over a number of different people (Short H. , 1994).

Generally, most differences between equity and non-equity crowdfunding exist due to information asymmetries. One suggested solution by signalling theory for information asymmetries between founders and potential backers is that the founders, which are the informed party, can send observable signals to the potential backers, which are the less informed party, and disclose information about unobservable features to promote exchange (Spence, 1973).

2.4.1.3 Information asymmetry in reward-based crowdfunding

In reward-based crowdfunding the information asymmetry exists about the true quality of the product, as this is unknown until the production of the product has taken place. In this context, information asymmetries about the ability of the founder to generate future cash flows is less suitable, as backers receive a product or service, rather than a share in the company in return for monetary contributions. In reward-based crowdfunding, the backers do not make decisions based on their investment, but rather on their consumption (Cumming, Leboeuf, & Schwienbacher, 2014).

When a founder uses the pre-ordering scheme, there exists uncertainty about the true quality of the product for both the founder and the backers, as the true quality can only be known after the production has taken place. When the pre-ordering scheme is used, founders have to deal with backers which have different expected valuations. Backers have to pre-order the product before the true quality of the product is known. Therefore, advance purchase leads to price discounts and price discrimination (Nocke, et al., 2011). There is a distinction in this asymmetry between the hidden information, meaning that the realization of quality is an exogenous event, and hidden action, meaning that the realization of quality is under the founder's control. As backers cannot know for sure what the product quality is, they might not pre-order the product. Furthermore, when the pre-ordering scheme is not used, information asymmetry can exist when founders know the product quality better than the backers. Another form of information asymmetry that is important in reward-based crowdfunding is that if the backers don't know the founder, they can't correctly evaluate his or her ability to produce and deliver the prepurchased product (Ahlers, et al., 2015).

2.4.1.4 Information asymmetry in donation-based crowdfunding

In donation-based crowdfunding, backers do not expect to receive anything in return for their investment. Therefore, information asymmetry is expected to be the least important for the four crowdfunding models. The primary goal of the backers is to donate and help the founder achieve its goal, not to receive anything in return. This is in contrast to the loan-based and equity-based model and partially in contrast to the reward-based model. Intrinsic motivation is most associated with this type of crowdfunding. The donation-based crowdfunding model shows evidence which supports the existence of pure altruism. The primary motivation of backers for this crowdfunding type is philanthropic (Beaulieu, et al., 2015). In contrast to for-profit investors, backers are motivated by the ideas of the project rather than financial returns (Kleppe & Nilsen, 2017).

2.4.2 Signaling theory

When two parties do not have access to the same information, signaling theory is useful for describing behaviour. One party, the sender, must choose whether and how to communicate, or signal, the information to the other party, the receiver. The receiver has to choose how to interpret this signal (Connelly, Certo, Ireland, & Reutzel, 2011). Signaling theory is primarily concerned with reducing information asymmetries between two parties. The senders of the information deliberately send positive signals to the less informed party to reduce information asymmetries and cause a reaction by the receivers, for example, investment in a company (Certo, 2003; Busenitz, Fiet, & Moesel, 2005).

In crowdfunding, an effective signal must be observable by backers, and difficult or costly to copy by a low-quality entrepreneur (Belleflamme, et al., 2014). Founders who choose to attract capital through crowdfunding, can signal reputation through quality signals, feedback systems and trustworthy intermediaries (Agrawal, et al., 2015). Credible signals of quality in online marketplaces can be provided by leveraging brand reputation. However, the importance of brands declines as information become more accessible (Waldfogel & Chen, 2006). Next to that, senior executives on the founding team, and founders with a doctoral degree also serve as signals of quality (Hsu D. H., 2006). Moreover, the level of education is positively related with successful fundraising in crowdfunding (Ahlers, et al., 2015).

The signaler and the receiver have partially conflicting interests. When the signaler sends inferior signals, he would gain from sending these. Therefore, the signaler has an incentive to deceive the receiver (Ross, 1977). However, receivers of the signals are disadvantaged by acting on false signals. Therfore, they learn to ignore these signals and perceive the signaler as dishonest (Connelly, et al., 2011). Next to that, it is possible that different receivers interpret signals differently (Perkins & Hendry, 2005).

A way to signal the quality of a venture is to communicate the start-up's value through updates to the backers. In equity crowdfunding, updates have generally a positive effect on participation, because they are visible and observable (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). Using updates regularly to send signals to the crowd may have a positive influence on crowdfunding participation. However, crowdfunding campaigns typically have a funding period of around two months, therefore, developments which can be communicated are limited. Because of this, an increasing number of updates might be perceived by backers as unreliable as no further information value can be given (Perkins & Hendry, 2005).

Founders have to show information about their projects to potential backers, in order to realize their funding goals. In general, founders have three ways to send project signals to potential backers. The first is to provide a well designed project homepage. This includes the amount of words to describe the project, and the number of videos. Second, founders should communicate a lot with backers, and post information updates about the project as soon as possible. Third and last, founders need to take care of a reward scheme which is well designed (Xiao, et al., 2014). Potential backers are attracted to invest in projects that appear likely to succeed. Projects that signal a greater level of quality are more likely to receive funds. There are several quality signals in crowdfunding. For example, the role of preparedness, which is determined by the degree to which the founders took effort and time to ensure that their project pitches measure up to the standards of successful pitches. When founders include a video in their project pitch, this serves as a signal of at least minimum preparation (Mollick, The dynamics of crowdfunding: An exploratory study, 2014).

2.5 Success factors

In this section, factors that are likely to enhance the probability of success are discussed. Most likely, these factors reduce the earlier mentioned information asymmetries, or uncertainties, or send a signal to the backers. Potential backers need information in order to evaluate a crowdfunding project (Giudici, et al., 2013). Mainly, existing literature about crowdfunding has focused on the identification of project-specific factors and founder-specific factors that are associated with successful funding outcomes (Kuppuswamy & Bayus, 2015; Koch & Siering, 2015). On crowdfunding platforms, it is especially difficult for backers to assess the true competence of the founder or the underlying quality of the project (Agrawal, et al., 2014). As most of the earlier mentioned information asymmetries are project-specific, or founder-specific, one can expect that projects will be more successful when these information asymmetries are reduced. Projects and founders that signal greater quality, are likely to receive more funding, and thus have a more successful crowdfunding campaign. Additionally, when uncertainties and information asymmetry are reduced on these factors, the probabilities of success of the crowdfunding campaigns will likely increase. Therefore, project-specific and founder-specific factors are expected to have an influence on the project success. These factors will now be explained in more detail.

2.5.1 Project-specific factors

The success factors of crowdfunding projects play a role in reducing the information asymmetry for (potential) backers of crowdfunding projects. A more successful crowdfunding project will not only help the founder, but also the backers to achieve their goals. Many crowdfunding initiatives seek funds for products and/or services that are not yet on the market. Therefore, information asymmetries and uncertainty about the product are prevalent. Backers have to rely on the description and promise of the founder of what the final product or service will be (Belleflamme, et al., 2014).

Founders have to convince backers to invest in their crowdfunding campaigns. Prior studies have shown that successful crowdfunding projects are related to quality signals of the proposed project, such as well-preparedness and the absence of spelling mistakes (Mollick, 2014; Ahlers, et al., 2015; Bi, et al., 2017; Dorfleitner, et al., 2016). When backers respond to quality signals, this indicates that the backers assess the prospects of success of the crowdfunding project. When backers don't respond to quality signals, their decision-making is based on other investment criteria (Mollick, The dynamics of crowdfunding: An exploratory study, 2014). In order to convince backers to invest in their crowdfunding campaigns, founders have to reduce information asymmetries about the project between them and the backers.

Together with the crowdfunding platform the founder has chosen, the founders are responsible for a well-designed crowdfunding page. For most of the project-specific factors mentioned below, the founders determine whether they are successful or not. There are a number of project-specific factors that can influence the probabilities of success of a crowdfunding campaign, which are the length of the project description, the absence of spelling mistakes in the project description, the use of a video, whether the project involves a finished or unfinished product, and the provision of financial information about the project.

2.5.1.1 Length of the project description

The project description represents the description of the project, made by the founder, which is available at the crowdfunding campaign page of the crowdfunding platform. The project descriptions can vary at a number of aspects. First, the length of the project description, the amount of supporting graphs or images and the presence of a video are considered. The length and depth of de project descriptions vary. The length of the project description captures the amount of information the founder provides. Typically, crowdfunding projects involve unfinished products, services, and unproven technologies. As a result, there is little external information about the factual evidence which refers to the final products and quality. Therefore,

founders need to provide sufficient information for backers to evaluate their project, increase the confidence of the backers, and to earn the backers' trust (Zhou, et al., 2016).

Projects with greater project descriptions, i.e. descriptions at greater length, can be expected to be described more thoroughly. The projects described in more detail should have a higher chance of being understood correctly. Next to that, greater project descriptions should help to reduce information asymmetries between the founder and the backers (Gefen, et al., 2015). The word count may show the degree of preparedness as well as the amount of information that is delivered to the readers. Backers wish to assess the potential of the project, and the more detailed the description is, the fewer information asymmetries are associated with the project. Backers are more likely to invest when information asymmetries are reduced (Bi, et al., 2017). As founders state their goals in the project description, this may also reduce agency problems.

2.5.1.2 Absence of spelling mistakes

Another important aspect in the project descriptions are the spelling mistakes. Often, spelling mistakes are seen as an indication of poor cognitive skills of the author (Kreiner, et al., 2002). In addition, a text is regarded especially inferior when the spelling mistakes can be detected by a spell checker (Figueredo & Varnhagen, 2005). The existence of spell-checking software, and additionally the lack of basic proofreading that errors imply, makes that spelling mistakes signal reduced preparedness and quality (Mollick, 2014). Moreover, bad spelling can make it difficult to assess a text, which in turn lowers the probability for successful funding. In conclusion, when the project descriptions contain spelling mistakes, this could be interpreted as an indication of a less solvent borrower. The author may even appear to be untrustworthy (Dorfleitner, et al., 2016).

2.5.1.3 Use of video

The visualizations of a crowdfunding project represent the videos and images included in the project description on the crowdfunding platform, as the videos and images visualize the concept or idea of the founder. Actions of founders that demonstrate founder credibility and project quality can help attract backers in giving funds for the crowdfunding campaign. A potential action of the founder is to use a video to communicate the characteristics of the product and the development stage. Through the use of videos, backers receive information about the technical feasibility and the market readiness. This way, backers can better ascertain the quality of the product (Courtney, Dutta, & Li, 2017). The inclusion of a graphical accompaniment

makes it more easy for backers to understand the project and make a decision whether to participate in the crowdfunding campaign (Koch & Siering, 2015). According to Schäfer, et al. (2016), the inclusion of visualizations like images and videos leads to more successful projects. However, some studies argue that visual pitches are developed into a crowdfunding standard, and are therefore not adequate to predict success (Frydrych, et al., 2014).

At a more developed stage, crowdfunding projects are able to include both videos and images. The likelihood of the founder to develop and deliver the product is therefore expected to be higher. This can enhance the trust of the backers in the founder. The use of visualizations demonstrates preparedness and signals founder credibility and project quality (Mollick, 2014). Videos are, unlike images, able to supply audio information and show movements. Additional to the project description (text) and the images, this is the third way for founders to present their project to backers. A video allows the founder to present additional information to the backers, in a way that is not possible through text or images (Koch & Siering, 2015). This way, information asymmetries can be reduced.

In online environments, social presence is an important factor in the establishment of relationships (Cyr, et al., 2007). Social presence is described as "the feeling or sense of warmth and sociability within a website" (Cyr, et al., 2007). The social presence theory refers to "the degree of salience of the other person in a mediated interaction and the consequent salience of the interpersonal interaction" (Short, et al., 1976). The term salience refers to the significance of other individuals in the interaction (Kehrwald, 2008). Products that are represented in e-commerce platforms with an emotive product description, and pictures of humans who are interacting with the product, result in higher perceptions of social presence. This positively influences the purchasing intention of the consumers, as well as their loyalty (Cyr, et al., 2007; Gefen & Straub, 2003; Hassanein & Head, 2007). As the founder-backer relationship in the crowdfunding domain is similar to the seller-buyer relationship in the e-commerce domain, it is expected that the social presence perceived on the crowdfunding site will also have a positive impact on the relationship between the founder and the backer, and therefore also a positive influence on the crowdfunding campaign (Raab, et al., 2017). Founders can use the video to socially enrich their project descriptions.

2.5.1.4 Finished product

As explained before, when a founder uses the pre-ordering scheme, there exists uncertainty about the true quality of the product for both the founder and the backers, as the true quality can only be known after the production has taken place (Nocke, et al., 2011; Belleflamme, et

al., 2014). Many backers who support crowdfunding projects, pay to receive the product weeks or months prior to the production of this product. Not only does the risk exist that the product will not come into being at all, but also the true quality of the product cannot be known, as the product has not yet been produced (Gerber & Hui, 2013). This also applies to crowdfunding campaigns in which the founder asks for funding for a new concept or idea of any kind, which backers are unfamiliar with. Therefore, potential backers have to rely on the project description, and the promise of the founder on what the final product will be like (Belleflamme, et al., 2014). Backers cannot evaluate the finished product in the same way as they do with products in a retail store (Chakraborty & Swinney, 2016). Because of this uncertainty, backers might withhold their funds.

Founders have to reveal information about the product in order to convince backers to participate in the crowdfunding campaign. When the product is finished and produced, the founder can demonstrate what the product looks like, and how it works through a video, images or provided links. Then, the uncertainty about the product will be less compared to products that are not yet fabricated. Therefore it is expected that a finished product is associated with a higher chance of success of the crowdfunding campaign.

2.5.1.5 Provision of financials

It is possible, and for some platforms conditional, that founders post financial information on the platform, such as financial forecasts, historical revenue, and profit figures. The mere provision of financials, regardless of its quality, is a positive indicator of the success of a crowdfunding campaign in equity- and reward-based crowdfunding (Lukkarinen, et al., 2016). Moreover, the provision of financials may reduce information asymmetries and uncertainties.

Equity-based crowdfunding projects that don't offer a disclaimer or financial forecasts, receive significantly less funding than projects that do offer them (Ahlers, et al., 2015). Next to this, reward-based crowdfunding projects that don't offer financials raise less in a crowdfunding campaign, and therefore also decrease the success of the campaign (Mollick, 2014).

As the provision, and not the quality of the financials, has been found to be related to the success of a crowdfunding campaign, it may be usefull to provide some financials for the backers. The attractiveness of these financials may be less relevant (Lukkarinen, 2016).

Table 1 presents a summary about the previous literature of the success origination from the project-specific factors.

Table 1 Previous literature on project-specific factors

Factor	Researcher(s)	Finding(s)	Influence
Length of the project description	Mollick, 2014	"Signals such as videos and frequent updates are associated with greater success, and spelling errors reduce the chance of success"	Positive
	Dorfleitner et al., 2016	"We find that spelling errors, text length and the mentioning of positive emotion evoking keywords predict the funding probability"	Positive
	Gefen et al., 2015	"As expected, projects requiring longer duration and described at greater length were bid at higher amounts" "longer duration projects and projects that are described in greater length, and therefore can be presumably assumed to be larger projects, are bid at higher amounts	Positive Positive
Spelling mistakes	Dorfleitner, et al., 2016	"We find that spelling errors, text length and the mentioning of positive emotion evoking keywords predict the funding probability"	Negative
	Peitz and Waldfoge, 2012	"spelling errors may decrease auction value"	Negative
	Mollick, 2014	"Given the prevalence of spell-checking software, and the lack of basic proofreading that errors imply, spelling mistakes should indicate reduced preparedness and quality"	Negative
Use of video	Frydrych, et al., 2014	"A visual pitch is far from being a guarantee of success"	-
	Mollick, 2014	"Signals such as videos and frequent updates are associated with greater success, and spelling errors reduce the chance of success"	Positive
		"producing a video is a clear signal of at least minimum preparation"	Positive
	Kuppuswamy and Bayus, 2015	"Projects with smaller goals, of shorter duration, and having a video are likely to garner additional backer support, as are projects with many reward categories"	Positive
	Xu, 2016	"Successfully funded entrepreneurs typically have longer project pitch, provide more reward choices, and employ more videos and images on their project page"	Positive
	Courtney, et al., 2017	"use of media can demonstrate preparedness and signal project quality and founder credibility"	Positive
Finished product	Beleflamme, et al., 2014	"uncertainty about the true quality of the product, which may only be known after production has taken place" "many times, entrepreneurs only offer a description and promise on what the final product will be"	Positive Positive

	Lei, et al., 2017	“Since these entrepreneurs are both the creators of their projects and also sellers of the final product, funders have to evaluate two different facets of uncertainty at the same time – whether the project initiator is 1) faithful or trustworthy and 2) competent to finish and deliver a high quality product”	Positive
Provision of financials	Lukkarinen, et al., 2016	“Existing literature indicates that the mere provision of financials—without taking a stance on the quality of the financials—is a positive indicator of campaign success in equity- and rewards-based crowdfunding”	Positive
	Ahlers, et al., 2015	" If entrepreneurs include neither financial forecasts nor a disclaimer then potential investors are left with a higher level of uncertainty compared to campaigns in which financial forecasts and disclaimers are provided”	Positive
		“there is signaling value in financial forecasts and an inclusion of a disclaimer, because the impact of this investment is larger when information asymmetries are high”	Positive
	Lukkarinen, et al., 2016	“Mollick finds that offering no financials decreases the amount raised in rewards-based crowdfunding”	Positive

2.5.2 The funding period

The funding period refers to the period the project campaign is open for backers to participate in the crowdfunding campaign. At this stage, the project

2.5.2.1 Duration of the crowdfunding campaign

The duration of a crowdfunding campaign represents the amount of time the crowdfunding campaign is open for backers to participate, i.e. give funds to the entrepreneur. The platform or the founder can decide how long the campaign will be open for funding, i.e. the funding period. This period and the whether the length of the period will be decided by the platform or the founder varies per platform.

A shorter duration of the crowdfunding campaign signals legitimacy, as this sets modest and achievable expectations (Frydrych, et al., 2014). An earlier study by Mollick (2014) has shown that the duration of the campaign decreases the chances of success. This is due to the fact that backers lose confidence in the campaign when they see large funding periods. Moreover, as contributions tend to accrue towards the end of a project campaign, and at the start, longer durations may leave a relatively quiet period in the middle. This way, a longer duration makes it possible for backers to take more time to consider the projects, and even forget about the project (Härkönen, 2014).

In contrast to this, a study by Cordova, et al., (2015) has shown that the duration of the campaign increases the chance of success. They state that the longer the duration of the project is, the higher the likelihood is that contributions will add up to the amount equal or above the one requested by the founder. Furthermore, the duration of a crowdfunding campaign in is positively associated with its success due to higher project visibility in donation-based crowdfunding (Burtch, et al., 2013).

2.5.2.2 Updates

Project updates refer to the updates, i.e. information, about the project posted by the founder on the crowdfunding page on the platform. Information posted by the founders during and after the funding period are called updates. These updates represent the efforts by founders to reach out to existing and potential backers, and to inform them about the developments in the project (Mollick, 2014). Through updates, founders can keep backers informed about the progress of the project (Xu, et al., 2014).

Platforms can play a role in reducing asymmetry by allowing backers to learn the product quality through interaction with the founder via the platform or by observing the contributions of other backers (Belleflamme, et al., 2010). How many and when the updates are posted, is directly influenced by the founder (Kuppuswamy & Bayus, 2015).

When the founder often posts updates about the status of the project, potential funders will have additional evidence to convince themselves to invest in the project (Koch & Siering, 2015). In previous research, successful projects usually have posted status updates during the funding period (Antonenko, et al., 2014).

2.5.2.3 Timing of the contributions

Existing literature suggests that campaign success is strongly predicted by funding contributions of backers made early on in a campaign. The tendency of new backers to provide funding in crowdfunding campaigns is increased by a higher accumulation of past investments (Agrawal, et al., 2014). Moreover, in profit-sharing crowdfunding, early investments have a strong influence on later investments (Kim & Viswanathan, 2014). Furthermore, the success of reward-based crowdfunding campaigns is related to the number, and amount of early contributions. This is due to the fact that early support is an indicator of quality, and likely funding success (Colombo, et al., 2015).

When a project is recently launched, there is a lot of time for many potential backers to make contributions. In the early stages of the duration of the crowdfunding campaign, potential backers feel less personally responsible for a project due to a diffusion of responsibility, and are therefore less likely to participate in the crowdfunding campaign. Morover, potential backers do not participate in the crowdfunding campaigns that already have received a lot of support, due to the fact that they assume that others will provide the required funding. When a project has reached its funding goal, potential backers are much less interested to participate in the crowdfunding campaign (Kuppuswamy & Bayus, 2015). During the end-stages of crowdfunding projects, the deadline effect kicks in. Due to lower expectations of contributions from other backers, potential backers are more likely to participate (Qiu, 2013).

Table 2 presents a summary about the previous literature of the success origination from the funding period

Table 2 Previous literature on the funding period

Factor	Researcher(s)	Finding(s)	Influence
Duration of the crowdfunding campaign	Frydrych et al., 2014	"Lower funding targets and shorter duration signal legitimacy by setting modest, achievable expectations"	Negative
		"The combination of a high funding target and a long funding period (…) is associated with less successful crowdfunding efforts"	Negative
		"Longer fund-raising periods lead to lower funding ratio values. Based from an organisational legitimacy perspective, we can assume that a longer fund-raising period might expose an uncertain narrative for the project, resulting in decreasing support for the project."	Negative
	Mollick, 2014	"Duration decreases the chances of success, possibly because longer durations are a sign of lack of confidence"	Negative
	Kuppuswamy and Bayus, 2015	"Projects with smaller goals, of shorter duration, and having a video are likely to garner additional backer support, as are projects with many reward categories"	Negative
	Gefen et al., 2015	"longer duration projects and projects that are described in greater length, and therefore can be presumably assumed to be larger projects, are bid at higher amounts"	Positive
Updates	Mollick, 2014	"Signals such as videos and frequent updates are associated with greater success, and spelling errors reduce the chance of success."	Positive
	Tu, et al., 2018	"If the project founder often updates the status of the project, new funders will have more evidence to convince themselves that the project is worth investing"	Positive
	Xu, et al., 2014	"Besides careful preparation of a project's representation, creating updates is also an important part of managing a campaign"	Positive
Timing of contributions	Kim & Viswanhatan, 2014	"We show that early investments by experts serve as credible signals of quality for later investors, especially for those who are less experienced"	Positive
	Kuppuswamy & Bayus, 2015	" Many potential backers do not contribute to a project that has already received a lot of support because they assume that others will provide the necessary funding. Consistent with the deadline effect widely observed in bargaining and online auctions, we also show that the diffusion of responsibility effects diminish as the project funding cycle approaches its closing date."	Negative
		"Due to a diffusion of responsibility, potential backers feel less personal responsibility for a project in the early stages of its funding cycle and thus are less likely to contribute"	Negative
	Qiu, 2013	""potential backers are much less interested in supporting a project after it reaches its funding goal"	Negative

2.5.3 Founder-specific factors

As explained earlier, the main deterrent for backers to participate in crowdfunding is the distrust in the founder's use of funds or the inability of the founder to use the funds wisely (Gerber & Hui, 2013). It is therefore important to provide information about the founder to potential backers. It is likely that backers will withhold their funds when they are uncertain about the quality of the founder and the project due to information symmetries. Founders have to make efforts to reduce information asymmetries between the backers and them. It can therefore be expected that the probabilities of success of a crowdfunding campaign are higher when information asymmetries are reduced about the project and the founder, as backers are not restrained anymore by the information asymmetries. Next to the earlier mentioned project-specific factors, founder-specific factors can have an influence as well. Several factors have been researched before in this area. The founder-specific factors include the social network of the founder, the educational background of the founder, the inclusion of a picture of the founder, and a link to a separate site or Facebook page. These factors will now be explained.

2.5.3.1 Social network

The social network represents the size of the social network of the founder. In previous research this is measured by the number of LinkedIn connections (Colombo, et al., 2014), Facebook friends (Mollick, 2014), Facebook shares and Twitter tweets (Thies, Wessel, & Benlian, 2014), Twitter followers and GooglePlus followers (Lu, et al., 2014). For many projects in crowdfunding, the initial source of significant funding is the social network of the founder (Mollick, 2014). The social network size, and the number of Facebook "likes" for a project page serve as a signal of individual social capital, and previous research has found a positive correlation between social capital and crowdfunding success (Mollick, 2014; Guidici, et al., 2013; Moisseyev, 2013).

Due to the direct bids from those to whom the founder is connected, a larger social network is expected to have greater probabilities of success (Vismara, 2016). Moreover, the social connections may help to spread information about the project and generate word-of-mouth familiarity with crowdfunding projects (Colombo, et al., 2015).

A critical ingredient for crowdfunding projects to be more profitable than traditional funding is that the founder builds on a community that supports him. This community influences the strategic process of decision-making in the early stage of business development. This involves the integration of a social network, particularly an online social network, into the

managerial process. Through this social network, the founder can communicate with the crowd. A larger social network is associated with success (Mollick, 2014).

Typically, crowdfunding projects are performed by first-time entrepreneurs. As their performance is not measurable yet, it is hard to count on investment banks. Most backers provide funds to founders they know at least by reputation. The social capital of the founder is expected to play an important role in attracting early investments from backers in their crowdfunding campaigns. For that reason, existing social networks are important for founders in making their crowdfunding projects successful (Vismara, 2016). Moreover, it is vital to continued crowdfunding efforts for the founder to increase the network beyond friends and family, as there are no social strings attached to financial support from backers whom are not friends or family from the founder (Davidson & Poor, 2016). The social network of the founders is the initial source of funding for many projects (Mollick, 2014). It is identical to the money of friends and family (Agrawal, et al., 2015). It is therefore expected that a larger social network is associated with a higher chance of success.

2.5.3.2 Gender of the founder

Female founders that seek startup capital receive less capital than male founders. One reason for this is a lack of representation of women among funders of start-ups. However, crowdfunding appears to reduce constraints for female founders who seek capital. In crowdfunding, female founders are considerably more likely to receive capital than male founders. The success of female founders is not primarily based on the representation of females among backers. Their success is driven by the success of the technology projects that are developed by female founders. The success of female founders is driven by a small segment of female founders (Greenberg & Mollick, 2015).

Women perform better in crowdfunding than men due to female backers (Greenberg & Mollick, 2015). Women are more likely to donate to other women's campaigns than men. However, the linguistic characteristics in the campaigns have similar impacts on male and female backers. Therefore, the positive relationship between female founders and female backers is partially explained by language. The female advantage is obtained by the way female founder pitch and communicate with potential backers, in comparison to male founders (Gorbatai & Nelson, 2015).

2.5.3.3 Crowdfunding experience of the founder

Crowdfunding experience conveys information about the quality of the project and the credibility of the founder. The crowdfunding experience of the founder is a characteristic that informs the backers about the ability and experience of the founder to develop a project and realise a successful outcome. The founder and the experience of the founding team can influence the funding decisions of backers (Hsu D. H., 2007; Kaplan & Strömberg, 2004).

Some founders have more experience in crowdfunding than other founders. The experience in crowdfunding of a founder can serve as a signal of founder credibility and project quality. Moreover, when a founder has experience in raising capital through crowdfunding, this makes the promise of the founder to deliver and develop the current project more credible (Courtney, et al., 2017).

2.5.3.4 Founding team: educational background

As mentioned before, many crowdfunding projects are performed by first-time entrepreneurs. As information about young startups is commonly lacking, potential backers must rely on characteristics that are observable (Shane & Cable, Network ties, reputation, and the financing of new ventures, 2002). Therefore, an important observable characteristic for backers is the human capital of startups (Beckman, Burton, & O'Reilly, 2007). Especially the founder and the experience of the founding team can influence the decisions of backers (Kaplan & Strömberg, 2004). Often, venture capitalists use the experience, management skills, and educational degrees of the founder as important selection criteria. Higher levels of education, as measured by the percentage of board members with MBA degrees, are more likely to attract investment (Ahlers, et al., 2015).

Factors like the educational background of the founder and top management team characteristics have signalling benefits, which increase the likelihood of receiving funds (Baum & Silverman, 2004; Hsu, 2006). It is possible that a high level of education is related with higher levels of funding, since an education can broaden the professional network and increase professionalism (Lundborg, 2015). Moreover, previous studies have found that in entrepreneurial ventures, the level of education is positively correlated with receiving financial resources (Becker, 1964: Hsu, 2007). Furthermore, management teams with a high education level receive higher valuations in the emerging internet industry, which suggests that the educational degree have a signaling effect (Hsu D. H., 2007; Backes-Gellner & Werner, 2007; Levie & Gimmon, 2008).

Table 3 Previous literature on founder-specific factors

Factor	Researcher(s)	Finding(s)	Influence
Social network	Mollick, 2014	"while a large numbers of friends on online social networks are similarly associated with success"	Positive
	Stam and Elfring, 2008	"social network of individuals seeking funding influences the success of entrepreneurial financing efforts, as it provides connections to funders as well as endorsements of project quality"	Positive
	Nesta, 2014	"the most important route to successful funder sourcing is through their existing social networks"	Positive
	Vismara, 2016	"the number of a founder's social network connections is associated positively with the capital raised from a project"	Positive
Gender	Greenberg & Mollick, 2015	"women are considerably more likely to successful raise capital than male founders. Contrary to expectations informed by prior literature, we find that this effect is not primarily based on female representation among backers alone. Instead, it is driven by the success of female founders developing technology projects"	Positive
	Greenberg, 2017	"women perform better in crowdfunding than male founders"	Positive
		"Research has also demonstrated this female advantage using data from Indiegogo (Gorbatai and Nelson, 2015) that accounts for the comparative manner in which female and male foundrs pitch and communicate with potential funders.	Positive
Crowdfunding experience of founder	Courtney, Dutta & Li, 2017	" founder and founding teams' experience can influence investors' funding decisions"	Influence
		"Some founders have more experience in successfully raising crowdfunding capital than others. Such experience can be a credible signal of project quality and founder credibility"	Positive
		"if a founder has experience in launching and managing crowdfunding projects successfully, it makes the founder's promise to develop and deliver the current project more credible	Positive
	(Koch & Cheng, 2016)	"campaigns of project founders who have already successfully funded campaigns in their platform history are more likely to be successfully funded than founders without previous success"	Positive
Education of management team	Ahlers, et al., 2015	"teams including a higher number of people having MBA degrees, stand a higher chance of attracting a higher number of investors"	Positive
	Hsu, 2007	"educational attainment is correlated with the munificence of received financial resources in entrepreneurial ventures"	Positive
	Beckman, et al., 2007	"prior human capital experience is consistently associated with positive firm outcomes"	Positive

Table 3 presents a summary about the previous literature of the success originating from the founder-specific factors

2.5.4 Loan-based crowdfunding-specific factors

Next to the earlier mentioned project-specific factors, the factors related to the funding period, and the founder-specific factors, there are factors which relate to the type of crowdfunding. As loan-based crowdfunding is a different form of crowdfunding than reward-based crowdfunding, there are factors influencing the success of these different types of crowdfunding, which may not account for both types or more than one crowdfunding type. For the types loan-based crowdfunding, and equity-based crowdfunding projects there are specific factors belonging to the crowdfunding type that have influence on the funding success of crowdfunding. These factors will now be explained.

2.5.4.1 Loan-based crowdfunding projects

2.5.4.1.1 Interest rate

The interest rate in loan-based crowdfunding projects refers to the interest rate on the loan the founder offers. The interest rate can differ per project. The interest rate can be determined through an auction or by the platform. If the interest rate is determined through auction, the interest rates are ranked from most to least competitive. The most competitive bids are successful. For all bids, the interest rate is set at the rate of the highest successful bid, meaning that most backer achieve a better interest rate than the rate of their bid. The backers may also be offered a fixed interest rate (Bottiglia & Pichler, 2016).

Sequential bidding means that the interest rate is reflected by the collective perception of the backers about the creditworthiness of the founder (Belleflamme, et al., 2015). Entrepreneurs who seem more trustworthy have a greater chance of obtaining a loan for their project and they pay lower interest rates than entrepreneurs who seem less trustworthy. More trustworthy entrepreneurs have a lower probability of default. The interest rate paid by seemingly more trustworthy entrepreneurs is lower than the interest rate paid by seemingly less trustworthy entrepreneurs (Belleflamme, et al., 2015; Duarte, et al., 2012). However, as mentioned before, backers who are involved in loan-based crowdfunding have primarily financial motivations. Backers value the interest percentage of the loan they provide. As a higher interest percentage increases the return on their investment, this will likely attract backers to participate in the crowdfunding campaign (Pierrakis & Collins, 2014).

If the interest rate is determined by the platform, the interest rate is set depending on the founder's specific credit risk and market information. When founders include more unverifiable disclosures in their loan listing, like the intended use of the proceeds, interest rates on other debts, a picture, or explanations for poor credit ratings, founders may obtain a lower rate on a loan. Next to this, it will increase the bidding activity (Belleflamme, et al., 2015). Founders who appear more trustworthy are more likely to obtain a loan and pay lower interest rates than founders who appear less trustworhty. Founders who appear more trustworhty have lower probabilities of default and better credit grades (Duarte, et al.,, 2012).

2.5.4.1.2 Duration of the loan

When founders offer a loan-based crowdfunding project, not only the interest rate, but also the duration of the loan has an effect on the success of a crowdfunding campaign. When the founder raises the duration of the loan, the founder raises the probability of funding the loan (Barasinska, 2011; Feller, et al., 2014; Zhou, et al., 2018; Žurga, 2017). Increasing the duration of the loan has the effect of lowering the risk of the loan. When the duration of the loan increases, the founder will have lower monthly payments which brings a lower risk of later payments when compared with the same loans in a shorter period (Gavurova, et al., 2018).

2.5.4.2 Equity-based crowdfunding projects

2.5.4.2.1 Percentage of equity offered

Successful business ideas can have extremely high potential returns. Entrepreneurs will try to retain a large amount of the company when her or she is optimistic about future prospects. Therefore, founders can signal their commitment to their company through a high ownership retention. This behaviour of the entrepreneur will be perceived by potential backers as a quality signal, which will enhance their willingness to invest in the project. A larger percentage of equity offered to the backers would therefore reduce the probability of success for the crowdfunding project (Vismara, 2016). Moreover, higher equity retention can be perceived as a quality signal to potential backers, which in turn increases the likelihood of funding success. When founders are confident of the potential of their venture, they are likely to retain more equity, due to the fact that offering more equity will lead to less future wealth (Ralcheva & Roosenboom, 2016). If founders expect that their future cash flows are high relative to the current firm value, the founder will retain a substantial stake of the venture. A way for the

Table 4 Previous literature on loan- and equity-based crowdfunding-specific factors			
Factor	Researcher(s)	Finding(s)	Influence
Loan-based crowdfunding projects			
Interest rate	Belleflamme, Omrani & Peitz, 2015	"when the interest rate for a funded loan is determined through sequential bidding, it reflects the lenders' collective perception of the fundraisers creditworthiness"	Positive
		"borrowers who appear more trustworthy have higher probabilities of obtaining a loan and pay lower interest rates than do borrowers who appear less trustworthy"	Negative
	Pierrakis & Collins, 2014	" the interest rate is important or very important"	Positive
		"This finding reconfirms that peer-to-peer lenders are mainly interested in financial returns made"	Positive
Duration	Gavurova, et al., 2018)	"raising duration means raising the probability of funding loan"	Positive
	Barasinska, 2011	"return is negatively linked to loan duration"	Positive
Equity-based crowdfunding projects			
Percentage of equity offered	Ralcheva & Roosenboom, 2016	"higher equity retention could be perceived as a quality signal to future investors, increasing the likelihood of funding success"	Negative
	Ahlers, et al., 2015	"The rationale is that retaining ownership interests is costly, so entrepreneurs will only retain a "substantial" stake if they expect future cash flows to be high relative to current firm value"	Negative

entrepreneur to signal quality to backers is to invest in one's own project indirectly and keeping equity (Ahlers et al., 2015).

Table 4 presents a summary about the previous literature of the success factors originating from the loan-based crowdfunding-specific factors

2.6 Hypotheses

This research aims to get insight in the factors that drive the funding success of a crowdfunding campaign. More explicitly, the factors which determine the way in which the founder organizes the crowdfunding campaign. In order to answer the research question, "which factors influence the success of a crowdfunding campaign?", hypotheses are stated which are related to the success factors. Due to unavailability of data, I exclude the factors duration, social network, and equity retention from the hypotheses, and thus from the study.

The project-specific factors that are related to the funding success are the length of the project description, the absence of spelling mistakes, the use of a video, the use of a finished product and the provision of financials. These factors are all determined by the founder and the platform, as the founder, and the platform determine the contents of the project description, whether there are spelling mistakes in the project description, whether a video is used, what product or service is offered, and whether they provide the backers with financial information.

To earn the trust of potential backers, founders need to provide sufficient information about their crowdfunding projects. Crowdfunding projects typically involve unfinished products, services, and unproven technologies, from which there is little external information about the final product and quality known (Zhou, et al., 2017). In order to reduce information asymmetries and uncertainties about the projects, founders can choose to disclose a lot of information about the project to potential founders (Gefen, et al., 2015). Moreover, project descriptions which are described at greater length, can be expected to be described more thoroughly. The number of words used in a project description also shows the degree of preparedness and the amount of information that is delivered to potential backers (Bi, et al., 2017). Therefore, I expect that a *greater length of the project description* leads to higher funding success of the crowdfunding campaign.

Spelling mistakes are often seen as an indication of poor cognitive skills of an author (Kreiner, et al., 2002). Errors imply a lack of basic proofreading and reduced preparedness and

quality (Mollick, 2014). Moreover, when spelling mistakes can be detected by spell-checking software, a project description is regarded especially inferior (Figueredo & Varnhagen, 2005). Therefore, I expect that the *absence of spelling mistakes* leads to higher funding success of the crowdfunding campaign.

As mentioned before, as crowdfunding projects typically involve unfinished products, services and unproven technologies, a visualization of the product or service reduces uncertainty and information asymmetries. The founder can use a video to show the characteristics of the product as well as the development stage (Courtney, Dutta & Li, 2017). Some studies argue that visual pitches are developed into a crowdfunding standard (Frydrych, et al., 2014.). However, at a more developed stage, the founder can demonstrate what the product looks like or how it works through a video (Mollick, 2015). Moreover, a graphical accompaniment makes it easier for potential backers to understand the project, and allows the founder to present additional information to backers in a way that is not possible through text or images (Koch & Siering, 2015).). Therefore, potential backers can better ascertain the quality of the product. In addition, a video may increase the social presence in the project description, which in turn positively influences the purchasing intention of the potential backers (Cyr, et al., 2007). Therefore, I expect that *the use of a video* leads higher funding success of the crowdfunding campaign.

The true quality of a product can only be known after the production has taken place (Belleflamme, et al., 2014; Nocke, et al., 2011). In crowdfunding, many backers pay for a product weeks or months prior to the production of the product they wish to receive. Therefore, the risk exists that the product will not come into being at all. Next to that, the true quality of the product is unknown, as the product has never been produced before (Gerber & Hu. 2013). Backers are unable to evaluate the finished product in the same way as they do with products they can see and feel in a retail store (Chakraborty & Swinney, 2016). This leaves backers with uncertainty of the product. However, when a product is finished, the true quality can be known. Therefore finished products have less uncertainty for potential backers than unfinished products. When a product is finished, and fabricated, potential backers can see, feel, and estimate the true quality of the product better, which leaves them with less uncertainty. Therefore, I expect that *finished products* lead to higher funding success of the crowdfunding campaign.

Previous literature has indicated that the mere provision of financials, such as financial forecasts, historical revenue, and profit figures, regardless of its quality, is a positive indicator of the success of crowdfunding campaigns for equity-, and reward-based crowdfunding projects

(Lukkarinen, et al., 2016). Moreover, reward-based crowdfunding projects without financials receive less funding than projects that do offer them (Mollick, 2014). The provision of financials may reduce information asymmetries and uncertainties for potential backers. As the provision of financials, not the quality, has been found to be related to the success of a crowdfunding campaign, I expect that *the provision of financials* leads to higher funding success of the crowdfunding campaign.

These project-specific factors lead to the following hypothesis:

H1: the project-specific factors have a positive impact on the probabilities of funding success of a crowdfunding campaign.

Next, there are success factors in relation to the funding period, which is the number of updates in the crowdfunding campaign.

During the crowdfunding campaign, the founder has the possibility to communicate with (potential) backers through the platform via updates. Updates represent efforts by the founders to reach out to existing and potential backers, and inform them about the developments in the project (Mollick, 2014). Founders can reduce information asymmetries by allowing backers to learn the product quality through interaction via updates (Belleflamme, et al., 2010). The number of updates as well as their timing is directly influenced by the founders. Updates have been found to have a positive influence on achieving the project goal, as they awaken emotions and excitement from backers (Kuppuswamy & Bayus, 2015). Updates provide (potential) backers with additional information to convince themselves to invest in the project (Koch & Siering, 2015). As updates reduce uncertainty of backers about the development of the project, one can assume that project updates are associated with a higher chance of success of the crowdfunding campaign. Therefore I expect that more *updates* lead to higher funding success of the crowdfunding campaign.

This funding period-specific factor leads to the following hypothesis:

H2: the number of updates has a positive impact on the probabilities of funding success of a crowdfunding campaign.

Next, there are success factors in relation to the founder, which is the social network of the founder, and the crowdfunding experience of the founder.

To be more profitable in crowdfunding than in traditional funding, a founder has to build on a community that supports him. The social network of the founder has been found to positively influence the funding success (Mollick, 2014; Guidici, et al., 2013, Moisseyev,

2013). The social network of the founder often is the initial source of significant funding (Mollick, 2014). The social network of the founder can help the founder to spread information of the project. Moreover, it can generate word-of-mouth familiarity with the crowdfunding project (Colombo, et al., 2015.). Funds are provided by backers to founders who they at least know by reputation (Vismara, 2016). When the social network is larger, more potential backers can be reached. However, as the social network of a founder is measured by the number of Facebook friends, I have to know how many Facebook friends the founders have. As none of the founders post a link to their personal Facebook page, I can't know for sure how many Facebook friends each founder or founding team has, and thus cannot include the factor social network in this study.

In order to find out whether a founder or founding team is willing to expose information about themselves, a founder can provide a link to his or her own private social network. Furthermore, when a founder posts a link to his or her LinkedIn or Facebook account, a potential backer has the ability to find out more about the founder, and his or her background. Moreover, this may reduce uncertainties. Therefore I expect that *a link to the social network of the founder on the crowdfunding page* leads to higher funding success of the crowdfunding campaign.

When a founder has completed a crowdfunding campaign in the past once or more, the founder has crowdfunding experience. When a founder has crowdfunding experience, the founder can use that experience when designing a new project. The project experience of a founder informs the backers about the quality of the project and the credibility of the founder. Moreover, it informs backers about the ability and experience of the founder to develop a crowdfunding project and realise a successful outcome (Hsu, 2007; Kaplan & Strömberg, 2004). Furthermore, the promise of the founder to deliver and develop a project becomes more credible when a founder has experience with capital raising through crowdfunding (Courtney, et al., 2017). Therefore I expect when a founder has *crowdfunding experience*, this will lead to higher funding success of the crowdfunding campaign.

These founder-specific factors lead to the following hypothesis:

H3: the founder-specific factors have a positive impact on the probabilities of funding success of a crowdfunding campaign

Next, there are success factors in relation to the type of crowdfunding. For loan-based crowdfunding projects the success factors are the interest rate and the duration of the loan. For equity-based crowdfunding projects the success factor is the percentage of equity offered, and for reward-based crowdfunding projects the success factor is the reward scheme. For donation-

based crowdfunding projects, there are no project-type specific success factors. However, as the platform in this research offers convertible loans instead of equity-based crowdfunding projects, the percentage of equity offered will not be included in this research.

As explained earlier, the interest rate of a loan-based crowdfunding project can be determined by the platform or through sequential bidding. Sequential bidding means that the interest rate is reflected by the collective perception of the backers about the creditworthiness of the founder (Belleflamme, et al., 2015). When the interest rate is determined by the platform, the interest rate is set depending on the founder's specific credit risk and market information. Backers who choose to participate in loan-based crowdfunding projects, have primarily financial motivations. As the return on their investment increases when the interest percentage is higher, this might attract potential backers to participate in the crowdfunding campaign (Pierrakis & Collins, 2014). However, the interest rate paid by seemingly more trustworthy entrepreneurs is lower than the interest rate paid by seemingly less trustworthy entrepreneurs (Belleflamme, et al., 2015; Duarte, et al., 2012). Moreover, founders who appear more trustworthy have lower probabilities of default and better credit grades (Duarte, et al., 2012). I follow this line of research and expect that, due to the signaling benefit, a lower *interest rate* will lead to higher funding success of the loan-based crowdfunding campaign.

In loan-based crowdfunding projects, the duration of the loan is another success factor. When the loan duration is too long, backers have to wait on their money, which is costly. However, increasing the duration of the loan has the effect of lowering the risk of the loan, due to lower monthly payments (Gavurova, et al., 2018). Thus, when the founder raises the loan duration, the founder raises the probability of funding the loan. Therefore, I expect that a *longer duration of the loan* leads to a higher funding success.

These loan-based crowdfunding-specific factors lead to the following hypothesis:

H4: the loan-based crowdfunding-specific factors have a positive impact on the probabilities of funding success of a crowdfunding campaign

The conceptual model of the hypotheses can be found in Figure 1.

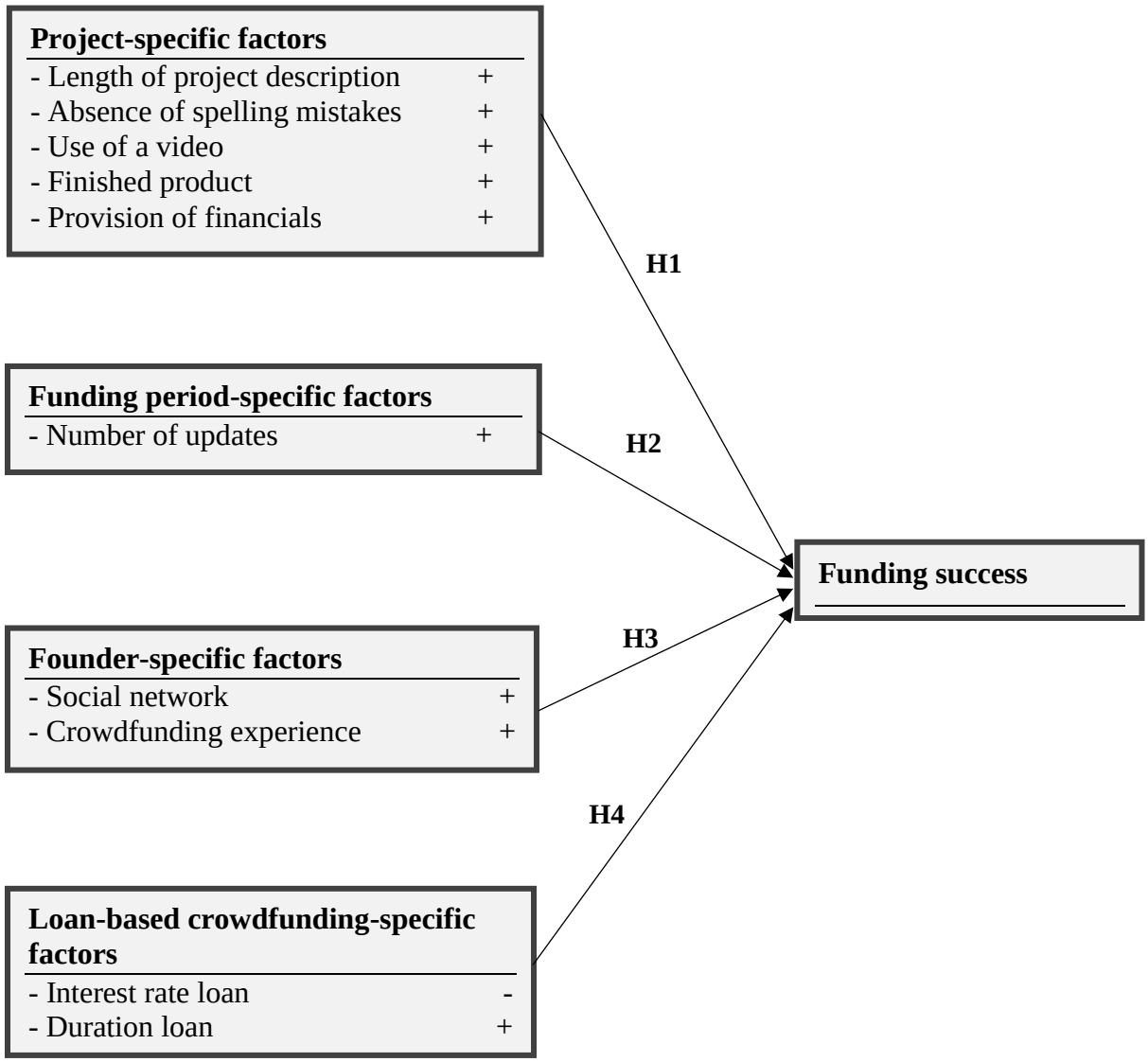

Figure 1 Conceptual model of the hypotheses

3. Institutional background in the Netherlands

This chapter introduces the legal matters of crowdfunding in the Netherlands, and the amount of money raised with crowdfunding in the Netherlands. In 2017, €223 million is raised with crowdfunding in the Netherlands. This is an increase compared to the year before. In 2016, there was raised €170 million with crowdfunding in the Netherlands (Financieel dagblad, 2018). 76% of the Dutch crowdfunding projects are financed with loan-based crowdfunding.

3.1 Legal matters

3.1.1 AFM

The AFM is the "Autoriteit Financiële Markten", which means the Authority Financial Markets. The AFM operates independently, and performs government tasks in the financial markets in the Netherlands. The AFM has legal duties and authorizations (AFM, 2018). The first priority of the AFM is to "reduce undesirable risks in the financial markets through regular and thematic supervision" (AFM, 2016). It is possible that a crowdfunding platform is covered by the Financial Supervision Act. In Dutch, this is the "Wet op het financieel toezicht (Wft) (AFM, 2018).

In the Netherlands, crowdfunding platforms that offer loan-based, and equity-based projects, need a license or an exemption of the AFM in order to perform crowdfunding activities. This does not count for donation-based, and reward-based crowdfunding projects. When it is possible for backers to invest in companies by buying tradable shares or bonds (equity-based projects), that means that backers can purchase securities (financial instruments). In this case, the platform acts as an investment firm, and for that the platform needs a license of the AFM (AFM, 2018).

3.2 Crowdfunding in the Netherlands

In the Netherlands, the total amount of money collected through crowdfunding is growing every year. This is shown in Table 5. Most of the money is collected by entrepreneurs who need money for investments in their companies. In 2017, 1,888 entrepreneurs collected €192 million through crowdfunding. The crowdfunding trends show that sustainability and sustainable energy grow in popularity, and share of the market in the Netherlands (Kamer van Koophandel, 2018). Moreover, in the first half year of 2018, the Dutch crowdfunding market has increased with 36%. In the first half year, 1,127 projects are financed with 115 million euros (Crowdfundmarkt, 2018).

Table 5 Crowdfunding in the Netherlands over the years						
Year	2012	2013	2014	2015	2016	2017
Amount collected in millions	€ 14	€ 32	€ 64	€ 128	€ 170	€ 223

In the Netherlands, the crowdfunding type loan-based crowdfunding is by far the most popular crowdfunding type, which can be seen in figure 2 (Crowdfundingcijfers, 2017).

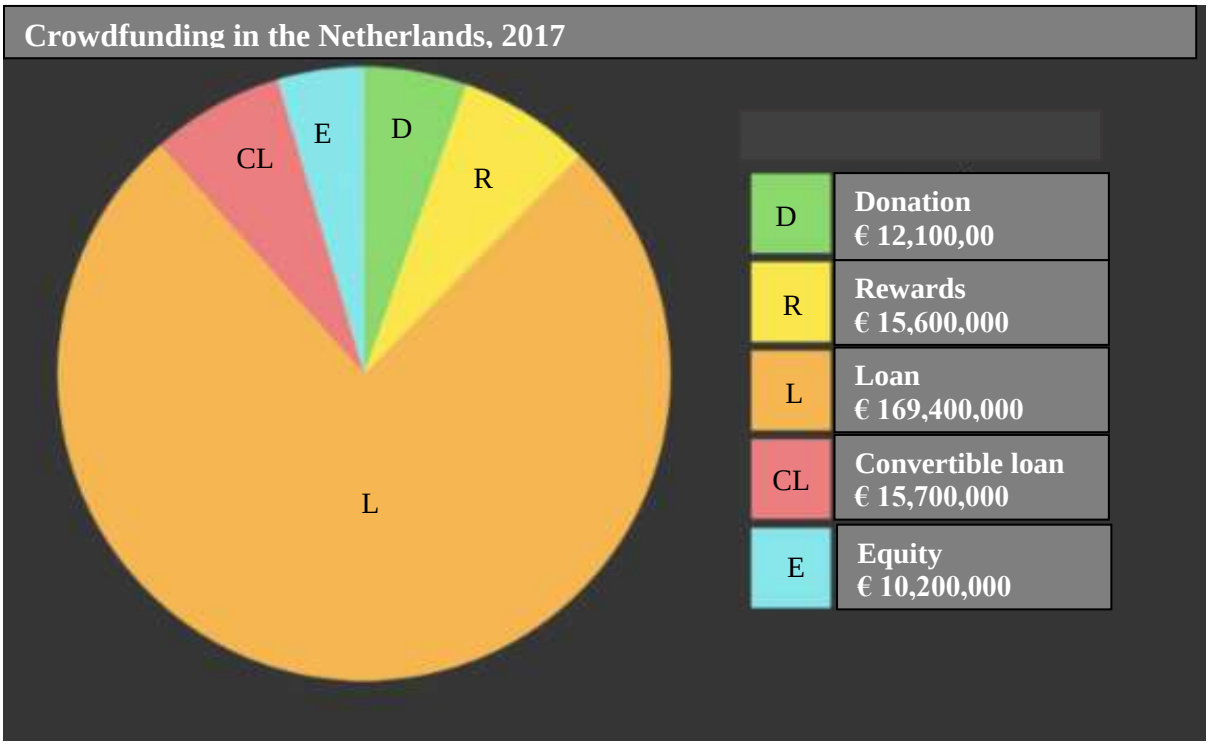

Figure 2 Crowdfunding in the Netherlands, 2017

The top 8 crowdfunding platforms in the Netherlands can be seen in Table 6 (Fundwijzer, 2018). Every platform in the top 8 platforms offers the crowdfunding type loan-based crowdfunding. However, many platforms do not offer all the types of crowdfunding.

Table 6 Top 8 crowdfunding platforms 2017			
Nr	Name of platform	Types of crowdfunding available	Amount raised in 2017
1	Collin crowdfund	- Loan-based crowdfunding	€ 33,700,000
2	Geldvoorelkaar.nl	- Loan-based crowdfunding - Equity-based crowdfunding	€ 24,000,000
3	Funding Circle	- Loan-based crowdfunding	€ 10,650,000
4	Lendahand	- Loan-based crowdfunding	€ 9,700,000
5	Duurzaam investeren	- Loan-based crowdfunding - Equity-based crowdfunding	€ 8,500,000
6	Oneplanetcrowd	- Loan-based crowdfunding - Equity-based crowdfunding - Reward-based crowdfunding - Donation-based crowdfunding	€ 7,550,000
7	Crowdaboutnow	- Loan-based crowdfunding	€ 6,750,000
8	Symbid	- Loan-based crowdfunding - Equity-based crowdfunding	€ 6,450,000

4. .Research design

This chapter introduces the research method used for crowdfunding success in previous studies, and explains which research method is used in this study. Hereafter the data collection and the variables used in this study are mentioned.

4.1 Research method

Different statistical models have been used to investigate which factors affect the funding success. Which model to use depends on the dependent measure. In previous studies the following research methods have been used to test the determining factors of funding success the most:

- Linear probability model
- Probit regression
- Logistic regression
- OLS multiple regression

When the dependent variable is metric (funding ratio), OLS multiple regression is the most used method (Allison, et al., 2014; Ahlers, et al., 2015; Bi, et al., 2017). As I use this method in this study, this method will be explained in more detail later on.

Often, success is defined binomially in crowdfunding, which states whether the funding target is reached or not. Then, logistic regression (Mitra & Gilbert, 2014; Parhankangas & Renko, 2017; Mollick, 2015), probit regression (Colombo, et al., 2015; Dorfleitner, et al., 2016) or the linear probability model (Kuppuswamy & Bayus, 2013; Agrawal et al., 2011) are appropriate models. A drawback of the linear probability model is that the estimated probabilities can fall outside the range of 0 and 1, unless there are restrictions are laid on the beta coefficients. However, this model is simple to apply.

Logistic regression and probit regression correct for this problem, and therefore these models are mostly used in prior studies. Both types are used to model the relationship between one or more independent variables, and a binary outcome. Logit regression uses the logit cumulative distribution function, and probit regression uses the normal cumulative distribution function. The two techniques are very similar, and lead to similar conclusions (Dey & Astin, 1993). Due to the ease of interpretation in terms of odds, and the higher level of popularity I choose to use logistic regression. Next, in order to test for robustness, I will use OLS regression.

Regression analysis is applied to analyse causes. A regression analysis is performed to examine the linear dependency between a metric dependent variable and one or more multiple metric independent variables (Hair, et al., 2014). Regression analysis indicates whether relationships between the two variables are significant and the strength of impact.

As the platform in this research uses the all or nothing strategy, a project is considered to be successful when the funding goal is achieved or exceeded. Founders will only receive the funds from the backers if the total contributions reach or go past the funding goal. This mechanism makes sure that backers know that their contribution will only be provided for project that raise the capital that they need to be viable (Belleflamme, et al., 2014). Both successful and unsuccessful projects will be used in the analysis.

The dependent variable of this study is the binary indicator which tells whether the crowdfunding project is successful or not, i.e., whether the funding goal has been achieved/exceeded or not. As the project founder only receives the funding when the funding goal is achieved or exceeded, a project is considered to be successful when the funding ratio is 100% or more.

4.1.1 Logistic regression

In order to test the hypotheses, I conduct an analysis in which I use logistic regression of the odds of funding success. Logistic regression is a form of regression that can predict and explain a binary categorical variable (two-group), rather than a metric dependent measure. When the dependent variable is a categorical (or nonmetric) variable, and the independent variables are metric or nonmetric, logistic regression is the appropriate statistical technique. Logistic regression indicates the relative impact of each predictor variable. The primary objective of logistic regression is to identify the group to which an object belongs. Logistic regression has the advantage that it has a general lack of assumptions. Moreover, it does not require linear relationships between the dependent variable and the independent variables (Hair, et al., 2014).

The dependent variable is a binary variable with values of 0 and 1, and the logistic model uses a logistic curve which is S-shaped. When a crowdfunding campaign is successful, the binary variable has the value 1, and when the crowdfunding campaign is unsuccessful, the binary variable has the value 0. Then, the coefficients will represent the impacts on the likelihood of success. As the relationship is bounded by 0 and 1, the logistic curve is used to represent the relationship between the dependent variable and the independent variables. The independent variable will never exceed 1 or reach 0. Logistic regression uses the maximum likelihood (MLE) as estimation technique, which requires large samples. Sample sizes greater

than 400 are recommended (Hosmer & Lemeshow, 2000). Moreover, the minimum sample size of each group is at least 10 observations. The probability that a crowdfunding project will be fully funded will be determined by coefficients of the independent variables. The model specification is the following:

Likelihood of success = f(Project-specific factors, Funding period-specific factors, Founder-specific factors, Additional controls)

For loan-based-, and convertible loan-based projects, the model specification is the following:

Likelihood of success = f(Project-specific factors, Funding period-specific factors, Founder-specific factors, loan-based crowdfunding-specific factors,, Additional controls)

The logistic model uses a logistic curve which is S-shaped. Then, group membership can be determined using a cutoff value. Once the membership is predicted, a classification matrix can be created to assess predictive accuracy.

Logistic regression predicts the metric dependent variable, in which probability measures are constrained to the range between 0 and 1. However, probabilities are not constrained to this range in their normal form. Therefore, the probability measure has to be restated by expressing a probability as odds. Odds are expressed as the ratio of the probability of the two outcomes, $\text{Probability}_1 / (1\text{-Probability}_1)$. This way, the probability values are stated as metric variables which can be directly estimated. Thus, when the probability of success is 0.70, the probability of failure is 1.0 - 0.70 = 0.30. This means that the odds of success are 2.33 (0.70 / 0.30). Then, success is 2.33 more likely to happen than failure. In order to keep odds from going below 0, one can compute the logit value. The logit value can be calculated by taking the logarithm of the odds. When the predicted odds ratio is transformed back to a probability, the predicted probabilities will always fall between 0 and 1 (Hair, et al., 2014).

There are two ways to assess the goodness-of-fit for a logistic regression model. The first way it to use the "pseudo" R^2 values. The second way is to examine the predictive accuracy. The model estimation fit can be measured with the value of the log of the likelihood value times -2. This is the -2 log likelihood, or -2LL value. The lower the -2LL value, the better the model fit.

As the dependent variable is transformed, the coefficients have to be evaluated in a specific manner. In logistic regression we use the logit as the dependent measure. The value 0

corresponds to the odds of 1 or a probability of 0.50, which indicates that the probability is equal for each group. In logistic regression, the Wald statistic provides the statistical significance for each coefficient. A statistically significant logistic coefficient can be interpreted in terms of how it impacts the estimated probability.

It is possible to use either the exponentiated or original logistic coefficients for interpretation. Logistic coefficients are difficult to interpret as they are expressed in terms of logarithms. The exponentiated logistic coefficient is an antilog of the original logistic coefficient. These represent the odds ratios.

When the independent variable is a dummy variable, the odds ratios are to be interpreted as follows. For the variable 'video' the possible outcomes are 1 = a video included in the project description, and 0 = not a video included in the project description. If, for example, the odds for this variable were 1.2, than, the odds of success for a crowdfunding campaign that has a video included are 1.2 times as large as the odds of success for a crowdfunding campaign that has not a video included in the project description, controlling for the other independent variables included in the regression model.

When the independent variable is a continuous variable, the odds ratios are to be interpreted as follows. For the variable 'updates' the possible outcomes are 0 to infinity. It represents the number of updates posted by the founder during the period of the crowdfunding campaign. If, for example, the odds for this variable were 1.5, than, the odds of a successful crowdfunding campaign with one update more are 1.5 times as large as the odds of a successful crowdfunding campaign with one update less.

Especially with smaller samples, it is essential to ensuring the validation of the results. This can be done through creating a holdout sample, or validation sample, which has the objective to apply the model to a separate set of respondents in order to assess the levels of predictive accuracy (Hair, et al., 2014).

4.1.2 OLS regression

In logistic regression, a dichotomous dependent variable is used. A dichotomous dependent variable has the disadvantage that it conveys less information than a continuous dependent variable. With logistic regression, it is only possible to analyse the influence of the independent variable on whether a crowdfunding project is likely to reach its funding target. However, with logistic regression, it is not possible to analyse how close to success this is. Therefore, a metric indicator of how successful a crowdfunding project is, will also be examined. This variable is

the funding ratio (the ratio of the actual funding versus the target funding). Due to the fact that this measure is a metric variable, the method Ordinary Least Squares (OLS) will be used.

The OLS method recognizes that it is possible that there could be errors in the relationship between the dependent variable and the explanatory variables. In multiple regression, the value of a metric dependent variable is predicted by a number of metric independent variables. OLS is one of the most common techniques which is used in multivariate analysis. When the parameters are unknown and the hypothesis that needs to be tested is the relationship between the dependent variable and the explanatory variable, OLS is useful. The OLS estimate of the parameters yields the least (or minimum) sum of the squared residuals. The OLS method of minimizing the sum of squared residuals is equivalent to the maximum likelihood method. Both OLS and maximum likelihood take the structure of the model as given (linearity) and both methods will only find the parameters that satisfy the objective function. Therefore, both the OLS and the maximum likelihood method will not yield the true estimates, if the underlying model is wrong (Chumney & Simpon, 2006).

OLS regression will be used to test the effect of the independent variables. The model specification is the following:

$$Fun\_ratio_{it} = \beta_0 + \beta_1 Wordcount_{it} + \beta_2 Absc\_spel_{it} + \beta_3 Video_{it} + \beta_4 Fin\text{-}prod_{it} + \beta_5 Prov\_fin_{it} + \beta_6 Updates_{it} + \beta_7 Link_{it} + \beta_8 Experience_{it} + \beta_9 Fun\_goal_{it} + \beta_{10} Pledge\_lvl_{it} + \beta_{11} Min\_pledge_{it} + \varepsilon_{it}$$

For loan-based crowdfunding projects, there are two additional variables which are tested. The model specification for these specific projects is the following. The explanation of the variables above is shown in Table 7.

$$Fun\_ratio_{it} = \beta_0 + \beta_1 Wordcount_{it} + \beta_2 Absc\_spel_{it} + \beta_3 Video_{it} + \beta_4 Fin\text{-}prod_{it} + \beta_5 Prov\_fin_{it} + \beta_6 Updates_{it} + \beta_7 Link_{it} + \beta_8 Experience_{it} + \beta_9 Fun\_goal_{it} + \beta_{10} Pledge\_lvl_{it} + \beta_{11} Min\_pledge_{it} + \beta_{12} Int\text{-}rat_{it} + \beta_{13} Dur\_loan_{it} + \varepsilon_{it}$$

In order to evaluate the predictive accuracy of the multiple regression model, R^2, or the coefficient of determination, is commonly used. This coefficient represents the variance in de dependent variable which is explained by the independent variables. This coefficient is calculated by the squared correlation of both observed and predicted dependent values. A high coefficient of determination represents a good predictive power of the model (Panik, 2010).

The OLS regression is conducted with the dependent variable funding ratio with two specifications.

4.2 Data

4.2.1 The platform

In the Netherlands, about one hundred platforms are active in crowdfunding. Most of the platforms focus on a specific branch, region or group (Investeerders, 2017). Next to that, many platforms only provide one type of crowdfunding. For example, many platforms are pure donation-based platforms, or pure loan-based crowdfunding platforms. Loan-based crowdfunding is the most used form of crowdfunding in the Netherlands.

The data will be obtained from a Dutch crowdfunding platform. This platform is a Dutch platform which is founded in 2012 and operates in the Netherlands. The platform offers projects of all of the four crowdfunding types: donation-based projects, loan-based projects, reward-based projects and equity-based projects.

The platform uses four finance types of crowdfunding, which are donation, reward, loan and a convertible loan. Loans are used for existing companies that already generate revenue, and predict enough positive cash flows to pay interest and repayment in the future and which can provide collateral. A convertible loan is used for fast-growing companies. Often these are young companies, which means that there is no or limited revenue generated, and there aren't predictable cash flows for repayment and interest payments. As products often are still in the development stage , there are usually no business securities. Next to these two forms, The platform uses the form pre-sales, also called rewards. This method is used for founders who want to market a new product, but need a large minimum order to benefit from the sale of this product. Moreover, the investor who first get hold of the product is often benefiting from a substantial discount or interesting extras.

The platform has more than 25.000 active investors and has raised over €20.000.000 in funding. Crowdfunding campaigns financed through the platform involve established companies, startups and new projects which have a sustainable or social impact. The platform is not organized for private purposes, but rather for businesses, and has a success rate of over 70% of all projects that go live on their platform.

The equity-based projects from the platform are not pure equity-based projects. To issue shares directly, there has to be a share price known. Therefore, the company has to be valued. As this is a lengthy and difficult process, the platform chooses for another possibility, which is

the conversion of their loan into shares. The valuation of the company takes place when a professional investor buys shares of the company. The market price which is then established will be used, with a discount, for the backers to convert their loan into shares.

The equity-based projects are offered in the form of convertible loans. This is a loan which gives the backers the right to convert the loan after a period of time into share certificates of the company. During the duration of the loan, the backers are given the option to convert the outstanding loan balance plus the accrued interest into shares once. The opportunity to convert the loan into shares arises when a substantial new investor acquires a stake in the company. The platform determines the height of the minimum substantial investment amount per project. The backers can convert their loans with interest into share certificates on the same terms a negotiated by the new investor, but at a discounted share price. Backers receive this discount because they were the first to provide the founder with their money, and trust, prior to the new investor. When there is no substantial new investor attracted within the first three years of the duration of the loan, the market value of the enterprise will be determined by an independent registered accountant. Then, also, a discount will be offered to the backers. When the conversion offer takes place within one year, the backers receive 15% discount on the share price. When the conversion offer takes place after one year, the backers receive 30% discount on the share price. The first years, until the conversion offer, the backers receive interest on annual basis.

The backers have three options to convert their loan into shares. First, when a new investor invests at least €100.000 in the company. Second, when the company is sold, and a minimum of 50% of the shares are sold to another party. Third, when the first two options do not arise in the first three years, the backers receive an offer to convert their loan into shares after this period. The backers who choose to convert their loan into shares are bundled to form one legal person, which is called a Trust Foundation (in Dutch Stichting Administratiekantoor, or STAK), which is the direct shareholder in the enterprise. The STAK issues non-voting shares to the backers. The option to convert divides the loan into two stages, which are the stages before and after conversion. Before the conversion, the backers are lenders. After the conversion, the backers are, in case they converted their loans, shareholders.

The backers can choose not to convert the loan, and have the loan repaid. After the conversion, the right to convert the loan into shares expires, and the loan will be repaid until the end of the 5-year term. This repayment can take place in the form of a bullet repayment, which means that everything will be paid at once at the end of the duration of the loan, or in linear form, which is from the moment of conversion to the end of the duration of the loan.

4.2.2 The campaign

The platform discusses the crowdfunding campaign with the founder. After the required financial information is submitted by the founder, an analysis interview takes place between the platform and the founder. If approved, a project page is made for the website of the platform and a campaign plan is drafted. The legal documentation is submitted by the founder and the founder chooses the duration of the crowdfunding campaign, meaning the time when it is possible for backers to provide funds to the founder. Usually, this period lies between 1 to 3 months. Next to that, the founder chooses the amount of pledge options, so called funding buttons, and chooses the amount in euros for every button to invest, and, if applicable, the corresponding reward.

4.2.3 Projects included

In order to obtain an answer to the research question of this study, financial information of completed projects from the Dutch crowdfunding platform will be used in the analysis. Variables used are shown in Table 7. These variables will be obtained from the website of the platform.

Information about the crowdfund projects will be converted into an SPSS file in order to make the analysis. As the site is in active use, the collection of a relatively large data set with a high level of validity is facilitated by web data extraction (Kosala & Blockeel, 2000). One condition for a project to be concluded in the analysis, is that the funding period must be finished. Projects still open for funding are not included in the analysis, as these may disturb the results. Both successful and unsuccessful projects are included in the analysis. I exclude projects that are cancelled by the founder before the funding period ended.

4.3 Variables

In order to test the hypotheses, a list of variables from the website is conducted. These variables are shown in Table 7. These variables will be gathered from the website to analyse the factors influencing the success of a crowdfunding project. The finance type donation is consistent with donation-based crowdfunding, reward is consistent with reward-based crowdfunding, loan is consistent with loan-based crowdfunding and convertible loan is consistent with equity-crowdfunding. Backers can choose to convert their loan into shares or not to convert, in which case the loan is repaid.

The dependent variable is a binary variable which indicates whether the crowdfunding project has been successful or not. If the funding goal has been reached or exceeded, the crowdfunding project has been successful, and this measure of crowdfunding success is used in previous studies as well (Ahlers, et al., 2015; Dorfleitner, et al., 2016; Colombo, et al., 2015; Mitra & Gilbert, 2014; Parhankangas & Renko, 2017; Mollick, 2014). If the funding goal has not been reached, the founder will not receive the provided funds, and therefore the project has not been successful. Next to this, the dependent variable will also be tested using a continuous variable, which is the funding ratio. This is the final funding divided by the funding target.

The independent variables are divided in project-specific factors, funding-period specific factors, founder-specific factors, and loan-based crowdfunding-specific factors. These variables will test the hypotheses. Furthermore, crowdfunding projects also have general information. The funding goal, the number of pledge levels and the minimum pledge option will be used as control variables in this study.

Table 7 Explanation variables		
In tables	Variable	Description
Panel A: Dependent variables		
Success	Success	Dummy variable that takes the value of 1 if the project is successful (funding goal reached, or exceeded), otherwise it takes the value of 0
Fun_ratio	Funding ratio	Final funding divided by the funding target
Panel B: Independent variables		
Project-specific factors		
Wordcount	Length of project description (ln)	Number of words used in the project description on the crowdfunding campaign page
Abs_spel	Absence of spelling mistakes	Number of spelling mistakes in the project description
Video	Use of video	Dummy variable that takes the value of 1 if a video is included in the project description, otherwise it takes the value of 0
Fin_Prod	Finished product	Dummy variable that takes the value of 1 if a finished version of the product is available, otherwise it takes the value of 0
Prov_fin	Provision of financials	Dummy variable that takes the value of 1 if the founder has posted financial information on the crowdfunding campaign page, otherwise it takes the value of 0
Funding period-specific factors		
Updates	Updates	Number of updates posted by the founder on the crowdfunding campaign page
Founder-specific factors		
Link	Link to personal social network	Dummy variable that takes the value of 1 when the founder offers a link on the project page to his/her personal social network (Facebook or LinkedIn), otherwise it takes the value of 0
Experience	Crowdfunding experience	Dummy variable that takes the value of 1 when the founder has raised money through crowdfunding at the platform before, otherwise it takes the value of 0
Loan-based crowdfunding-specific factors		
Int_rat	Interest rate	Interest rate on the loan for loan-based crowdfunding projects
Dur_loan	Duration loan	Duration of the loan for loan-based crowdfunding projects
Panel C: Control variables		
Fun_goal	Funding goal (ln)	Amount of money the founder asks for
Pledge_lvl	Number of pledge levels	The number of available funding options
Min_pledge	Minimum pledge (ln)	The smallest pledge option of the crowdfunding project that backers can choose

5. Results

5.1 Descriptive statistics

In Table 8, the descriptive statistics of all variables are presented. This sample contains 225 finished crowdfunding projects from the platform. 79% of all the projects are successful, meaning that 79% of the crowdfunding campaigns have reached or exceeded their funding goal. This is relatively high compared to previous studies, in which 53.9% (Frydrych, et al., 2014), 50.7% (Koch & Siering, 2015), 49.4% (Mollick, 2014), 63% (Kuppuswamy & Bayus, 2015) and 41.0% (Parhankangas & Renko, 2017) of the projects are successfully funded. The minimum funding goal reached is 0%, whereas the maximum funding goal reached is 855%.

On average, project descriptions have a length of 845 words, with an average of 0.69 spelling mistakes. This is in line with previous findings, which reported an average word count of 886.54 words (Bi, et al., 2017). 90% of the founders included a video in their crowdfunding campaign, whereas 26% of the crowdfunding campaigns raised funding for an unfinished product. Previous findings also report that 90% of the projects had a video included (Frydrych, et al., 2014). Furthermore, 23% of the founders provided financials for potential backers. On average, 1.66 updates are used during the crowdfunding campaign, whereas previous findings report an average of 0.18 (Block, et al., 2017), and 2.65 (Kuppuswamy & Bayus, 2015) during the crowdfunding campaign. 14% of the founders have offered a link to their personal social network page, whereas 5% of the founders have raised capital through crowdfunding at the platform once (or more) before.

The interest rate on loan-based, and equity-based crowdfunding campaigns is 5,83% on average, whereas the average duration of the loans is 53,65 months. The average funding goal at the platform is € 70,000, which is very high. However the median is far lower, 16,000 Previous findings report average funding goals of € 9,460.61 (Block, et al., 2017), € 48,463.19 (Koch & Siering, 2015), and € 8,509.83 (Kuppuswamy & Bayus, 2015). The average number of pledge options is 7.81, whereas previous findings report an average of 7.89 pledge options (Kuppuswamy & Bayus, 2015).

In Table 9 we see the mean comparison between successful and unsuccessful projects for different crowdfunding types. Moreover, we see in what aspects the means of the successful and unsuccessful projects differ from each other. In order to test this, I use independent-samples t-tests to compare the means between the successful, and unsuccessful groups. Moreover, I

subdivide the successful, and unsuccessful groups into 5 groups, which are the four crowdfunding types, and a group with all projects included. However, these tests investigate the explanatory variables independently, therefore they do not control for effects of other variables. In order to control for the effects of determinants and controls, I will use multivariate tests later on.

In Table 9 we see that the reward-based crowdfunding project is the most offered crowdfunding type at this platform, with 109 finished projects. Hereafter, the loan-based crowdfunding projects are the most offered, which is the most popular form in the Netherlands, as mentioned in chapter 3. The crowdfunding type which is offered the least at this platform is the crowdfunding type donation. However, the other crowdfunding types do sometimes offer one donation-based pledge option, in order to attract more backers.

In model 5, which is the model with all projects included, we see that the difference in means between the successful, and unsuccessful groups is significant for the provision of financials, the updates, the link to the personal page of the founder, and the three control variables. However, these findings do not hold for the other models. For example, the difference in means of the provision of financials is only significant in the model with loan-based crowdfunding projects, and the model with all projects included. For the other crowdfunding types, the difference in means between successful, and unsuccessful projects is not significant for this factor.

Next, the difference in means of the number of updates only reports significant findings for the loan-based, and reward-based crowdfunding projects, and the overall model. Furthermore, the difference in means for the link to the personal page of the founder is only significant for the convertible loan-, and loan-based crowdfunding projects, as for the overall model. Moreover, the control variables report significant findings in the difference in means between successful, and unsuccessful projects in the overall model. However, these findings do not hold in the other models. This could be an indication that different factors are important for the different crowdfunding types. However, to be sure of this, we need to perform regression analysis. Before using these variables in a regression model, I will check first whether these variables are correlated.

Table 8 Descriptive statistics of all variables						
	N	Minimum	Maximum	Mean	Median	Std. Deviation
Panel A: Dependent variables						
Success	225	0	1	0.79	1	0.407
Fun_ratio	225	0%	855%	133.44%	114.33%	109.745%
Panel B: Independent variables						
Project-specific factors						
Wordcount	224	31	2889	884.57	802.50	437.699
Absc_spel	225	0	8	0.69	0	1.349
Video	225	0	1	0.90	1	0.304
Fin_prod	225	0	1	0.74	1	0.438
Prov_fin	225	0	1	0.23	0	0.422
Funding period-specific factor						
Updates	225	0	22	1.66	0	3.000
Founder-specific factors						
Link	225	0	1	0.14	0	0.345
Experience	225	0	1	0.05	0	0.216
Loan-, and convertible loan-based projects						
Int_rat	92	3%	8%	5.83%	6%	1.182%
Dur_loan	89	6	120	53.65	60.0	24.104
Panel C: Control variables						
Fun_goal x 1000 €	225	1	1000	70.6	16.0	129.0
Pledge_lvl	225	2	21	7.81	7	2.951
Min_pledge €	225	1	500	69.24	20	5.345

Table 9 Comparing means for successful and unsuccessful projects for different CF types

Finance type	Convertible loan			Donation			Loan			Reward			All types		
N	28			23			65			109			225		
Panel A: Dependent variable															
Success	No	Yes		No	Yes		No	Yes		No	Yes		No	Yes	
N	3	25		6	17		6	59		32	77		47	178	
Panel B: Independent variables															
Project-specific factors															
	Mean	Mean	Difference	Mean	Mean	Difference	Mean	Mean	Difference	Mean	Mean	Difference	Mean	Mean	Difference
Wordcount	1556	1180	1.236	1268	792	1.702	788	766	0.892	709	928	-2.757***	844	895	-0.585
Absc_spel	1.67	0.60	1.512	1.00	0.18	1.185	0.17	0.42	-0.741	0.72	1.01	-0.921	0.74	0.68	0.259
Video	1.00	0.92	0.492	1.00	1.00	-[a]	0.83	0.78	0.300	0.91	0.95	-0.806	0.91	0.89	0.434
Fin_prod	1.00	0.88	0.616	0.50	0.41	0.359	0.83	0.85	-0.090	0.69	0.71	-0.277	0.70	0.75	-0.704
Prov_fin	0.67	0.48	0.593	-	-	-	0.17	0.61	-2.484**	0.00	0.01	-0.643	0.06	0.28	-4.293***
Funding period-specific factor															
Updates	4.00	3.40	0.272	0.67	2.88	-1.299	0.00	1.32	-5.815***	0.41	1.73	-3.367***	0.62	1.94	-3.645***
Founder-specific factors															
Link	0.00	0.32	-3.361***	0.17	0.12	0.293	0.00	0.27	-4.646***	0.03	0.04	-0.193	0.04	0.16	-2.958***
Experience	0.00	0.08	-.492	0.00	0.06	-0.585	0.00	0.05	-0.558	0.03	0.05	-0.467	0.02	0.06	-1.273
Loan-. and convertible loan-based projects															
Int_rat	5.0%	5.7%	-0.700	-	-	-	5.5%	5.9%	-0.923	-	-	-	5%	6%	-1.131
Dur_loan	60	59	0.251	-	-	-	35	53	-1.531	-	-	-	41	55	-1.537
Panel C: Control variables															
Fun_goal x 1000 €	104.2	221.8	-1.306	17.4	11.6	0.815	47.5	138.9	-1.747*	13.6	10.6	1.506	24.2	82.8	-5.518***
Pledge_lvl	7.67	7.76	-0.085	7.67	7.53	0.101	7.00	7.85	-1.054	6.50	8.49	-2.660***	8.49	6.79	-2.737***
Min_pledge €	126	124.6	0.022	7.7	7.9	-0.106	27.2	158.3	-5.955***	34.8	16.8	1.419	36.19	77.98	-3.255***

Notes: Difference in means reported in t-statistics. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level. [a]. t cannot be computed because the standard deviations of both groups are 0

5.2 Correlation matrix

Multicollinearity is "the extent to which a variable can be explained by the other variables in the analysis. As multicollinearity increases, it complicates the interpretation of the variate because it is more difficult to ascertain the effect of any single variable, owing to their interrelationships". In the bivariate correlation, a high correlation between two variables may cause the sign for a regression coefficient to change from positive to negative, or the other way around. In the bivariate correlation, a high correlation between two variables may cause the sign for a regression coefficient to change from positive to negative, or the other way around (Hair, et al., 2014).

As the data is not normally distributed, I use Spearman correlations, which are shown in Table 10. There are a few variables which are significantly correlated with a number of other variables. These variables are Prov_fin, Updates, and Link. Moreover, the control variables ln Fun_goal, and ln Min_pledge are significantly correlated with many variables as well. As these correlations might have an influence on the results in this study, I will test for the effect of these correlated variables by both including and excluding these variables from the regression model. This way I can check for their influence. The dependent variable, whether the crowdfunding campaign is successful or not, is significantly correlated with the Prov_fin, Updates, Link, and two control variables.

These correlations do not tell us whether these factors influence the funding success, as they only investigate the independent correlations among these variables. Therefore, I will use regression models including these variables at the same time, in order to find out which factors influence the funding success, controlling for the other factors included in the regression.

5.3 Logistic regression

5.3.1 Success factors in crowdfunding

Table 11 reports the logistic regression results using the full data set. In the first model, only the control variables are included. This model is used as the baseline for making a comparison in the improvement of the model's fit when adding other variables. Hereafter, the 5 project-specific variables are included in the model separately. Model 7 represents the full model. In model 8, the variable provision of financials is excluded from the model, in model 9 the control variable log funding goal is excluded from the model, and in model 10 the control variable minimum pledge is excluded from the model.

Table 10 Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Success (1)	1.000													
Ln Wordcount (2)	0.095	1.000												
Absc_spel (3)	0.016	0.168*	1.000											
Video (4)	-0.029	0.224**	-0.004	1.000										
Fin_prod (5)	0.047	0.053	0.012	-0.132*	1.000									
Prov_fin (6)	0.204**	-0.024	-0.074	-0.302**	0.251**	1.000								
Updates (7)	0.290**	0.221**	-0.072	0.012	0.121	0.353**	1.000							
Link (8)	0.142*	0.131*	0.007	-0.035	0.118	0.454**	0.202**	1.000						
Experience (9)	0.066	0.071	0.035	-0.060	0.039	0.120	0.200**	0.149*	1.000					
Int_rat (10)	0.130	-0.052	-0.077	-0.022	0.164	0.314**	0.214*	0.251*	0.012	1.000				
Dur_loan (11)	0.134	0.315**	0.043	-0.039	0.169	0.354**	0.401**	0.101	0.302**	0.144	1.000			
ln Fun_goal (12)	0.148*	0.035	-0.008	-0.149*	0.190**	0.661**	0.186**	0.384**	0.080	0.306**	0.535**	1.000		
Pledge_lvl (13)	0.170*	0.199**	0.097	0.101	-0.062	-0.143*	0.042	0.033	0.040	-0.264*	-0.168	-0.053	1.000	
ln Min_pledge (14)	0.118	0.012	-0.075	-0.305**	0.327**	0.669**	0.251**	0.304**	0.049	0.401**	0.433**	0.543**	-0.209**	1.000

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

I did run the regression with other variables excluded from the model, however there are no variables other than provision of financials, updates, and the control variables which show a significant correlation, in whatever form I have run the regression with.

In order to assess the goodness-of-fit of the logistic regression model, I use the R^2 values, and the likelihood value. The -2LL value is the -2 log likelihood value, which can be compared to the overall F-test in multiple regression. A -2LL value of 0 corresponds to a perfect fit. Thus, the lower this value, the better the model fit (Hair, et al., 2014). In the first model, which only contains the control variables, the -2LL value is the highest of all models, meaning that including the other variables in the model leads to a better model fit. Furthermore, the Hosmer & Lemeshow test provides a comprehensive measure of the predictive accuracy that is based on the actual prediction of the dependent variable. It measures the correspondence of the predicted and actual values of the dependent variable, where a smaller difference indicates a better model fit. A high p-value indicates that the model fit is acceptable. Again the model fit is improved when adding other variables to the baseline model.

Next, the Cox & Snell R^2 is another measure for model fit, with higher values indicating a better model fit. However, this measure cannot reach the value of 1, and is therefore limited. The Nagelkerke R^2 can reach the value of 1, and will therefore have a greater value than the Cox & Snell R^2. The Nagelkerke R^2, and the Cox & Snell R^2 reflect the amount of variation accounted for by the logistic model, in which 1.0 indicates a perfect model fit. As we can see in Table 11, we see that model 7 has the best model fit, which is the model with all the variables included. Model 7 has the lowest -2LL value, the highest Cox & Snell R^2, and Nagelkerke R^2, and has an insignificant Hosmer & Lemeshow value. Model 7 can explain 19,1% (Nagelkerke R^2) of the variance in crowdfunding success, and correctly classifies 80,8% of the cases. As the Nagelkerke R^2 in this model is the highest value of all models, the logistic regression model accounts for 19,1% at best of the variation between successful and unsuccessful projects.

Logistic regression uses the Wald statistic to assess the significance of each coefficient. If the coefficient is statistically significant, it can be interpreted in terms of its impact on the estimated probability, and therefore the prediction of group membership (Hair, et al., 2014).

The value Exp(B) represents the exponentiated logistic coefficient, which reflects changes in odds. These are the reported coefficients. As exponentiated values are used, negative coefficients do not exist. As the logarithm of 0 (which is no effect) is 1.0, an exponentiated logistic coefficient of 1.0 corresponds to a relationship with no direction. When the coefficient is above 1.0, it corresponds to a positive direction. The coefficient below 1 corresponds to a negative direction (Hair et al., 2014). The impact of the exponentiated coefficients is

multiplicative, which means that the effect of the coefficient is not added to the dependent variable (the odds), but it is multiplied for each unit change in de independent variable. Therefore, an exponentiated coefficient of 1.2 denotes a 20% increase in the odds ratio when there is a one-unit change in the independent variable. An exponentiated coefficient of .80 denotes a reduction in odds of 20% for a one-unit change in the independent variable (Hair, et al., 2014).

In model 7 we see a statistical significant coefficient for the variable updates, and the control variable Log funding goal. The coefficient of the variable updates has a value of 1.268, which indicates that the odds of a successful crowdfunding campaign with 1 update more are 1.268 as large as the odds of a successful crowdfunding campaign with 1 update less. A one-unit increase in the number of updates will increase the odds of success by 26.8%. The variable updates is statistically significant in all models, with a value greater than 1, which denotes an increase in the odds ratio, controlling for the other variables.

The variable Prov_fin is statistically significant in model 10. However, in this model the control variable ln Fun_goal is excluded from the regression. In the correlation matrix, we have seen that these variables are highly correlated (0.661**), which explains the significance in this model. In model 8, the variable Prov_fin is excluded, and the variable Fun_goal is included. Here, the variable Fun_goal is not significant, meaning that the variable Prov_fin is the significant variable. The only significant finding in these models is from the variable updates, which lends support for hypothesis 2. For hypothesis 1, and 3, I do not find support in this model.

In the next two paragraphs, the success factors for the different crowdfunding types will be studied. The loan-, and convertible loan-based crowdfunding projects will be combined in one model. In this model, hypothesis 4 can be tested. Hereafter, the success factors for reward-based crowdfunding projects will be studied. The success factors for donation-based crowdfunding projects will not be studied separately, as this sample size is too small (N=23).

5.3.2 Success factors in (convertible-) loan-, and reward-based CF projects

In Table 12, we see the logistic regression results using loan-, and convertible-loan based crowdfunding projects, reducing the sample size to 88 projects in model 3, in which all variables are included. Again, the model with all variables included has the best model fit, according to the -2LL value, the Cox & Snell R^2, the Nagelkerke R^2. The Hosmer & Lemeshow value has a high p-value, indicating an acceptable model fit.

Table 11 Logistic regression results overall model funding success

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ln Wordcount		1.166					1.333	1.319	1.304	1.322
		(0.367)					(0.400)	(0.94)	(0.395)	(0.399)
Absc_spel			0.896				0.893	0.878	0.894	0.895
			(0.140)				(0.144)	(0.144)	(0.144)	(0.144)
Video				0.796			0.828	0.697	0.871	0.867
				(0.639)			(0.697)	(0.667)	(0.682)	(0.690)
Fin_prod					1.053		1.045	1.059	1.011	1.047
					(0.405)		(0.408)	(0.409)	(0.397)	(0.407)
Prov_fin						3.732	3.467		3.155	4.164*
						(0.828)	(0.84)		(0.806)	(0.765)
Updates		1.301**	1.306**	1.316**	1.310**	1.287**	1.268**	1.296**	1.264*	1.264*
		(0.124)	(0.122)	(0.124)	(0.123)	(0.120)	(0.121)	(0.123)	(0.120)	(0.120)
Link		2.189	2.210	2.217	2.196	1.783	1.747	2.199	1.730	1.832
		(0.802)	(0.799)	(0.799)	(0.799)	(0.815)	(0.824)	(0.804)	(0.823)	(0.818)
Experience		1.554	1.369	1.330	1.385	0.920	1.151	1.557	1.201	1.133
		(1.190)	(1.143)	(1.154)	(1.147)	(1.145)	(1.210)	(1.185)	(1.208)	(1.217)
Ln Fun_goal	1.321*	1.231	1.237	1.240	1.237	1.085	1.094	1.239	1.086	
	(0.146)	(0.154)	(0.153)	(0.153)	(0.153)	(0.172)	(0.176)	(0.156)	(0.175)	
Pledge_lvl	1.212***	1.175**	1.187**	1.179**	1.179**	1.184**	1.182**	1.178**	1.187**	1.186**
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.067)	(0.068)	(0.069)	(0.067)	(0.068)
Ln Min_pledge	1.124	1.055	1.060	1.048	1.057	0.973	0.954	1.024		0.962
	(0.115)	(0.115)	(0.115)	(0.120)	(0.119)	(0.125)	(0.134)	(0.126)		(0.132)
Observations	225	225	225	225	225	225	225	225	225	225
Omnibus χ^2	17.224	25.870	26.443	25.982	25.867	28.570	29.231	26.932	29.108	28.970
-2 log likelihood	213,392[a]	204,277[a]	204,173[a]	204,634[a]	204,749[a]	202,046[a]	200,915[a]	203,215[a]	201,039[a]	201,176[a]
Cox & Snell R^2	0.074	0.109	0.111	0.109	0.109	0.119	0.122	0.113	0.122	0.121
Nagelkerke R^2	0.115	0.17	0.173	0.17	0.169	0.186	0.191	0.176	0.190	0.189
Percentage correct	79.6	79.0	78.2	79.6	79.1	80.0	80.8	79.9	80.8	80.8
Hosmer & Lemeshow χ^2	16.130	9.439	5.357	5.390	0.897	8.206	6.261	5.848	7.087	5.339
p-value (H & L)	0.041	0.307	0.719	0.715	0.444	0.414	0.618	0.664	0.527	0.721

Notes: dependent variable: funding success. Coefficients are reported in exponentiated form, with standard errors in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level. [a] Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001

Table 12 Logistic regression results different CF types funding success

	Loan-, and convertible loan-based projects			Reward-based projects	
	(1)	(2)	(3)	(4)	(5)
Ln Wordcount			0.076** (1.270)		2.783* (0.662)
Absc-spel			0.498 (0.589)		1.041 (0.190)
Video			1.462 1.580)		0.681 (1.038)
Fin_prod			0.912 (1.415)		1.086 (0.557)
Prov_fin			0.401 (1.516		1147502788.0 (40192.970)
Updates			1.188 (0.263)		1.377 (0.181)
Link			233825890.5 (6851.555)		0.647 (1.309)
Experience			3653739.0 (1963.526)		1.196 (2.137)
Int_rat		1.234 (0.389)	0.971 (0.491)		
Dur_loan		1.001 (0.024)	1.038 (0.041)		
Ln Fun_goal	1.856 (0.403)	2.058 (0.533)	2.033 (0.772)	0.638 (0.290)	0.689 (0.316)
Pledge_lvl	1.442* (0.211)	1.733** (0.250)	1.999** (0.309)	1.194** (0.074)	1.137 (0.082)
Ln Min_pledge	1.349 (0.216)	1.254 (0.256)	1.441 (0.344)	0.874 (0.169)	0.765 (0.188)
Observations	93	89	88	109	109
Omnibus χ^2	8.101	11.224	22.176	10.638	23.155
-2 log likelihood	51.035a	42.581a	31.440a	121.323_a	108.806_a
Cox & Snell R^2	0.083	0.118	0.223	0.093	0.191
Nagelkerke R^2	0.177	0.261	0.488	0.132	0.273
Percentage correct	91.4	93.3	96.6	75.2	76.1
Hosmer & Lemeshow χ^2	5.580	14.727	9.069	8.900	10.339
p-value (H & L)	0.694	0.065	0.337	0.351	0.242

Notes: dependent variable: funding success. Coefficients are reported in exponentiated form, with standard errors in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level. [a]. Estimation terminated at iteration number 20 because parameter estimates changed by less than ,001

For these particular crowdfunding types (loan-, and convertible loan-based projects), the log length project description has a significant coefficient of 0.076. This value is smaller than 1, indicating a decrease in the odds ratio when there is a one-unit change in the independent variable. This association is in the opposite direction of the hypothesized direction. Furthermore, there are no other significant coefficients shown in this table for these crowdfunding types. Thus, a one-unit increase in the independent variable ln Wordcount denotes a 92.4% decrease in the odds ratio. These findings do not lend support for any of the hypotheses. Hypothesis 4 is rejected, stating that the loan-based crowdfunding-specific have a positive impact on the probabilities of funding success of a crowdfunding campaign.

In Table 12, we also see the logistic regression results using reward based crowdfunding projects, reducing the total sample size to 109 projects in model 5, in which all variables are included. Again, the model with all variables included has the best model fit, according to the -2LL value, the Cox & Snell R^2, the Nagelkerke R^2. The Hosmer & Lemeshow value is not significant, indicating an acceptable model fit. I have run the regression excluding different variables from the regression model (not reported), however this does not change the significance of any of the other variables.

Again, for this particular crowdfunding type (reward-based projects), the variable Ln Wordcount has a significant coefficient, for these projects a coefficient of 2.783*. This value is greater than 1, indicating an increase in the odds ratio when there is a one-unit change in the independent variable. Therefore, a one-unit increase in the independent variable log length project description denotes a 178.3% increase in the odds ratio. This is in accordance with the hypothesized direction of this factor, which is positive.

Spearman correlations show an insignificant correlation of -0.053 between the dependent variable funding success, and the independent variable Ln Wordcount for loan-, and convertible-loan based projects. The variable Ln Wordcount is significantly correlated with the variable Video (0.245*) (unreported). Spearman correlations show a correlation of 0.267, significant at the 0.01 level, between the dependent variable funding success, and the independent variable Ln Wordcount for reward-based projects. However, for reward-based projects, the variable Ln Wordcount is significantly related to the variables Video (0.249**), Link (0.216*), and Pledge_lvl (0.298**) (unreported).

This might be an indication that for reward-based projects a greater length of the project description is important, and a smaller length of the project description for the (convertible-) loan-based projects. However, again, the other project-specific variables do not show

significant findings. Moreover, the other independent variables do not show any statistically significant finding. These findings do not lend support for any of the hypotheses.

There are a few extremely high values in this table. This problem might be caused by the presence of a cell value equal to zero (Irala, et al., 1997). These ratios are probably due to unusual values in the data. When there is a dichotomous predictor, and the value occurs in only one case, this is possible. The variables Link, and Experience in the loan-, and convertible loan-based projects, have an empty cell. For the variable Prov_fin in the reward-based projects, there is also an empty cell.

5.4 OLS regression

Other measures used to measure success of a crowdfunding project are the actual amount of money raised, and the funding ratio. Since the platform in this research uses an all-or-nothing approach, the actual amount of funding can't be used to measure success. The campaign may gather a large amount of funds, but if the funding goal is not achieved, regardless of the amount of money that is raised. the founder will not receive any of the funds and therefore the project is unsuccessful. Therefore, the continuous dependent variable funding ratio will be used.

5.4.1 OLS regression overall model

In Table 13 we see the results of the OLS regression. OLS minimizes the errors. The adjusted R^2 value indicates how much of the variation in the dependent variable, funding ratio, can be explained by the independent variables. This value is in all models less than 0.154, meaning that the models explain less than 15.4% of the variation in the funding ratio. The F statistic is significant at the .01 level in all models, which means that the regression model is statistically significant.

This model should be interpreted different than the logistic regression models. These regression coefficients show the estimated change in the dependent variable for a unit change of the independent variable. The dependent variable is the funding ratio, which is the total funding reached divided by the funding goal. The values of these regression coefficients show the extent to which the dependent variable is associated with de independent variable (Hair, et al., 2014).

In model 2, the adjusted R^2 value is the greatest, which indicates the best model fit. The results are consistent with what has been found in the main analysis. Again, the variable

Updates shows a positive statistically significant finding in all models. However, the variable ln Wordcount shows a significant coefficient as well, which did not show a significant coefficient in the logistic regression analyses with all variables included for all projects. Moreover, in model 2, this coefficient is not significant. This could mean that the number of words does not have impact on whether the crowdfunding campaign is successful or not, but it does have impact in the degree of success. Still, this finding does not lend support for hypothesis 1, which states that all the project-specific factors have a positive impact on the probabilities of funding success of a crowdfunding campaign.

Furthermore, the variable crowdfunding experience shows statistically significant findings in all models. This variable was not statistically significant in the earlier performed logistic regressions. Crowdfunding experience matters for the funding ratio, but not for the funding success. This could also mean that the crowdfunding experience of a founder does not have impact on whether a crowdfunding campaign is successful or not, but it does have impact on the degree of success. However, this does not led support for hypothesis 3, which states that both the founder-specific factors have a positive impact on the probabilities of the funding success of a crowdfunding campaign.

5.4.2 OLS regression for specific crowdfunding types

In Table 14 we see the OLS regression results for the loan-, and convertible loan-based projects, and for reward-based projects. In model 3, and 6, all variables are included. Model 2 and 6 have the highest adjusted R^2 values.

For loan-, and convertible loan-based projects, the variables Prov-fin, and Link show a negative, and positive significant finding. The provision of financials shows a negative finding, which is the opposite direction of which was hypothesized. The link to the personal page shows a positive coefficient, which has not been found positive in the main regressions. This could mean that a link to the personal page of the founder does not have impact on whether the crowdfunding campaign is successful or not, but rather has impact in the degree of success. Both the variables Int-rat and Dur_loan do not show a significant coefficient, and therefore this table does not lend support for hypothesis 4. Therefore, hypothesis 4 is rejected.

For reward-based project, the variable updates only shows a significant coefficient in model 5. Here, the variable ln Wordcount shows a positive significant coefficient in both models. Moreover, the variable Experience shows a positive significant coefficient. None of the hypotheses are supported by these findings.

Table 13 OLS regression results overall model funding ratio

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Model 1	Wordcount		17.502					20.740*
			(1.583)					(1.745)
	Absc_spel			-1.786				-3.832
				(-0.420)				(-0.879)
	Video				-3.096			-16.672
					(-0.166)			(-0.840)
	Fin_prod					11.261		10.746
						(0.876)		(0.831)
	Prov_fin						-13.330	-15.218
							(-0.619)	(-0.686)
	Updates		4.786**	5.623**	5.590**	5.594**	5.653**	5.266**
			(2.040)	(2.438)	(2.411)	(2.437)	(2.453)	(2.208)
	Link		21.845	23.115	23.135	22.830	25.422	25.310
			(1.274)	(1.352)	(1.350)	(1.337)	(1.499)	(1.420)
	Experience		51.005**	48.124*	47.264*	46.967*	48.659*	51.559**
			(2.030)	(1.907)	(1.896)	(1.865	(1.927)	(2.033)
	Ln Fun_goal	12.458***	8.749*	9.123*	9.194**	9.063*	10.956*	10.531*
		(2.754)	(1.880)	(1.962)	(1.978)	(1.952)	(5.452)	(1.917)
	Pledge_lvl	4.754**	3.321*	3.857	3.721	3.760**	3.610*	3.508*
		(2.472)	(1.736)	(1.993)	(1.952)	(1.975)	(1.888)	(1.800)
	Ln Min_pledge	8.258**	6.022	6.305	6.176	5.506	7.511*	5.374
		(2.211)	(1.631)	(1.697)	(1.594)	(1.436)	(1.810)	(1.239)
	Observations	225	225	225	225	225	225	225
	F	10.035	6.774	6.483	6.457	6.585	6.518	4.481
	p-value (F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adjusted R^2	0.108	0.153	0.146	0.146	0.149	0.147	0.147

Notes: dependent variable: funding ratio. Coefficients are reported as unstandardized, with t statistics in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level

Table 14 OLS regression results different CF types funding ratio

	Finance type	Loan-, and convertible loan-based projects			Reward-based projects		
		(1)	(2)	(3)	(4)	(5)	(6)
Model 1	ln Wordcount		5.446	3.701		30.803**	43.030***
			(0.269)	(0.171)			(2.933)
	Absc_spel			4.884			0.200
				(0.430)			(0.047)
	Video			-14.797		-27.812	-28.705
				(3.535)		(-0.955)	(-1.011)
	Fin_prod			26.910		6.854	3.189
				(0.932)		(0.456)	(0.226)
	Prov_fin		-81.665**	-89.223***			101.053
			(-2.617)	(-2.744)			(1.382)
	Updates		6.376	6.228		5.136*	3.662
			(1.521)	(0.152)		(1.788)	(1.301)
	Link		59.920**	55.304**			-51.097
			(2.471)	(2.177)			(-1.508)
	Experience			40.579			77.806**
				(0.848)			(2.168)
	Int_rat		7.901	8.410			
			(0.888)	(0.928)			
	Dur_loan		0.031	-0.189			
			(0.066)	(-0.360)			
	Ln Fun_goal	9.829	13.058	14.371	-16.839**	-13.525	-12.250
		(0.862)	(0.911)	(0.974)	(-2.057)	(-1.643)	(-1.489)
	Pledge_lvl	9.150	12.101*	13.447**	3.388*	1.769	1.509
		(1.454)	(1.972)	(2.119)	(1.869)	(0.963)	(0.822)
	Ln Min_pledge	10.568	16.883**	17.926**	-1.875	-5.889	-6.537
		(1.470)	(2.016)	(2.061)	(-0.385)	(-1.148)	(-1.328)
	Observations	93	88	88	109	109	109
	F	1.613	2.548	1.628	2.647	2.734	3.199
	p-value (F)	0.192	0.013	0.102	0.053	0.012	0.001
	Adjusted R^2	0.020	0.138	0.118	0.044	0.101	0.183

Notes: dependent variable: funding ratio. Coefficients are reported as unstandardized, with t statistics in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level

Table 15 Correlation matrix with index variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Project-specific index (1)	1.000						
Updates (2)	0.345**	1.000					
Link (3)	0.290**	0.202**	1.000				
Experience (4)	0.092	0.200**	0.149*	1.000			
Ln Fun_goal (5)	0.309**	0.186**	0.384**	0.080	1.000		
Pledge_lvl (6)	-0.014	0.042	0.033	0.040	-0.053	1.000	
Ln Min_pledge (7)	0.363**	0.251**	0.304**	0.049	0.543**	-0.209**	1.000

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

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

5.5 Additional robustness tests

I computed a composite variable of the project specific factors in order to check for its influence. The number of spelling mistakes is recoded into a dummy variable, indicating whether there were spelling mistakes in the project description (0) or not (1). Hereafter, I combined the variables ln Wordcount, Absc_spel, Video, Fin_prod, Prov-Fin into the variable project-specific index

5.5.1 Correlation matrix index variable

In Table 15 we see Spearman correlations with the project-specific index variable. The project-specific index is significantly correlated with the variables Updates, Link, and two of the control variables.

5.5.2 Logistic & OLS regression with index variable

In Table 16 we see that the project-specific index does not show a statistically significant coefficient. These findings are consistent with the earlier findings. The variable updates does show a significant finding, again lending support for hypothesis 2.

In table 17 we see the OLS regression results with the index variable included. When the index variable is included alone with the control variables, this variable shows a significant coefficient. However, when adding the other explanatory variables, this significance disappears. This might be caused by the earlier presented correlations with the other independent variables.

The variable updates again shows a significant finding. However, the variable crowdfunding experience shows a statistically significant coefficient as well, as it did in the earlier performed OLS regression with the full model. However, this does not lend support to any of the hypotheses, as hypothesis 3 states that both the link to the personal page of the founder as the crowdfunding experience has impact on the probabilities of success of a crowdfunding campaign.

Again we see that the variable Experience is significant in the OLS regression, but not significant in the logistic regression. So this variable matters for the funding ratio, but not for whether the project is successful or not. The variable updates shows a positive significant coefficient in both the logistic regression, and the logistic regression, lending support for hypothesis 2.

Table 16 Logistic regression index project-specific factors funding success

	(1)	(2)
Project-specific idex	2.786	1.696
	(0.930)	(0.980)
Updates		1.296**
		(0.124)
Link		2.158
		(0.803)
Experience		1.465
		(1.152)
Ln Fun_goal	1.287*	1.218
	(0.149)	(0.155)
Pledge_lvl	1.207***	1.179**
	(0.067)	(0.067)
Ln Min_pledge	1.083	1.043
	(0.118)	(0.118)
Observations	225	225
-2 log likelihood	211.981[a]	204.164[a]
Omnibus $\chi 2$	18.166	25.983
Cox & Snell R^2	0.078	0.110
Nagelkerke R^2	0.121	0.171
Percentage correct	78.6	79.0
Hosmer &Lemeshow χ^2	7.759	9.946
p-value (H & L)	0.457	0.269

Notes: Dependent variable: funding success. Coefficients are reported in exponentiated form, with standard errors in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level. [a]. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Table 17 OLS regression index project-specific factors funding ratio

	(1)	(2)	(3)
Project-specific idex	55.782*	50.596*	37.926
	(1.842)	(1.675)	(1.243)
Updates			5.078**
			(2.177)
Link		21.466	21.785
		(1.233)	(1.262)
Experience		57.351**	49.291*
		(2.288)	(1.962)
ln Fun_goal	10.236**	7.900*	7.593
	(2.212)	(1.661)	(1.609)
Pledge_lvl	4.784**	4.397**	3.818**
	(2.499)	(2.320)	(2.011)
Ln Min_pledge	6.417*	5.942	5.189
	(1.672)	(1.563)	(1.371)
Observations	224	224	224
F	8.102	6.803	6.609
p-value (F)	0.000	0.000	0.000
Adjusted R^2	0.113	0.135	0.150

Notes: dependent variable: funding ratio. Coefficients are reported as unstandardized, with t statistics in parentheses. * Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level

6. Conclusions

Crowdfunding is an emerging alternative way for entrepreneurs to raise external funds. By gathering funds from a large network of people, entrepreneurs can finance their ideas, ventures, and projects. There are four types of crowdfunding, which are loan-, rewards-, equity-, and donation-based crowdfunding. They all have one goal in common, which is raising funds. Further the goals can be very diverse, for both the founders, and the backers.

In the Netherlands, crowdfunding has explosively grown. Where in 2013 there was funded € 32 million with crowdfunding, this number has increased to € 128 million in 2015, and to € 223 million in 2017. The most popular crowdfunding type in the Netherlands was loan-based crowdfunding in 2017. Of the total of €223 million in 2017, € 169 million was funded with loan-based crowdfunding projects.

Important theories in crowdfunding are the signaling theory and the information asymmetry theory. Founders can signal quality of their product or service to backers in several ways, which has been found to have a positive influence on the campaign. Moreover, founders can signal quality of themselves. Furthermore, it is of great importance for founders to reduce information asymmetries between them, and backers in order to convince them to participate in the crowdfunding campaign.

There have been numerous studies to define the funding success of a crowdfunding project. Factors influencing the funding success can be related to the project, but also the founder, the goal, the geography, the funding period, and so on. For some factors, there have been contradictory findings, like the duration of a crowdfunding campaign which was negatively or positively related to the funding success.

In this study I have used logistic, and OLS regression in order to determine whether there are factors that influence the success of a crowdfunding campaign. I have divided the independent variables in four categories, which are the project-specific, the funding period-specific, the founder-specific, and the loan-based crowdfunding-sepcific factors. I have found one variable that drives the probabilities of a successful crowdfunding campaign in the regression models with all projects were included, which is the number of updates posted by the founder on the platform. This variable belongs to the founder-specific factor. Updates represent efforts by the founder to reach out to backers, and inform them about developments in the project. Moreover, updates can reduce information asymmetry between founders, and backers, as backers can learn the product quality through interaction with the founder. At this platform, I have not found other drivers of funding success of a crowdfunding campaign.

Another finding in this study is that the variable Experience, which represents the fact whether a founder has posted a crowdfunding project on this platform before, or not, shows a positive significant correlation coefficient in the OLS regressions. This finding is not found in the logistic regressions, meaning that this factor matters for the funding ratio of a crowdfunding project, but not whether the project is successful or not.

Finally, in answer to the research question of this study, at this platform, and for this specific sample, the factor Updates on a crowdfunding campaign is a driver of the success of a campaign. This is in line with previous research. In this sample, the other variables do not seem to be drivers of successful crowdfunding campaigns, which is not in line with previous research.

7. Limitations & discussion

There are a few limitations in this study. First, due to limited data availability, I have not been able to investigate a few factors which have been found to be significantly related to the likelihood of successful funding in previous studies. The duration of the crowdfunding campaign is not known at the platform in this study, only the year and month in which the crowdfunding campaign ended (successfully or not). Previous research on crowdfunding success has found a negative association between duration and success due to legitimacy which is signalled in shorter durations (Frydrych, et al., 2014) or the fact that backers can forget the project when there is a long duration (Härkönen, 2014), and a positive association due to higher project visibility (Burtch, et al., 2013), and a higher likelihood that the contributions will add up to the amount equal or above the funding goal (Cordova, 2015). However, due to data limitations I have not examined this association.

Further, I was not able to find the size of the social network of de founder/founding team. As many prior studies have found a positive relation between the size of the social network, and the funding success (Mollick, 2014; Vismara, 2016; Colombo, et al., 2015), this factor should be included in this research as well. Next, as the platform offers convertible loans instead of pure equity-based crowdfunding projects, it is not possible to determine how much equity a founder wants to offer to the backers through crowdfunding. Prior studies have found a negative relation between the percentage of equity offered, and the funding success, due to the fact that founders will try to retain a large amount of the company when the founder is optimistic about future prospects (Ahlers, et al., 2015; Vismara, 2016). When a platform with pure equity-based crowdfunding projects was researched, I expect this factor to be of influence as well. Moreover, when projects are promoted by the platform, this might lead to different results than for projects that aren't promoted.

Next, the role of geography in crowdfunding is not included in this research, which could be an interesting topic for further research, in order to find out whether it does relax geographic constraints (Agrawal, et al., 2011; Mollick, 2014). Moreover, it might be interesting to find out whether the specific factors included in this research differ across platforms, and across industries.

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