Crowdfunding: Perceptions of Campaign Success

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Crowdfunding:

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CHAPTER 1 - Introduction

This first introductory chapter of the dissertation starts by providing the reader with a general introduction, then introduces the key terms and concepts of this thesis, followed by the problem statement. The chapter concludes by providing a summarized overview of the three empirical chapters and their contributions to the crowdfunding literature.

1.1 General Introduction

Imagine you have a wonderful idea for a socially responsible invention, innovative business model or ground-breaking brand. Full of optimism you start your desk research and succeed to involve industry professionals, who are very excited about your plans. You decide to write everything down in a business plan and set out to a bank to apply for a loan. The banker is a pleasant woman and feels for your project. Unfortunately, your idea is too innovative to accurately approximate its risk. As a result, your loan application gets denied. This happens three more times before you start to lose a bit of your excitement. When you are thinking about the best next move, you run into an old friend. She has become the creative entrepreneur that you are now aspiring to be. When you tell her about your plans, she recognises your trouble and tells you all about a relatively new and highly exciting way that ultimately helps you to get your project off the ground and into the next stage, crowdfunding.

Crowdfunding helps entrepreneurs to realise projects by facilitating financial capital that is sourced from larger numbers of individuals. Driven by the opportunities that the internet and social media bring, crowdfunding's quick rise in popularity and widespread use evoke many questions that need answering. Those who invest in crowdfunding do so differently that other investors: They generally base their decision on information provided on a single webpage and invest much smaller amounts of money. This dissertation focuses on the evaluation process of the individuals in the crowd, when they are shown a crowdfunding

campaign. This helps entrepreneurs with creating effective campaigns, and investors to predict success more accurately.

1.2 Introduction of Key Terms and Concepts

1.2.1 Entrepreneurship

Entrepreneurship has long been recognised as one of the main drivers of the economy. Before we further look into this, let's have a glance at an elegant definition of entrepreneurship that captures the essence of the construct: "Entrepreneurship is the creation, discovery and exploitation of value-adding opportunities." (Masurel, 2019. p.16; cf. Shane & Venkataraman, 2000).

Arguably, the most important part of this definition is the word value-adding. Without adding value, entrepreneurship would be a pointless endeavour. When most people think about entrepreneurship, they think about the exploitation of opportunities, selling a product or a service for money. However, even when just thinking about the exploitation of value-adding opportunities, it is not just about making money. Money is not a goal, but an instrument, which can be used to create more value; the utility which products and services provide to customers and clients, feeding the families of employees, investing in or even donating to social or environmental projects etc. Another interesting part of this definition is that entrepreneurship not only mentions the exploitation, but also the creation and discovery of value-adding opportunities. In my opinion the most striking idea of the inclusion of these two words, is that entrepreneurship is not just about exploiting, but that putting in the effort towards the discovery and creation of these opportunities is an important aspect as well. In fact, without these two steps, it would be impossible to exploit new opportunities.

As entrepreneurship is all about adding value, it fulfils an important role in our society. Entrepreneurship is the reason that we don't have to bake our own bread, keep our own cattle, cut our own hair, or build our own computer. It allows us to focus on our passion and our competences and provides us with jobs to make a living for ourselves and our families while it fosters innovation through competition.

1.2.2 Funding Gap for New and Innovative Entrepreneurs.

In order for entrepreneurs to operate, resources are required. These resources can come from a variety of origins. But not all entrepreneurs have equal access to these resources. Accessing resources may be particularly difficult when a venture is novel and innovative, and when the entrepreneur has no track record and limited endowments. As it is difficult for banks and venture capitalists to assess risks and therefore to invest in these new ventures, this creates a funding gap for the early stages of new firm development (Deffains-Crapsky & Sudolska, 2014; Ley & Weaven, 2011). One way for venture capitalists to cope with these insecurities, is to move from investing in earlier to later stages of new ventures. This makes it easier to estimate eventual success and lowers the risk of investment. A noteworthy addition is that the economic crisis of 2008 made many people lose their faith in the banking system (Jones, 2009), and as such, they started looking for alternatives for sourcing and investing finances, not merely out of necessity, but out of will.

1.2.3 Crowdfunding

At the same time, the crisis had its effect on investors. Interest rates on savings accounts plummeted and the return on investments from investments on the stock exchanges decreased significantly. This drove investors to look for other investment opportunities, while many entrepreneurs needed to look for capital beyond the regular providers. This marked an important opportunity.

The emergence of web 2.0 made it possible for people to easily create their own content on existing webpages without having to script or code in programming languages. This gave rise to the birth of crowdfunding platforms, where entrepreneurs and organisations, both called creators in this dissertation, can post their projects and ask for small investments from larger numbers of people to fund their endeavours. These creators are considered entrepreneurs in this thesis, as they are in the process of creating, discovering, and exploiting value-adding opportunities (Masurel, 2019).

1.2.4 What is Crowdfunding?

Crowdfunding is considered a new phenomenon as it involves the internet to gather capital, as can be seen from the most cited definition: “Crowdfunding is an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes” (Belleflamme, Lambert & Schwienbacher, 2010. p.5). However, the idea of gathering a large number of small amounts of money to fund a project has been around for ages. A perfect example of one of the most successful organisations in that regard is the catholic church, which has been funding its enormous projects and buildings with money from “the crowd” for about two millennia. If you’d like a showcase of their successful fundraising, there are many exhibits in almost any large western city, the pinnacles of course being Rome, Italy and the Vatican. The upcoming of the internet and web 2.0 has facilitated even easier and wider access to large numbers of people who might be willing to fund projects. An interesting example is Obama’s race for the presidency in 2008, where he used a crowdfunding campaign to collect $600m from 3 million donors to fund his campaign, marking an important moment in US politics.

The general public and scholars have increasingly developed an interest in start-ups in the last number of years. Two important reasons for this will be mentioned here. Firstly, in the last years, a number of start-ups have been performing extremely well and have grown fast into multibillion-dollar companies (Facebook, Uber, Netflix etc.). This has brought the attention of people towards these success stories and opened their eyes to the possibilities and of course the dreams of being one of the early investors in such a company, which would provide huge returns on investment. Secondly, many more traditional ways to invest smaller amounts of money involve investing in investment funds. These funds give the investors little control over their exact investments. Many of these funds are also known to invest money in less environmentally or socially responsible companies. Exactly the kind of behaviour that more and more people now actively seek to avoid, for instance by switching banks or funds or taking full control over their investments by investing in crowdfunding. Many investors like the higher level of direct contact with creators and this brings some additional benefits to creators, which will be discussed later in this chapter. What we can say now, is that the characteristics of crowdfunding have further democratised investment and entrepreneurship. Crowdfunding has given control to investors with smaller wallets, thereby moving the decision-making for which companies get funded from the few to the many.

1.2.5 Crowdfunding Statistics

Crowdfunding has been in academic spotlight for the last years (see e.g. Hoegen, Steininger & Veit, 2018) and for good reason. This paragraph provides some statistics before crowdfunding is compared to other ways of financing new ventures in the next paragraph. Ziegler, Shneor & Zang (2020) report that the worldwide crowdfunding industry has grown from $11 billion in 2013 to $419 billion in 2017, with China representing $258 billion of this grand total, the USA and Canada $44 billion and Europe $4 billion. Crowdfundingcijfers.nl is

a website that reports on the Dutch crowdfunding market and is transparent in its calculations. It gives an idea of how crowdfunding has grown over the last years. The total amount of Euros crowdfunded in the Netherlands has grown from €223m (million) in 2017 to €329m in 2018, to €424m in 2019 (www.crowdfundingcijfers.nl, last visited November 2020). The vast majority of this amount (€387m) is attributed to businesses, the other categories are social projects, creative projects and personal loans. Reward-based crowdfunding only represents a small portion (€11m) of the Dutch market, which is mostly because many established businesses have turned to crowdfunding and like the simplicity of the process. A number of big crowdfunding platforms have successfully catered to the needs of these businesses. This does not mean that reward-based crowdfunding is not a popular way to get a new venture of the ground, on the contrary. Kickstarter.com is the largest reward-based crowdfunding platform in the world, and portrays reward-based crowdfunding's popularity well; in the beginning of June 2020 this single website has already collected $5.03 billion since it was founded in 2009.

1.2.6 Crowdfunding vs Other Funding Methods

Now that it is established what crowdfunding is, similarities and differences among crowdfunding and other ways of financing new ventures must be discussed. There are a few common ways to gather funds to start a new venture (see e.g., Jones, MacPherson and Jayawarna, 2014). Bootstrapping is when entrepreneurs use their own money, and that of friends and families (and the occasional credit card), to fund their entrepreneurial endeavours in the early stages of the venture (Ebben & Johnson, 2006). The benefit is that the entrepreneur does not have to go into debt with official institutions, making failure a less formal affair. Some of the drawbacks include the high cost to the entrepreneur himself, and

the possibility of damaging good relations with friends and family. Mostly, this way of financing is not suited for larger capital needs.

Next, one of the first capital providers people traditionally think of, and a possible next step for entrepreneurs when bootstrapping funds have run out, is a bank. This is where the entrepreneur comes with a business plan and some financial results of the past (if available) and requests a loan. This request will be either denied or the entrepreneur will get a quote on the interest that has to be paid in addition to the payback of the loan. Benefits of a bank as capital provider are that it is very easy to find one and make an appointment plus interest charges can be quite affordable. Drawbacks of banks are that they estimate the risk of applications by using historical data, making it impossible to estimate the risk of very new ideas. This can lead to high levels of rejection for these types of ideas. In other words, banks prefer low-risk investments. Lastly, there is the drawback of monthly payments.

Moreover, business angels are another group of capital providers. They are typically private investors with a personal interest in a business. Benefits are that these individuals have deep pockets and extensive networks, which they will often use to help a venture. Their investment of personal funds often means entrepreneurs can count on their help. Business angels are also often interested in acquiring equity, meaning no monthly payments to worry about, however this involves losing some ownership and therefore control over the new venture. Another drawback of business angels is that the right one can be hard to find and to convince to invest.

The last on our list of most mentioned traditional ways of financing is venture capitalists (VCs). These organisations look for companies that are in the earlier stages of growth and invest large sums of money in a number of organisations, the return on investment of the successful investments more than makes up for the other underperforming investments. Venture capitalists invest large amounts at once, or in a number of tiers to

decrease their risk. These large investments are often paired with strict contractual agreements on the control of the venture, often entrepreneurs have to give away some of their control, but a VC's investment can be a quick way to realise (sustainable) growth. VCs are generally mostly interested in organisations that have some proof of viability.

Other ways of financing start-ups such as grants and subsidies (see e.g. Hottenrott & Richstein, 2020) are available as well. However, the methods mentioned before are the most used and documented in the literature, which is why they are the focus in this introduction.

Jones, MacPherson and Jayawarna (2014) place these types of funding on two different axes. The first axis represents the level of investment risk assumed by investors. As touched upon before, banks score low in this regard, VC a little higher, business angels, even higher, and bootstrapping scores highest, which makes sense, when investors perceive the risk too high, entrepreneurs have to fund themselves. The other axis represents the stage of development of the entrepreneurial firm. This axis is clearly not independent from the other axis. The earlier the stage of the firm, the higher the risk, this is also reflected by when which form of funding is mostly used. The earlier the stage, the higher the risk, as a proven track record will lower the risk for investors. Crowdfunding is a very interesting addition to this picture. While the risk of early-stage firms that ask for crowdfunding can be considered relatively high, there are some benefits to crowdfunding's inherent characteristics. First of all, because investors can invest very small amounts of money, losing it, isn't as bad as with bigger investments. Then, most crowdfunding platforms only fund campaigns when the monetary goal has been reached. This means that many people have to believe and support an idea before it will be realised. This gives a venture a good chance of success. In other words, the bad ideas and projects do not reach funding, and the good ones are validated by a large crowd of people. Concerning the axis for the developmental stage of the entrepreneurial firm:

Crowdfunding can be used from the very early stage, essentially extending the friends and family group, up to early growth and even established stages.

For creators (here: Organisations or individuals who create crowdfunding campaigns), crowdfunding is different from more traditional ways of financing on two main points. First of all, where the other ways of financing come from one known person or organisation (or maybe a few), in crowdfunding, the capital is sourced from the crowd. The crowd is a large and heterogeneous group of people that is mostly unknown to the creator. This immediately brings us to the second point, communication. The request for funds in crowdfunding is not made with personal interaction; how could someone personally interact with such a large number of potential investors? Especially when considering that many people invest small amounts of money, this would be a highly inefficient strategy. Therefore, requests for crowdfunding are made on crowdfunding platforms, which are websites where people can post their ideas, request funding and define the rewards to the investing crowd; the obvious benefit being that it doesn't matter much if some people decide not to invest, as many more people still can. This increases the chances of being funded, especially for creators with more radically new business plans. As investors can invest small amounts of money, their risk per project is not that high, which makes them more prone to give creators a shot, when they like their project, even when not too sure about the outcome. This option to invest a small amount also gives investors with smaller wallets an unprecedented opportunity to spread risk over a diversified portfolio, while still having complete control over the money invested.

1.2.7 Additional Benefits of Crowdfunding

As crowdfunding is all about direct communication from the creator to the crowd, it brings some additional benefits over other ways of financing. One of the most mentioned benefits of crowdfunding is the exposure that it provides a new organisation (e.g., Gerber & Hui, 2013).

This causes crowdfunding to often be used as a marketing tool. As most platforms provide the options of updates from creators and comments from (possible) investors, a community can form around a crowdfunding campaign, and such a community can have significant positive effects for the new venture in later stages of their development. Other interesting benefits from crowdfunding include networking possibilities, higher chances of approval for follow-up investments from for instance banks, business angels and VCs, and higher levels of control over repayment of investors (Gerber & Hui, 2013). One very special benefit that is exclusive to reward-based crowdfunding is the pre-sale of products. The pre-sale of products decreases risk immensely for creators who are selling physical products. Instead of having to estimate the demand of a product and then borrowing money for producing and storing it until they hopefully sell, they have established demand and even received the money prior to production. This mechanism helps creators to get their venture off the ground and grow it into a larger organisation. Next to reward-based crowdfunding, various other types of crowdfunding can be distinguished (De Buysere et al., 2012).

1.2.8 Types of Crowdfunding

Crowdfunding is often distinguished into multiple forms, based on their repayment system; reward-based, equity-based, and loan-based crowdfunding (De Buysere et al., 2012). Often, donation-based crowdfunding is also mentioned, but this falls under charity, which I am not concerned with here. Two of these forms of crowdfunding provide the investor with financial returns for their support. Equity-based crowdfunding involves selling equity to the crowd and loan-based crowdfunding involves taking on debt. The same pros and cons as with financing from non-crowdfunding methods apply here: creators that use equity-based crowdfunding, give up some ownership of the organisation, but do not have to pay monthly repayments and

interest. For loan-based crowdfunding, creators pay monthly instalments, but full ownership of the firm is kept.

This dissertation is focused on reward-based crowdfunding, because it has a very specific set of benefits to the creators. It is therefore important to distinguish this form of crowdfunding from other forms of crowdfunding. Funders of reward-based crowdfunding have mainly non-financial motivations. This makes reward-based crowdfunding different from equity-based and loan-based crowdfunding, where funders expect a share of the creators' organization or interest on the financial support they provide respectively. Repayment of debt can take many years and selling equity of your organization may even last forever. Rewards in reward-based crowdfunding are in principle non-financial. These non-financial rewards have different values to different people. Think about a piece of clothing. One person may love it, the next might hate it. This difference in perception and value makes it highly interesting to creators, who can generally offer rewards at a (much) lower cost than it is valued by the funder. For example, fans may pay thousands of dollars to have their names engraved in a chair in a theater, while the act of engraving may only cost a small fraction of this amount. Rewards can even be virtual, such as a special item in a video game, which increases the difference in cost to produce and value to the crowd even further. Concluding, reward-based crowdfunding can be an affordable way of funding an organization.

But there are more benefits to reward-based crowdfunding. Many creators presell items on their crowdfunding page. This means items have not yet been produced at the moment of sale. This helps the creators by eliminating a huge amount of risk, because not only has demand been established, but the finances are also already available before goods are manufactured. Moreover, when rewards are in line with what the creators are aiming to

provide after the crowdfunding campaign, an initial customer or even fan base, might have been established.

Reward-based crowdfunding is not always an option, and neither are other sources of capital, in those cases, equity-based and loan-based crowdfunding are great alternatives, especially considering that benefits of crowdfunding in general of course still apply.

Not all crowdfunding projects and platforms strictly fall under one type of crowdfunding, combinations are possible (i.e. a project can offer rewards and equity). In addition to these types of crowdfunding other related types of financing exist. For example, peer-to-peer lending and micro financing (Beaulieu & Sarker, 2015), with the latter focusing on smaller projects in developing countries. It is notoriously difficult to control these investments when the money has been transferred, increasing risk for investors.

1.3 Problem Statement

In this part of the dissertation, firstly an overview of current literature on decision making in crowdfunding is provided. Then, gaps of existing research are discussed, which lead to the research questions. Lastly, the contributions of each chapter of the dissertation is presented.

1.3.1 Decision-making in Crowdfunding

Just as with other types of investments, crowdfunders deal with high levels of information asymmetry and uncertainty of the venture's development, when they decide whether to support a crowdfunding project (Ahlers, Cumming, Günther & Schweizer., 2015; Hoegen et al., 2018; Ley and Weaven, 2011). These asymmetries lead to a classical principal-agent relationship, where founders (agents) try to convince investors (principals) of their capabilities and good intentions (Arthurs and Busenitz 2003), while the investors estimate the trustworthiness of the founders (Norton 1995). As investors have only limited information

available, they use proxies and other evaluative models to inform their choices (Moritz, Block & Lutz, 2015). As such, many factors are taken into account such as project duration and funding goal (Cordova, Dolci & Gianfrate, 2015), as well as contextual clues (Hoegen, Steininger & Veit, 2018), these include aspects that a 'homo economicus' ignores (Thaler 2000).

In their review of the crowdfunding decision-making literature, Hoegen et al. (2018) compare crowdfunding to traditional ways of financing decision-making. They discuss how venture capitalists and business angels base their decisions on the product or service, market characteristics, team composition and the financials, with the notion that cognitive factors like intuition are under-researched. Bank loans are traditionally evaluated by the "5 C's": Capacity, conditions, capital, collateral, and character (Beaulieu 1996; Bruns et al. 2008). Hoegen et al. (2018) compared purchasing decisions to crowdfunding, reward-based crowdfunding in particular. Although difficult to compare, the decision-making for these types of online behaviour could be comparable if "the pre-ordering of products in development for a discounted price without any guarantee of delivery and without refunds in case of failure to deliver" (Hoegen et al., 2018 p.342). Still some elements of the decision-making process in reward-based crowdfunding are missing, such as the drive to participate in a successful project, or the motivation to support a project that one wants to see realised. However, considering the online purchase decision-making literature, which has been well researched, is very informative. Many factors are of influence on the online purchase decisions: Characteristics of the buyer, the merchant, the media and the product as well as environmental and social influences (Cheung, Chan & Limayem. 2005; Darley, Blankson & Luethge, 2010; Engel et al. 1995). Most important in the decision-making process are generally the characteristics of the product, such as high perceived quality (Tsiotsou, 2006).

1.3.2 Gaps in Crowdfunding Research

As crowdfunding grew in popularity with practitioners, so it did with scholars. The fact that Google Scholar finds over 100.000 hits for the keyword crowdfunding illustrates the popularity of the topic well. One of the most prominent topics in crowdfunding research has been indicators for a successful crowdfunding campaign, where scholars generally aim to find clues on crowdfunding campaigns that predict whether it will be successfully funded. This is an interesting domain with direct value for entrepreneurs. The most used technique for this topic is crawling (automatically harvesting) data from existing crowdfunding pages and modelling for the success of the campaign. The gathering of primary data has only been done by a minority of researchers (Hoegen et al., 2018). The easy availability of failed campaigns is a unique characteristic of crowdfunding that is interesting to all entrepreneurship scholars. Outside of crowdfunding, finding examples of entrepreneurs or new ventures that have failed can be a difficult task. Failed entrepreneurs and enterprises can be hard to find, and people might not be willing to talk about their unsuccessful endeavours, explaining why a large proportion of entrepreneurship focuses on successful entrepreneurs and ventures. This form of selection bias is further specified as survivorship bias.

Building a model that predicts the eventual success of a campaign by using web-crawled data is very interesting and valuable, but it doesn't explain what exactly affects the judgment of the individuals in the crowd. For example, factors beyond those visible on the campaign may influence the results. Successful campaigns could have been better (or more heavily) marketed by their teams, leading more people to visit their page for example, this could make a campaign successful while another campaign with a more positive average judgement but with less visitors in total, has failed. Entrepreneurs in general, and especially those just starting, benefit from spending their precious resources efficiently and effectively. In order to do so, it is of the utmost importance to evoke positive evaluations from those

people from the crowd that are interested in the campaign. It is therefore important to ask: What makes the crowd think a campaign will succeed? Hoegen et al. (2018) present a literature review of studies related to decision-making in crowdfunding, they classify influences on crowdfunding decision-making in 6 categories (with further sub-categories): Benefits and quality, financial risks and campaign statistics, founder perception and attributes, social relationships and endorsements, context and lastly, investor characteristics. A number of interesting and relevant factors will be discussed here (for the full overview, please refer to Hoegen et al., 2018).

The benefits and quality category refers to the general quality of the value that is provided by the products and services (Hobbs, Grigore & Molesworth, 2016). Product descriptions and prototypes are used to estimate the quality of products when more direct access to information is absent (Galuszka and Bystrov 2014). The perceived process quality is another important factor and includes the quality of the campaign and pitch, which are both instrumental to successfully raising funds (Greiner and Wang 2010; Hobbs et al. 2016). As investors have to be convinced of the founders' abilities, well prepared campaigns signal high invested effort and overall process quality (Mollick 2014). Preventable mistakes such as spelling errors negatively influence funding results on the funding (Mollick 2014). Larger amounts of available information (Zheng et al. 2014) and pitch videos (Mollick, 2014) are useful to investors and therefore also add to the overall process quality. Founder perception and attributes relate to how the founders and their characteristics are perceived, factors of influence include the size of the team, their education and beauty, their sympathy and trustworthiness (Ahlers et al. 2015; Belleflamme et al. 2014; Duarte & Siegel, 2012; Gonzalez & Loureiro 2014; Herzenstein, Sonenshein & Dholakia et al. 2011a; Moritz et al. 2015) and previous successful campaigns (Yum, Lee, & Chae, 2012; He et al. 2016). The social relationships and endorsements category is concerned with how social capital of the

founders and their relationships with investors affect the decisions of investors (Ahlers et al. 2015; Colombo, Franzoni & Rossi-Lamastra, 2015; Jian & Shin 2015; Lin, Prabhala & Viswanathan. 2013; Liu et al. 2015; Zheng et al. 2014). Social dynamics is an interesting and reasonably well researched part of this and shed lights on matters like herding behaviour. Herding behaviour is a phenomenon where investors are positively influenced in their investment decision by larger numbers of people who have already invested (Agrawal et al. 2015; Burtch et al. 2013; Choy and Schlagwein 2016; Cordova et al. 2015; Herzenstein et al. 2011b; Hobbs et al. 2016; Lee and Lee 2012; Luo and Lin 2013; Thies, Wessel & Benlian, 2014). Sometimes one can use the 'wisdom of the crowd' deliberately to cope with information asymmetry, this is called rational herding behaviour. However, irrational herding behaviour also happens, when the behaviour of others becomes more important than clear and hard information from the campaign itself (Mollick and Nanda 2015; Yum et al. 2012; Zhang and Liu 2012). The behaviour of a single influential person or friends can also impact the decision-making of investors just as third-party endorsements (Agrawal et al. 2016; Burtch, Ghose & Wattal. 2014; Luo & Lin 2013).

The majority of factors mentioned above are not focused on the decision-making process, but use campaign success as a proxy for investor decisions. While the effect of psychological and cognitive factors has been well recognised in more traditional funding methods, merely a few crowdfunding studies are concerned with individual decision processes and investment motivations. Moreover, cognitive factors are often neglected and only few articles have roots in psychology (Hoegen et al., 2018). Early studies in (charitable) crowdfunding support that cognitive factors are of high relevance (Choy and Schlagwein 2016) and that positive affective features of photographs promote success (Genevsky & Knutson, 2015). When decision makers face limited information to base their decisions on, they rely on the use of heuristics, or mental shortcuts (Simon, 1957; Gigerenzer &

Gaissmaier, 2011; Tversky and Kahneman 1974). Heuristics aid in decision-making by reducing the amount of effort spent on the decision, they can lead to biased and flawed, but also to accurate decisions (Kahneman, 2011). For crowdfunding, these factors have not yet been sufficiently empirically tested. The higher difficulty of researching these matters, probably plays an important role in this (Hoegen et al., 2018). After all, scraping data from the web is much more convenient than working with people.

1.3.3 Research Questions

In addition to previously mentioned neglected factors, the current lack of hard (empirically collected quantitative) data is an important limitation for crowdfunding literature. Additional reliable empirical studies have to be conducted to allow for aggregation and further analysis and ultimately determine which factors are important to decision-making in crowdfunding.

To address the current gaps in the growing body of crowdfunding research from the previous paragraph, mainly the lack of work on the decision-making process, the following main research question has been formulated: "*Which factors influence the judgment of the crowd when assessing the success of crowdfunding campaigns?"*

The answer does not only provide more insight in crowdfunding to scholars, it can also help creators to make informed decisions when they create their crowdfunding campaigns. By pinpointing exactly which aspects influence positive campaign judgments, the answer increases their chances of being successfully funded, and realising their projects to grow their organisations. Similarly, crowdfunding platforms or consultants can use the information to inform and educate creators and increase their chances of success. In addition to the positivity of judgments from the crowd, the dissertation also considers the accuracy of predictions of campaign success. For investors, it is useful to know which aspects give them an accurate picture of how well a campaign will perform, before it has ended.

A note on accuracy and positivity. When respondents were asked if they thought campaigns were successful in reaching the monetary target, they could give one out of two answers: Yes (positive) and no (negative). This is what constitutes the positivity variable throughout this dissertation. As campaigns were real life campaigns, they were actually either successful or not successful in reaching this target. When respondents' answers were equal to the actual result, this is called accurate. When their answers were not equal to the actual result, this is called inaccurate. More specifically: When respondents gave a positive answer to a campaign that was actually successful, this is called accurate. When respondents gave a negative answer to a campaign that was actually not successful, this is called accurate. When respondents gave a positive answer to a campaign that was actually not successful, this is called inaccurate. When respondents gave a negative answer to a campaign that was actually successful, this is called inaccurate. This is what constitutes the accuracy variable throughout this dissertation.

In order to find an answer to this main question, it is divided in three sub-questions. Each question represents the research question of the corresponding empirical chapters of this dissertation:

1. *What is the effect of assessment time on the accuracy and positivity of crowdfunding campaign success evaluations?*
2. *What is the effect of having watched a pitch video on the accuracy and positivity of crowdfunding campaign success evaluations?*
3. *What is the effect of the attention to the different aspects of crowdfunding campaigns on the accuracy and positivity of crowdfunding campaign success evaluations?*

As can be seen in the sub-questions, the dependent variables are further specified (i.e., crowdfunding campaign success evaluations), following the reasoning from the previous

paragraph. As for the independent variables, I take three distinct approaches. First, by creating different conditions for participants, the effect of how long people are exposed to a crowdfunding campaign is researched over two studies. Second, participants were exposed to different types of information – static screenshots, the pitch video, and both – to determine what their effect is. Finally, an eye tracker was utilised to map what people look at when they evaluate crowdfunding campaigns, and how this relates to their evaluations.

In the next paragraph, I introduce the respective chapters, and briefly outline their contribution to the literature.

1.4 Contributions of the Three Empirical Chapters to the Crowdfunding Literature

This section of the thesis is dedicated to explaining how each chapter contributes to the crowdfunding literature, it is therefore a useful way to navigate the entire thesis. Table 1.1 provides a quick overview.

To answer the research question and find out what influences the judgment of the crowd when it assesses the success of crowdfunding campaigns, three studies have been designed. During these studies I asked participants to evaluate a crowdfunding campaign and answer a number of questions. In the studies I created different conditions to see how they affected the judgment of the crowd. Because of the unique characteristics of reward-based crowdfunding and its benefits to entrepreneurs and organisations, as discussed earlier in this chapter, this type of crowdfunding was chosen to study.

Kickstarter campaigns were used as the platform is the most well-known crowdfunding platform in the world, it has the most completed projects (including successful and unsuccessful) of any crowdfunding platform. Because reward-based crowdfunding is used, a different approach than for crowdfunding with financial rewards is necessary; merely asking whether people would invest was not useful. Contrary to equity-based and loan-based

crowdfunding where every dollar represents the same value, for some people a certain reward might be worth more than for someone else, depending on their personal preferences. For instance, one person might be willing to spend $100 for a concert ticket, while another might not even go if the concert was free. To mitigate this, a different question was formulated and asked to the participants: “Do you think this crowdfunding campaign was successfully funded?” This provided two dependent variables: The positivity of their evaluation and the accuracy of their evaluation. In total, 432 participants were involved in this dissertation, leading to 3526 observations and 15 crowdfunding experts were interviewed. In addition, crowdfunding professionals and enthusiasts were consulted; multiple crowdfunding consultants, creators who had successfully used crowdfunding as a way of gathering funds, and individuals from the crowd who had funded many crowdfunding campaigns gave input in the process of designing each study. They e.g., confirmed that the procedure of evaluating the campaigns was close to how they did so themselves, indicating that ecological validity was on par (Grégoire, Binder & Rauch, 2019). Ecological validity reflects if an experiment is representative of what happens in everyday life (Grégoire, Binder & Rauch, 2019), it is concerned with the ability to generalize findings to a specific context or population Highhouse (2009).

The studies are predominantly quantitative in nature, as this allowed to gather large amounts of data, and existing literature provided guidance for designing the three studies, although the field of research is still relatively new.

As will be discussed in more detail in the chapters themselves, a variety of different approaches has been employed for the sampling of participants. In the first study, experienced crowdfunders were contacted through a crowdfunding consultancy firm, as this was the most efficient way to reach this target group. Over the other chapters, university students and

MTurkers – people from an organisation, who do a task for a fee – were used. Please refer to Table 1.1 for an overview of the chapters and their characteristics.

Table 1.1 Chapters and Characteristics

	Chapter 2	Chapter 3	Chapter 4
Title	Predictions of Crowdfunding Campaign Success: The Influence of First Impressions on Accuracy and Positivity	The Effect of Pitch Videos on Evaluations of Crowdfunding Success	The Role of Attention in Reward-Based Crowdfunding: An Eye Tracking Study
Research Question	*What is the effect of assessment time on the accuracy and positivity of crowdfunding campaign success evaluations?*	*What is the effect of having watched a pitch video on the accuracy and positivity of crowdfunding campaign success evaluations?*	*What is the effect of the attention on the aspects of crowdfunding campaigns on the accuracy and positivity of crowdfunding campaign success evaluations?*
Methodology	2 studies, online experiments	Online experiment	Mixed method observational eye tracking study
Campaign sample	Study 1: 48 creative, 48 technology Study 2: 90 technology	62 technology	10 technology
Participant sample	Study 1: 8 experienced crowdfunders, 8 laymen Study 2: 184 students	209 MTurkers	21 students
Analytical approach	Generalised linear mixed model	Generalised linear mixed model	Qualitative: Heat maps, gaze maps. Quantitative: Binary logistic regression
Contributions toward literature	Crowdfunding, category diagnosticity theory, thin slices	Crowdfunding, information diagnosticity theory, multimedia learning	Crowdfunding, eye tracking,
Practical implications for	Creators, investors, crowdfunding platforms	Creators, investors, crowdfunding platforms	Creators, investors, crowdfunding platforms

Chapter 2 aims to establish whether the crowd's prediction of the success of crowdfunding campaigns based on short assessments are as positive and as accurate as those derived from longer assessments. A two-study replication design is used, in which individuals estimate the

success of crowdfunding campaigns in two conditions: With limited and unlimited time. The results show that prediction accuracy in both conditions is equal, yet longer assessment times result in assessments that are more positive; people who view a page for a longer time give more positive evaluations. The use of different conditions facilitates a clear understanding of the causality. It seems that placing content that keeps the crowd on a campaign for an extended period of time could be a highly effective strategy for increasing campaign efficiency. Chapter 2 provides contributions to the existing bodies of literature on category diagnosticity theory, thin slices, and crowdfunding. The two studies have been designed to find the effect of extremely short versus longer evaluations of crowdfunding campaign success predictions. According to category diagnosticity theory, negative cues tend to be more diagnostic compared to positive cues. However, the theory does not stipulate whether this leads to more or less negative judgements under conditions of information processing constraint or abundance. Our research clarifies that shorter assessments lead to more negative judgements. Studies on thin slices have reported on the accuracy of immediate, mostly inter-personal, judgements. Our research reveals that people are able, above chance levels, to accurately judge crowdfunding campaign success in a similar fashion, from a very brief time frame and based on limited information. The results also show that more thorough investigative efforts do not add to predictive accuracy compared to judgements based on first impressions, thereby contradicting that decision accuracy is inversely related to decision speed. Thus, another contribution of this study is that it adds to the weight of the evidence that system 2 does not necessarily outperform system 1 in evaluation and judgement tasks (see e.g. Kahneman, 2011).

Chapter 3 aims to establish how the crowd predicts the success of crowdfunding campaigns with different amounts or types of information, specifically focusing on the effect of having watched the campaign pitch video. Individuals estimate the success of

crowdfunding campaigns under three different conditions: Having been shown a screenshot of the campaign, the pitch video of the campaign, or a combination of both. The results show that the combined condition leads to campaigns being assessed more positively, but not more accurately, than conditions of the screenshot and the video campaign alone. The study contributes to the literature by being one of the first to investigate the effects of the viewing behaviour of the crowd and showing that actually watching a pitch video increases the positivity of the crowd in their evaluations of crowdfunding success. I show how media richness theory, information diagnosticity theory, cue summation theory, multimedia learning theory and cognitive load theory work in a crowdfunding setting.

In Chapter 4, an eye tracking machine is used to investigate how people view and assess the quality of crowdfunding campaigns. The data from the eye tracker is analysed in various ways: First, heat maps are generated and analysed qualitatively. Then, total fixation durations on areas of interest are measured to get a comprehensive overview of how much attention each aspect of a crowdfunding campaign gains. Finally, the total fixation durations per area of interest are used to predict the positivity and accuracy of participants' evaluations. Our qualitative analysis shows that most of the crowd's attention is focused on the upper parts of campaigns (those parts visible before scrolling down). Our quantitative analyses show significantly higher durations for the text and image parts of the campaign contents for positive predictions. Lower fixation durations on the creator and higher fixation durations on images are associated with more accurate evaluations. This study contributes to the literature by increasing our understanding of cognitive processes in crowdfunding and thereby helps creators to increase the perceived quality of their campaigns.

CHAPTER 2 - Predictions of Crowdfunding Campaign Success: The Influence of First Impressions on Accuracy and Positivity

Previous versions of this chapter:

Schraven, E., van Burg, E., van Gelderen, M., & Masurel, E. (2020). Predictions of Crowdfunding Campaign Success: The Influence of First Impressions on Accuracy and Positivity. *Journal of Risk and Financial Management*, *13*(12), 331. https://www.mdpi.com/1911-8074/13/12/331

Schraven, E., & van Gelderen, M. (2016). Predicting Crowdfunding Campaign Success on the Basis of First Impressions (Summary). *Frontiers of Entrepreneurship Research*, *36*(1), 11. https://digitalcollections.babson.edu/digital/collection/ferpapers/id/466/

Schraven, E., & van Gelderen, M. (2017). Predicting Crowdfunding Campaign Success From First Impressions. In *ICSB World Conference Proceedings* (pp. 1-6). International Council for Small Business (ICSB). https://icsb2017.org/wp-content/uploads/2017/06/Author-Guide-by-Date.pdf

Abstract

Crowdfunding has quickly gained popularity in recent years, providing an additional way for entrepreneurial individuals and organizations (creators) to attract funds for their projects. Scholars have been interested in predicting the success of crowdfunding campaigns, by relating campaign characteristics to the actual success of these campaigns. We take one step back by studying the cognitive processes of the crowd. This chapter uses an experimental approach to establish whether participants' predictions on the success of crowdfunding campaigns based on first impressions are as positive and as accurate as those derived from more thorough analyses. We employ a two-study replication design, in which individuals estimate the success of crowdfunding campaigns in two conditions: with limited time and with unlimited time. The results show that prediction accuracy in both conditions is equal, yet shorter time availability results in assessments that are more negative. We discuss implications for creators and for funders.

2.1 Introduction

The landscape of entrepreneurial finance has undergone some drastic changes in recent years and has welcomed a number of new financing forms into the arena (Block et al. 2018a). One of these forms is crowdfunding. Mollick (2014, p. 2) defined crowdfunding as "the efforts by entrepreneurial individuals and groups—cultural, social, and for-profit—to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries". Crowdfunding enables enterprising individuals and organizations to raise money from large numbers of small-scale funders to finance their new product, service, project or venture. Those seeking funding advertise their ideas on crowdfunding platforms—that is, websites that provide a single webpage enabling founders to explain ideas and entice potential investors to make an

investment. A financial target is set for the amount to be raised, as well as one or more rewards or repayment methods. Throughout this chapter, crowdfunding individuals and organizations jointly are referred to as creators (or founders).

By definition, crowdfunding involves a large number of potential funders being approached, rather than a single professional bank manager or venture capitalist. The crowd thus does not consist of just professional investors; research has shown that funders vary greatly in terms of their expertise and motivation to fund (Allison et al. 2015; Cholakova and Clarysse 2015; Gerber et al. 2012). Moreover, the decision process of funders is likely to differ from that of professionals as the amounts involved are relatively small. As a consequence, funders may rely more on first impressions and heuristics compared to a decision where more is at stake.

The reliance on first impressions and heuristics is furthered by the enormous supply of crowdfunding projects. Funders are able to view thousands of projects on hundreds of platforms asking for their funds, which entails significant information overload. On the other hand, funders have limited information to consider before making the decision to fund a campaign. They usually lack information obtained via personal interaction, as is common in traditional ways of financing new ventures. Both information overload and information scarcity prevent consideration of all relevant information and thus promote the reliance on heuristics.

Those seeking funding face the challenge of standing out among a multitude of other campaigns and ensuring that viewers' favorable heuristics are activated so that they arrive at a positive assessment of the project's benefits and success. There are fewer possibilities to signal quality and professionalism than there are in traditional ways of attracting capital, where personal interaction between investors and entrepreneurs normally occurs (Mollick 2014). Therefore, for those who seek funding it is important to understand the specifics of the

factors and processes that make some crowdfunding campaigns more convincing and persuasive than others. Therefore, it is not surprising that one of the most researched topics within the crowdfunding literature concerns the identification of characteristics of campaigns that are indicative of their success. The vast majority of extant literature has focused on predicting the actual success of crowdfunding campaigns, often based on web-crawled data (e.g., Mollick 2014; Greenberg et al. 2013; Ullah and Zhou 2020).

We take one step back and add to this literature by taking the deliberations of the crowd into account. Given the likelihood that funders will give most proposals only limited attention, we want to know how this affects their judgements. Specifically, we focus on positivity and accuracy in relation to first impressions of crowdfunding campaigns.

The question of positivity is particularly relevant for those seeking funding. Studying people's assessments of crowdfunding success and its antecedents is important as this assessment represents an important step towards making an actual investment. Indications of the perceived likelihood of crowdfunding campaign success are linked to individual decisions to fund (Genevsky et al. 2017). For creators, it affects how the campaign could be successfully designed: if people make more positive predictions when their assessment is based on first impressions, creators should prioritize optimization of the features that cause funders to form these positive first impressions. On the other hand, if first impressions lead to more negative assessments, funding seekers should give priority to avoiding negative cues, stimulate funders to carefully study all provided information, and provide extensive and detailed information that may counteract an initial negative first impression.

The question of *accuracy* is particularly relevant for funders. Even though they get their money back if the financial goal is not met, experiencing the realization of a successful project is one of the crowd's main reasons for contributing to crowdfunding campaigns

(Hemer 2011). For funders it is of interest to know whether they can trust their initial judgement or should analyze campaigns extensively, before they pledge their money.

The issues addressed above lead to the following research question: *What is the effect of assessment time on the positivity and accuracy of crowdfunding campaign success evaluations?* In answering our research question, we are guided by Simon's (1972) notions of heuristics and bounded rationality, and by the distinction of Stanovich and West (2000) between system 1 (fast, automatic, unconscious) and system 2 (slow, conscious, deliberate, effortful) processing (see Kahneman 2011). In answering our research question pertaining to positivity, we particularly base our reasoning on category diagnosticity theory (Skowronski and Carlston 1989). With regard to our research question pertaining to accuracy, our reasoning is particularly informed by the literature on thin slices (Ambady 2010).

We employ an experimental two-study replication design in which participants predict the success of crowdfunding campaigns either in a condition where they base their judgement on first impressions or in a condition where they use more time and information to arrive at their assessment. Both studies also show that judgements based on quick impressions are equally accurate compared to when more time is available, and more information is processed. In study 2 the crowd evaluates the campaigns less positively when assessments are based on short assessments compared to longer investigations. In study 2, the assessment time of the short condition was significantly decreased compared to study 1, creating a more significant difference between the short and long duration conditions

This chapter adds to the crowdfunding literature by taking the deliberations of the crowd into account. In particular, we demonstrate that impressions based on limited processing time are less positive, but equally accurate, compared to those decisions where more time is taken to study the campaign. Moreover, our study contributes to the literature on decision-making. First, we test an unexplored aspect of heuristic-based judgements by

evaluating whether such judgements tend to be more positive or negative. The research evidence has so far been circumstantial, and we provide conceptual arguments and a direct test pertaining to this question. Second, with regard to accuracy there is disagreement in the literature (to be discussed below) as some evidence shows that decisions based on first impressions are flawed and inferior compared to those based on more thorough analyses, while others have found the opposite. Our study contributes by explicitly focusing on these puzzling findings as reported in the literature and finds support for the second position.

2.2 Literature

2.2.1 Crowdfunding Demand and Supply

For people and organizations with ideas for new products, services, or projects it can be difficult to obtain financial resources, particularly if the venture is novel and creative, and the founder has no track record and limited endowments. It is difficult for banks and venture capitalists to assess risks and therefore to invest in these new ventures, creating a funding gap for the early stages of new firm development (Ley and Weaven 2011). Aggravating this problem, the worldwide financial crisis of 2008 has caused banks to tighten their policies. Therefore, enterprising individuals have started looking for new opportunities to attract financial capital. This has facilitated the fast growth of the alternative finance markets, including microfinance, peer-to-peer lending, invoice trading, and crowdfunding (Block et al. 2018b; Bruton et al. 2015; Ante et al. 2018).

The large growth of social networking sites and applications, combined with the possibilities of Web 2.0, has facilitated the rise of crowdfunding. Through crowdfunding platforms, the creator can reach a large pool of potential funders. Another advantage of crowdfunding is the lack of formal rules, providing even those with limited access to

mainstream finance channels with a chance to realize their ideas. Furthermore, Kuppuswammy and Roth (2016) found evidence that successful crowdfunding has a positive effect on the creator receiving additional financing. Moreover, crowdfunding campaigns provide valuable information about demand for the product, service, or project, and can serve as a low-cost marketing tool (Mollick 2014; Miglo 2020; Bernardino and Santos 2020). In addition, investors in crowdfunding campaigns have the opportunity to invest small amounts of money. This lowers the entry barrier to investing and allows investors to have a diversified portfolio, even when they possess limited resources. On the platform, the funder can select from a large pool of projects.

Several forms of crowdfunding exist, such as donation-based, reward-based, loan-based, and equity-based crowdfunding (Mollick 2014). This chapter investigates predictions of the success of crowdfunding campaigns using reward-based crowdfunding, which is one of the most common forms of crowdfunding and provides valuable advantages over other ways of financing a venture. Here, campaigns make use of non-financial rewards in return for funders' financial support, such as pre-sale of products, vouchers (for instance, free menus in a newly opened restaurant), tickets to performances, and recognition (such as one's name on the seat of a newly built theatre). As opposed to debt-based and equity-based crowdfunding, in reward-based crowdfunding, the creator does not pay interest rates on loaned money and does not give away control or ownership of his/her organization in the form of shares. As reward-based crowdfunding often uses the presale of eventual products as a reward to the customer, it establishes demand for a product or service before production or delivery is commenced. It often takes the form of financial bootstrapping, where founders are financed by advance payments that funders give in exchange for the subsequent delivery of a product or service (Block et al. 2018a).

Crowdfunding is relevant to the research field of risk and financial management. Procurement of funds for the enterprise is part of financial management. Crowdfunding helps to reduce a number of risks for creators. Firstly, by borrowing from a crowd of funders, in comparison to bank loans based on collateral, creators do not risk losing their collateral. Secondly, as crowdfunding campaigns do not only generate financial funding but also valuable information about demand for the product or service, it reduces demand uncertainty (Miglo 2020). Thirdly, as reward-based platforms such as Kickstarter delete failed campaigns, the risks of a failed campaign is limited, as there is restricted reputation risk. In short, reward-based crowdfunding is a form of crowdfunding that can significantly lower the risk for the creator (Schwienbacher 2018). Reward-based crowdfunding also poses limited risks for investors. It is true that investors risk that the creator will not deliver the rewards. However, not only is the amount to be invested limited, the risk is being shared by many other small investors, and the money is only transferred if the campaign meets the financial goal.

One of the most researched topics within the crowdfunding literature concerns the characteristics of campaigns that are indicative of their success. Studies of the characteristics of crowdfunding campaigns and their relation to campaign success have typically considered web-crawled data to predict the actual success of campaigns (e.g., Mollick 2014; Greenberg et al. 2013). This study instead turns towards the funders and focuses on the crowd's prediction positivity and accuracy. We are interested in characteristics that make funders believe the campaign will be successful. Creators want to create their campaigns in such a way that funders arrive at a positive assessment; conversely, funders want to participate in projects that are ultimately successful (Hemer 2011). Therefore, for funders it is important to establish the characteristics that are connected to prediction accuracy. Ultimately, the

positivity and the accuracy of predictions of crowdfunding campaigns are correlated: if many funders believe the campaign will be successful, it will turn out to be so.

As explained above, funders can potentially choose from thousands of projects, and each of these projects presents information on their crowdfunding page. Some funders will study just a few projects extensively, but others will browse through a variety of projects to see whether there is a venture they wish to support. Even among those who are invited by someone in their network to support a project, some will study the project thoroughly whereas others will do so only briefly. Particularly for those who give projects only limited attention, the notions of heuristics and bounded rationality are relevant (Simon 1957). When there is limited time to process information, not all information can be considered. Decision makers deal with processing constraints by being selective in what they devote attention to (Simon 1957). This selective processing of information relies on the use of heuristics, or mental shortcuts (Simon 1957; Gigerenzer and Gaissmaier 2011). Heuristics aid in decision-making by reducing the amount of effort spent on the decision. Shah and Oppenheimer (2008) proposed that this reduction happens by examining fewer cues, reducing effort spent retrieving cues, simplifying the weight of cues, integrating less information, and examining fewer alternatives.

When making fast decisions by relying on heuristics, individuals depend more on what Stanovich and West (2000) referred to as system 1, and less on system 2. According to dual-process theories of judgements and decision-making (Chaiken and Trope 1999), information processing and the formation of judgements takes place in two systems (Stanovich and West 2000; Kahneman 2011). In system 1, processing is swift, automatic, unconscious, immediate, and effortless. Bargh and Chartrand (1999) argued that a very large portion of everyday life is determined by this first information processing system. On the other hand, system 2 processing takes effort, and is slow, deliberate and conscious. This

enables individuals to analyze information attentively (Dane and Pratt 2007). Humans' capacity to consciously process new information is severely limited, and humans therefore seek to minimize conscious cognitive effort by resorting to automatic processing of information whenever possible. Only a very small percentage of decisions are processed deliberately. The two systems interact and complement each other, and both systems are capable of accuracy and of errors (Frese 2007).

Each system assigns a value to a decision, independent of the other, on the basis of its own method of evaluation. Thus, the final output that drives decisions is a combination of the evaluations of the two systems (Mukherjee 2010). The less time there is to process information, the less system 2 can play a role. These ideas are well accepted in the research domain of the psychology of advertising, where dual processes logic is ubiquitous. For example, Fennis and Stroebe (2010) discern pre-attentive analysis, focal attention, comprehension, and elaborative reasoning, and conclude that automatic, non-conscious processing is more influential during pre-attentive analysis and during focal attention, whereas reflective, conscious processes play an important role during comprehension and evaluation. Against the backdrop of systems 1 and 2, bounded rationality and the use of heuristics, we will now develop our hypotheses as to the positivity and accuracy of predictions of crowdfunding success when there is limited versus unlimited time to process information.

2.2.2 Processing Time and Positivity of Predictions

The first issue of the research question we investigate is how depth of processing is associated with the positivity of assessments. Are funders, who can choose out of hundreds or thousands of projects, equally positive when they extensively study these projects, compared to when they make up their mind immediately? For a crowdfunding campaign to be effective,

the crowd has to reach a positive judgement. In answering our question, we first turn to the notion of negativity bias. There is extensive research evidence that individuals give greater value, importance, and weight to negative events, objects, and personal traits (Rozin and Royzman 2001). The greater general potency of negative events is at the core of prospect theory (Kahneman and Tversky 1979). In decision-making, potential costs are more influential than potential gains, a phenomenon referred to as loss aversion (Kahneman and Tversky 1979), which is logical from an evolutionary perspective (Baumeister et al. 2001). A person who ignores the possibility of a positive outcome may later experience significant regret at having missed an opportunity for pleasure or advancement, but no immediate harm is likely to result. In contrast, a person who ignores a threat even once may lose everything. Survival requires urgent attention to possible negative outcomes, but there is less urgency with regard to positive ones.

For our study, the relevant question is whether people arrive at more negative or more positive assessments when they have limited versus unlimited opportunities for information processing. We argue that people arrive at more negative judgements when they have limited time to process information. At the physiological level, research shows that negative stimuli have greater influence on neural responses compared to positive stimuli (Ito et al. 1998). This extends to the unconscious, with negative information being taken into account even if it is not consciously processed; and to the phenomenon of automatic vigilance, which refers to the direction of attentional capacity to negative stimuli outside of the perceiver's intention or control (Pratto and John 1991). The rapid detection of negative information has been confirmed in several empirical studies (e.g., Hansen and Hansen 1988; Oehman et al. 2001).

In the context of crowdfunding campaigns, it should be noted that cues are not inherently positive or negative. Therefore, category diagnosticity theory (Skowronski and Carlston 1989) is particularly relevant to our arguments. In the category diagnosticity model,

as in the evaluation of crowdfunding campaigns, the informativeness of a cue fundamentally relies on people's implicit theories about the relations between cues and categories. However, once beliefs are formed about what constitutes a negative or positive cue, negative cues are generally perceived as more diagnostic than are moderate or positive cues. Skowronski and Carlston (1989) proposed that negative cues are more diagnostic than positive ones because the category requirements of consistency are more stringent for good than for bad cues. To be categorized as good, one has to be good all of the time (consistently). To be categorized as bad, a few bad acts are sufficient, and presumably hardly anyone is consistently bad. The relative power of negative contamination is embedded in an age-old Russian adage: "A spoonful of tar can spoil a barrel of honey, but a spoonful of honey does nothing for a barrel of tar." Hence, negative cues carry more weight for ruling out a positive assessment compared to positive cues for ruling out a negative assessment. Similarly, those making hiring decisions use unfavorable information as a basis for rejecting candidates to a greater extent than they use favorable information as a basis for hiring them (Baumeister et al. 2001), and consumers predominantly rely on negative information when using online reviews (Park and Nicolau 2015).

However, the effects of negativity bias can be superseded by other goals, although these goals are unlikely to completely eliminate these effects. When perceivers can determine what information is made available to them (as in interviews), the goal to be accurate can make them less biased in seeking negative information and to form less negatively biased impressions, even when they have negative expectancies about the target (Neuberg 1989). Negativity bias applies to both system 1 and system 2. However, with less time to process information, a focus on negative cues is involuntary. With more time to process information, individuals can consciously decide to seek counterevidence and to override initial negative

impressions (Neuberg 1989). Without such efforts, negativity bias dominates. Hence, we posit:

Hypothesis 1: Predictions of the success of crowdfunding campaigns based on short duration assessments are more negative than predictions based on more lengthy investigations.

2.2.3 Processing Time and Accuracy of Predictions

A classic notion in dual-process theories is that the reduction of effort trades off against accuracy (Bogacz et al. 2010; Wickelgren 1977). Kahneman (2011) presents numerous studies with many collaborators, showing that the judgements produced by system 1 are prone to a wide range of errors. System 1 cognitive processing uses associative memory to generate a coherent story to explain the judgement, and in doing so is subject to biases pertaining to areas such as availability and representativeness. It is also subject to confirmation bias, as first impressions influence subsequent judgements (Mynatt et al. 1977; Nickerson 1998; Oswald and Grosjean 2004; Rabin and Schrag 1999). People tend to use new data to confirm, rather than challenge existing beliefs. When there is limited time to process information, individuals rely more on heuristics based on system 1 processing, so one would expect biased and therefore less accurate predictions.

However, other streams of research have reported on the accuracy of immediate judgements. The literature on "thin slices" revolves around the idea that people can make relatively accurate judgements based on small pieces—or thin slices—of information (Ambady and Rosenthal, 1992). Most of the research in this area has been concerned with interpersonal judgements, and Ambady et al. (2006) reported that very brief observations can serve as a basis for consistently accurate assessments of personality traits, motivations, trustworthiness and affect. Thin-slice methodologies have also been applied to demonstrate the importance of first impressions in the evaluation of websites (Kim and Fesenmaier 2008;

Lindgaard et al. 2006; Peracchio and Luna, 2006). For example, Kim and Fesenmaier (2008) showed that people arrive at quick and correct judgements of how informative, usable, credible, inspirational, involved and interactive a website is. According to the capacity principle (Dijksterhuis and Nordgren 2006), the unconscious mind is able to process much larger amounts of information compared to the conscious mind, the latter often uses only a subset of information, leading to subpar decision-making. This corresponds to the findings of Wilson and Schooler (1991), who showed that an analysis of reasons may stress the importance of non-optimal criteria, causing people to base their decisions on these criteria.

We expect that even when a crowd bases their judgements on first impressions, the crowd is able to predict the success of campaigns with equal accuracy compared to when a longer time is taken to study the provided information. Conceptually, both first impressions and elaborate assessments can lead to accurate predictions; the empirical literature described above has shown the merits of both but has not conclusively supported the superiority of one over the other. Hence, we posit:

Hypothesis 2: Predictions of the success of crowdfunding campaigns based on short duration assessments are as accurate as predictions based on more lengthy investigations.

2. 3 Study 1

2.3.1 Research Design

This chapter used an experimental design to determine whether the predictions of crowdfunding campaign success based on short versus longer duration assessments differ in terms of positivity and accuracy. As is increasingly common and expected in the social sciences (Miller and Bamberger 2016), we test our hypotheses in two separate studies. Here, we introduce the first study. Participants (raters) were asked to estimate the success of a

selection of crowdfunding campaigns, for which the outcomes were not shown (half of the selected projects were in fact successful in reaching their monetary goal, while the other half were not). To study the importance of first impressions, two conditions were created: the "long" condition gave the participants minimum, but no maximum, limits on time and information used to provide an assessment; the "short" condition capped participants' time and information so that they had to rely on first impressions. As a research assistant was directly observing the participant, no attention test was deemed necessary.

2.3.2 Crowdfunding Campaign Sample

A sample of 96 crowdfunding campaigns was taken from Kickstarter. Half of the selected campaigns had been successful, half unsuccessful. The reason why we chose this US reward-based crowdfunding platform is its representativeness; it is the largest crowdfunding platform in the world in terms of numbers of projects and funders (Mollick 2014). Kickstarter uses a reward-based system, which means people are rewarded for their financial support in one or more non-financial manners. Often-used rewards are the pre-sale of products, services, vouchers, tickets to performances, thank-you notes, and meet-and-greets with the project team. Kickstarter uses a threshold pledge system, meaning the money from investors is first pledged to the project, and only when the threshold (that is, the monetary goal of the campaign) is reached are the funds actually transferred to the project.

As the crowdfunding campaigns used in our study had already ended, their pages showed whether the projects were successful. Therefore, manipulated screenshots were created, showing everything a Kickstarter project page displays while the campaign is active, with a few exceptions. Namely, the amount of money already raised was left out, and the number of comments left by the public was also omitted because Kickstarter only allows people who have invested in the project to leave a comment. Finally, the number of updates

was omitted as it correlates with the success of campaigns (Block et al. 2018b). Thus, the raters were shown the campaign as if it was first launched.

As Kickstarter does not display past unsuccessful projects, a website named Kicktraq, which has crawled data available on Kickstarter projects, was used to find these failed attempts. At the time we selected suitable crowdfunding projects, the success rate on Kickstarter was about 40% (Kickstarter Stats 2015). Participants were not informed of the base rate of Kickstarter projects or sample base rates (50% successful), in order to make sure that the raters' impressions would not be led by base rate expectations.

To increase the generalizability of our findings, we compared the respondents' predictions in two sectors: the technology sector and the creative sector. Whereas the former sector is simply the "technology" project category on Kickstarter, the latter is composed of the following categories: art, comics, crafts, dance, design, fashion, film and video, food, music, photography, publishing, and theatre. Both sectors are well represented on the platform. Half of the selected campaigns came from the technology sector, half from the creative sector.

As further controls for the effects of the experimental conditions, a number of characteristics were taken from the project pages as they may also impact the positivity and accuracy of predictions by the participants, and therefore were taken to serve as control variables. These characteristics included the presence of a video pitch, the monetary goal, the number of rewards, whether the creator was portrayed as an individual or an organization, the number of projects the creator had started on Kickstarter before the project in question, and how many projects the creator had funded on Kickstarter. In order to prevent effects arising from the skewness of the distribution of monetary aims, the monetary goal was categorized into five groups. Table 2.1 shows an overview of the campaign characteristics of this study (first column).

Table 2.1 Crowdfunding Campaign Descriptives

		Study 1 (N = 96)		Study 2 (N = 90)	
		N	%	N	%
Creator	Individual	53	55.2	52	57.8
	Organization	43	44.8	38	42.2
Video	Yes	78	81.3	67	74.4
	No	18	18.8	23	25.6
Goal ($)	0–10,000	40	41.7	43	47.8
	10,001–50,000	37	38.2	32	35.6
	50,001–100,000	14	14.6	7	7.8
	100,001–250,000	5	5.2	7	7.8
	>250,000	0	0	1	1.1
Sector	Technology	48	50.0	90	100
	Creative	48	50.0	0	0

	Range	M	SD	Range	M	SD
Projects Created	0–32	.81	3.36	0–10	1.08	1.96
Projects Funded	0–75	4.93	10.76	0–47	3.69	7.77
Rewards	1–31	9.30	5.45	1–62	8.63	7.38

2.3.2 Participant Sampling

Study 1 employed a sample of 16 participants, who each judged 24 campaigns. All participants have a good understanding of the English language and are familiar with the concept of crowdfunding. Participants varied in age between 21 and 57, with 14 men and 2 women. As experience may affect the positivity and accuracy of predictions, we equally sampled people who had not previously invested in a crowdfunding campaign, and a group of experienced crowdfunders. The first group of eight was recruited through the network of a research assistant; the second group was contacted through a “shout-out” on Twitter by the

owner of the largest crowdfunding consultancy agency in The Netherlands (Douw & Koren). The eight members of this second group had invested in between 10 and 75 crowdfunding campaigns (36 on average). All participants received a small reward.

2.3.4 Short and Long Duration Conditions, and Procedure

The participants were provided with instructions explaining that screenshots of crowdfunding campaigns would be shown and that their task was to predict whether the financial goal of the campaign would be reached. In the short duration condition, which captured first impressions, the participants watched the first 20 seconds of a pitch video, after which they studied the project's website (screenshot) for a maximum of 1 min. In the long duration condition, the participants saw the entire video and took as long as they wanted to study the website. Subsequently, the participants predicted whether the project was successful in reaching its monetary target with this specific campaign. The mean time for the short condition was 56 s, and for the long condition 160 s—a significant difference ($t = 9.99$, $p < 0.001$).

In sum, of the total of 96 crowdfunding campaigns, each of the 16 participants assessed 24 campaigns, equally divided over successful versus unsuccessful, technology sector versus creative sector, and short condition versus long condition, resulting in 384 observations.

At the end of the experiment, each experienced crowdfunder was interviewed. During these interviews they confirmed that the research setting was comparable to how they would normally evaluate crowdfunding campaigns, indicating that ecological validity in that regard was on par (Grégoire, Binder & Rauch, 2019).

2.3.5 Analyses and Results

The correlations between key variables of study 1 are shown (bottom left) in Table 2.2. We see that both positivity and accuracy show a number of significant correlations. It is striking to see that experience is not related to any other variable.

Table 2.2 Bivariate Correlations Matrix (Study 1 Bottom Left & Study 2 Top Right)

	1	2	3	4	5	6	7	8	9	10	11
1 Creator	-	-0.31**	-0.11**	-0.11**	-0.09**	-0.23**	-0.01	-0.24**	-0.17**	-0.03	-
2 Pitch Video	-0.33**	-	-0.04	-0.19**	-0.12**	-0.22**	-0.00	-0.32*	-0.06*	-0.05	-
3 Projects Created	-0.08	-0.04	-	-0.60**	-0.07**	-0.08**	-0.03	-0.42**	-0.08**	-0.07*	-
4 Projects Backed	-0.11*	-0.07	-0.06	-	-0.05	-0.12**	-0.04	-0.43**	-0.07**	-0.04	-
5 Goal	-0.27**	-0.28**	-0.15**	-0.02	-	- 0.06*	0.00	-0.11**	-0.04	-0.02	-
6 Rewards	-0.24**	-0.29**	-0.36**	-0.12*	-0.00	-	-0.03	-0.36**	-0.014**	-0.06*	-
7 Condition	-0.00	-0.00	-0.00	-0.28**	-0.00	-0.00	-	-0.02	-0.11**	-0.03	-
8 Actual Success	-0.15**	-0.27**	-0.11*	-0.28**	-0.17**	-0.35**	-0.01	-	0.15**	-0.07*	-
9 Prediction	-0.22**	-0.12*	-0.05	-0.11*	-0.02	-0.20**	-0.05	-0.24**	-	-0.03	-
10 Accuracy	-0.00	-0.09	-0.00	-0.08	-0.12*	-0.02	-0.02	-0.12*	-0.01	-	-
11 Experience	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.00	-0.06	-0.04	-
12 Sector	-0.23**	-0.05	-0.10	-0.04	-0.29**	-0.16**	-0.01	-0.00	-0.19**	-0.09	-0.00

* p < .05; ** p < .01; Categorical Variables: Creator: Organisation = 0, Individual = 1; Video: Present =1; Accuracy: Accurate = 1; Actual Success: Success =1; Positivity: Positive =1; Condition: Short = 0, Long =1; Experience: Experience =1; Sector: Tech = 0, Creative =1.

In order to reveal whether short assessments and more lengthy analyses differ in terms of positivity, we employed a generalized linear mixed model (GLMM). We used a GLMM because we had to include random effects corresponding to the different groups of participants. As can be seen in Table 2.3, only creator and rewards proved to be significant (with significance values lower than 0.05). Thus, the time condition has no influence on positivity, and Hypothesis 1 is not supported.

Table 2.3 Generalised Linear Mixed Model (Study 1, N=384)

	Positivity				Accuracy			
	Coefficient	*S.E.*	*T*	*Sig.*	*Coefficient*	*S.E.*	*T*	*Sig.*
Intercept	-1.17	1.99	-0.59	0.56	0.76	1.97	.38	0.70
Creator	0.79	0.26	3.01	0.00	-0.49	0.25	1.94	0.05
Video	-0.20	0.35	0.57	0.57	-0.70	0.34	-2.04	0.43
Projects Created	-0.03	0.04	-0.69	0.49	0.04	0.04	0.97	0.34
Projects Funded	0.01	0.01	1.20	0.23	-0.01	0.01	-1.30	0.20
Goal ($)								
100,001–250,000	-0.63	0.58	-1.09	0.28	0.62	0.55	1.14	0.26
50,001–100,000	-0.30	0.40	-0.76	0.45	1.50	0.41	3.64	0.00
10,001–50,000	-0.20	0.31	-0.67	0.51	0.77	0.29	2.62	0.01
0–$10,000	0[a]				0[a]			
Rewards	0.07	0.03	2.59	0.01	-0.00	0.03	-0.04	0.97
Condition	-0.21	0.22	-0.97	0.33	0.08	0.22	0.37	0.71

Probability distribution: Binomial. Link function: Logit. [a] = Redundant

Moving to the accuracy of the predictions in the short and long conditions, when people are given just a minute (screenshot) and 20 s (video) to assess a crowdfunding campaign, they predict success with a 62% accuracy rate. A non-parametric binomial test shows that this rate is significantly higher than expected by chance (P = 0.5), z = 3.24, p = 0.0001. Using the

same test reveals that when the participants are provided with unlimited time to study the website, the accuracy rate is 61% and above chance levels (P = 0.5), z = 2.96, p = 0.0001.

The results show that the time condition did not have a significant effect on accuracy. Only the creator and two goal variables did, with significance values lower than 0.05 (see Table 3). These results support Hypothesis 2.

One explanation for our failure to confirm Hypothesis 1 may be that the time frame for the short condition was not short enough, making the conditions too similar in terms of information processing. In our next study, therefore, we shortened the time frame for the short condition.

2.4 Study 2

2.4.1 Research Design

In study 2 we expected both hypotheses to be supported if the limitations associated with the short condition were made stricter. Note that, in this study, the assessment in the long and short time conditions does not apply to the same projects, further increasing robustness, see e.g. Grégoire, Binder & Rauch, (2019), (in the first study the same projects were assessed both in the long and short time conditions). Nevertheless, we expected more negative predictions if the short condition allowed less time and provided less information. Furthermore, as neither experience nor sector (technological/creative) turned out to have an impact in study 1, we did not include these distinctions in the design of study 2. Another factor that may influence the results is that we had a limited number of participants judging a variety of campaigns in study 1. We therefore increased the number of participants in study 2.

We sampled a new set of 90 projects, all of them in the technology category, half of which were successful and the other half unsuccessful. The same procedures applied as for study 1.

2.4.2 Participant Sampling

A sample of 184 third-year Bachelor students of a Dutch university (Vrije Universiteit Amsterdam) participated in the study. These students' ages were in the range 18–26, 20.2 on average, and 42% were female. They were aware of the concept of crowdfunding but had very limited experience with actually funding projects. In return for participating in the study, the students were awarded with official credits, which they needed to receive to obtain their Bachelor's degree. After starting with 209 participants and discarding 25 who did not finish the survey or failed the attention test (in which participants were asked to put a slider to 70, this number was randomly chosen), the sample consisted of 184 participants.

2.4.3 Short and Long Duration Conditions, and Procedure

The study was digitized using a survey program. First, the experiment was explained to the participants on-screen, after which they entered demographic information and started the experiment. The students were presented with a number of crowdfunding projects, which were randomly selected from the sample. These were then randomly assigned to one out of two conditions: short duration (capturing short assessments) or long duration (facilitating more lengthy analysis). To assess whether participants were able to predict crowdfunding success from short time frames, in the short duration condition just the first 10 seconds of a pitch video were shown, and participants were then allowed to browse an edited screenshot of the campaign for 10 s. In the long duration condition, it was mandatory to inspect the video and the screenshot for a minimum of 60 s each, with no maximum time limit. If the pitch video was shorter than 1 minute, the minimum amount of time to be spent was the length of

the video. The mean time for the short condition was 26.9 s (this includes idle time before and after playing the 10 s video snippet before continuing to the screenshot), the mean time for the long condition was 173.9 s—a highly significant difference ($t = 32.02$, $p < 0.001$). After this, the participants selected either "yes" or "no", depending on whether they thought the project was going to be successful in reaching its monetary target. After completing five assessments, students were presented with an attention test. After this, as long as the timer for the total time of the survey was under 19 min, the students were presented with another project. This procedure eventually resulted in 1355 observations, of which 697 belonged to the short condition and 658 to the long condition.

2.4.4 Analyses and Findings

Table 2.2 (now top right) shows the correlations between the key variables of study 2. Again, we see that both positivity and accuracy show a number of significant correlations with a range of other variables. As in study 1, a GLMM was used to investigate the effect of the condition on the positivity of the prediction, because we had to include random effects corresponding to the different groups of raters. As can be seen in Table 2.4, the participants were more positive when creators were portrayed as organizations, and when participating in the long condition, thereby supporting H1. The number of rewards also had a positive effect on the positivity of the prediction, as did the number of Kickstarter projects the creator had previously run, all with significance values lower than 0.05.

Table 2.4 Generalised Linear Mixed Model (Study 2, N=1334)

	Positivity				Accuracy			
	Coefficient	*S.E.*	*t*	*Sig.*	*Coefficient*	*S.E.*	*t*	*Sig.*
Intercept	-0.55	1.94	-0.28	0.78	0.32	1.97	0.16	0.87
Creator	0.78	0.19	4.09	0.00	-0.29	0.20	-1.42	0.16
Video	0.21	0.22	0.95	0.34	-0.19	0.23	-0.81	0.42
Projects Created	0.12	0.05	2.25	0.02	0.05	0.06	0.85	0.40
Projects Funded	-0.01	0.01	-0.42	0.67	0.00	0.02	0.10	0.92
Goal ($):								
250,000	-0.66	1.00	-0.65	0.51	0.99	1.04	0.96	0.34
100.001–250.000	0.67	0.33	2.00	0.05	-0.31	0.35	-0.88	0.38
50.001–100.000	0.30	0.35	0.88	0.38	0.06	0.36	0.16	0.88
10.001–50.000	0.24	0.19	1.26	0.21	0.31	0.21	1.49	0.14
0–10.000	0[a]				0[a]			
Rewards	0.04	0.01	2.48	0.01	0.01	0.01	0.90	0.37
Condition	-0.53	0.12	-4.48	0.00	-0.17	0.18	-1.43	0.15

Probability distribution: Binomial. Link function: Logit. [a] = Redundant

Regarding the accuracy of the predictions, in the long condition participants were able to correctly predict the success of campaigns with an accuracy of 59%. In the short condition, where participants were allowed to watch the projects and videos for a mere 10 seconds each, they still achieved an accuracy rate of 56%. To investigate the effect of the different time conditions on the accuracy of the crowd's estimations of campaign success, we again use a GLMM (see Table 2.4). The results show that the time condition has no significant influence on accuracy. Therefore, the results support Hypothesis 2. No other variables are found to influence prediction accuracy (no significance values lower than 0.05).

2.5 Discussion and Conclusion

First, our study assesses whether judgements based on short assessments tend to be more or less positive than those based on investigations that are longer. In study 1, we found no difference between these two conditions, leading us to reduce the time and information provided in the short condition. In study 2, the condition was found to have a significant effect, with campaigns being given fewer positive assessments when they were judged in the short duration condition. This pattern supports our reasoning that the shorter the time allowed to consider information, the more individuals have to rely on heuristics. As a result, the negativity bias will have a larger impact as there is less time to reconsider the initial predominance of negative cues.

Our findings stand in contrast to the idea that individuals arrive at more negative evaluations when they have more processing time, as a consequence of automatic vigilance bringing negative cues into awareness (Pratto and John 1991). Although automatic vigilance may indeed do this, it does not augment the predictions' degree of negativity. According to category diagnosticity theory, negative cues tend to be more diagnostic compared to positive cues (although there are domains that serve as exceptions, see Skowronski and Carlston 1989). However, the theory does not stipulate whether this leads to more or less negative judgements under conditions of information processing constraint or abundance. Our research clarifies that shorter assessments lead to more negative judgements, which represents an initial contribution of this study.

Second, our studies show that longer investigative efforts do not add to predictive accuracy compared to judgements based on short assessments. A classic trade-off noted by decision theorists is that decision accuracy is inversely related to decision speed (Bogacz et al. 2010; Wickelgren 1977). The current study shows that this does not apply when estimating whether a crowdfunding campaign will be successful: predictions were found to be equally

accurate regardless of whether participants were given limited or ample time to study a crowdfunding website. Thus, a second contribution of our study is that it adds to the weight of the evidence that system 2 does not necessarily outperform system 1 in evaluation and judgement tasks (Kahneman and Klein 2009). According to Dane and Pratt (2007), two broad sets of factors influence the accuracy of fast judgements: task characteristics and domain knowledge. As a crowdfunding campaign contains a variety of information, and as the crowd consists of (mostly) non-experts, predicting the success of a crowdfunding campaign is a difficult task, as a wide variety of factors will affect its eventual success. Yet, even given these complexities, our study shows that taking more time to process information does not lead to better predictions. The fact that the predictions in the short time condition were more negative but not more accurate shows that these judgments are indeed negatively biased.

Our research also reveals whether people are able to predict, above chance level, the success of crowdfunding campaigns from first impressions, and to compare the accuracy of decisions when using more versus less time. We show that people are able, above chance levels, to accurately judge campaign success in a very brief time frame and based on limited information. These findings are in line with studies using thin-slice methodologies that have reported on the accuracy of immediate judgements (Ambady and Rosenthal 1992; Ambady et al. 2006). At the same time, the correct prediction rates show further room for improvement.

2.5.1 Implications for Practice

Organizations and people who want to be funded by the crowd (called creators here) compete with a vast number of other campaigns (as well as users' other spending goals) for attention and funding. Given the relatively small individual monetary amounts involved in reward-based crowdfunding, many funders may come to a decision without spending much time and effort on processing information. Our study suggests that funders are correct to do so, as their

judgements based on short assessments are just as accurate as those based on more lengthy investigations, which are more positive but not more accurate. Thus, founders would be wise to focus their energy on making a good first impression on the crowd, for example by making use of a pitch video and displaying vivid information on the project page (Gierczak and Nitze 2015). Their scarce resources may be best spent on making good first impressions in order to avoid negativity bias. Before publicly posting a campaign, asking a small group of individuals to assess the campaign, while providing them with little time to form their judgement, can be a cost-effective way to obtain information about their first impressions, and thus about the campaign's chance of success. After repairing the negative cues that occur, further resources can be devoted to providing information that turns the initially more negative assessments into positive ones. This information is also of use for crowdfunding platforms and consultants, as they can provide it to seekers of crowdfunding as a service.

2.5.2 Limitations and Future Research

This study comes with a number of limitations. First, our research focused on the initial impressions of campaigns that were depicted as if they had just been launched, leaving comments and updates out. In reality, the number of updates and comments on a crowdfunding project page correlates with the chances of campaign success (Block et al. 2018b; Colombo et al. 2015). People who have funded the campaign are allowed to make comments, and founders provide updates about campaign success. Subsequently, the crowd uses this information, together with information on the current progression towards the monetary goal and the number of people who have already invested, as a means of gathering social proof, i.e., looking at others for verification of one's thoughts or actions. Thus, founders should encourage their networks to become early contributors in order to attract later investors.

Second, in our study, judgements in the long condition were found to be more positive than those in the short condition, although they were not more accurate. The question is whether this result also holds if confirmation bias—that is, the search for cues to confirm these initial impressions—is allowed to operate (Oswald and Grosjean 2004). Future research can test this by conducting an additional experiment, in which participants are shown a campaign for a short amount of time, make an estimate, then study the same campaign for longer, and are again asked to make an estimate. In yet another variation of our design, the influence of so-called unconscious thought could also be measured. Dijksterhuis and Aarts (2003) and Dijksterhuis and Nordgren (2006) found evidence that when participants are temporarily distracted from tasks that are relatively complex and that need to be performed relatively quickly, they perform better compared to those who either have hardly any time to process information, or who have ample time to process information, but are not distracted (but see Nieuwenstein et al. (2015) for counter evidence). The unconscious thought advantage hypothesis can be tested by having participants either briefly or extensively study crowdfunding campaigns, be distracted for some time, and then form predictions of crowdfunding success. An obvious limitation of our research is that our studies were limited to reward-based crowdfunding, so both suggestions above can also be tested in donation, loan and equity crowdfunding.

Third, in study 1, the experience of the participants apparently did not translate into an increased ability to predict campaign success. Their experience may not have been relevant to the cases under consideration; it is also possible that merely having experience in crowdfunding does not translate into increased predictive ability because there is no direct feedback loop supporting learning. Dane and Pratt (2007) suggested that experts should have more accurate initial impressions in relatively unstructured situations—our study suggests that experience has not made our participants experts. In this regard, future research could

aim to detect people who are highly capable of predicting crowdfunding campaign success, and to theorize what makes them able to do so. This is relevant to those who want to provide training to people who wish to finance their projects using crowdfunding, as such a study would reveal the decision-making processes and rules of experts (Tetlock and Gardner 2015). Such studies could furthermore produce algorithms capable of predicting crowdfunding success, thereby adding, for example, to the machine-learning-based work of Greenberg et al. (2013).

Fourth, study 1 had a limited sample size. Although the data analysis was performed correctly, working with a larger group of participants could have led to different results. Fifth, the sample of study 2 contained only third-year Bachelor students of a Dutch university. Given this specific sample, caution is advised with generalization. It is recommended to perform similar research among other groups of people as well.

2.5.3 Conclusions

Crowdfunding has taken the world by storm and offers new and exciting possibilities for both entrepreneurial organizations and individuals and those who wish to take part in their endeavors as funders. Our study contributes by testing the effects of assessment time on the positivity and accuracy of assessments and adds to the growing body of crowdfunding literature.

We have learned that negative cues catch the eye of people quickly; a characteristic of human behavior that, like most—or maybe all—features of human and other animal behavior, seems to be shaped by evolution. A strong preference for immediately processing potentially dangerous information before everything else, helps species to survive by steering clear from harmful events. However, when more time is spent on assessing a situation, this negativity or negativity bias appears to decrease. This is intriguing, as a phenomenon known as the

confirmation bias exists as well. The confirmation bias states that people form opinions quickly, then look for cues in additional information to confirm this opinion, thereby effectively ignoring possibly important information that challenges their initial response, or even proves it wrong. The hierarchy and interplay of cognition biases is an interesting subject that would benefit from more attention in various academic fields, among them the study of crowdfunding.

CHAPTER 3 - The Effect of Pitch Videos on Evaluations of Crowdfunding Campaign Success

Abstract

This study uses an experimental approach to establish how the crowd predicts the success of crowdfunding campaigns with different types of information, specifically focusing on the effect of watching a pitch video. 209 individuals estimate the success of 66 crowdfunding campaigns in three conditions: A screenshot of the campaign, the pitch video of the campaign, or a combination of both. The results show that the combined condition leads to campaigns being assessed more positively, but not more accurately, than the conditions of the screenshot and the video campaign alone. The results of this study contribute to the literature by being one of the first to investigate the effects of the viewing behaviour of the crowd and showing that actually watching a pitch video increases the positivity of the crowd in their evaluations of crowdfunding success. We show how media richness theory, information diagnosticity theory, cue summation theory, multimedia learning theory, and cognitive load theory work in a crowdfunding setting.

3.1 Introduction

Over the last years, crowdfunding has been growing rapidly as an effective way to fund new ventures. As a result, its various aspects have been getting much attention in academic research (e.g. Belleflamme, Lambert, & Schwienbacher, 2014; Brown, Boon, & Pitt, 2017; Courtney, Dutta, & Li, 2017; Hornuf & Schwienbacher, 2017; Kuppuswamy & Bayus, 2018a/2018b; Mollick, 2014; Paschen, 2017). Crowdfunding enables individuals and companies to raise money from large numbers of small-scale investors to finance their projects and ventures. Founders of projects and ventures advertise their ideas on crowdfunding platforms: Websites that provide a single webpage enabling founders to explain ideas and entice potential investors to make an investment. The benefits of a successful crowdfunding campaign are far greater than the mere provision of financial

capital. Crowdfunding is used for many other reasons, the most important include: As a marketing tool, establishing demand for a product or service, expanding social capital and building a customer base. In addition, (reward-based) crowdfunding performance positively affects additional financing, and therefore venture success (Kuppuswamy & Roth 2016).

Crowdfunders face the problem of having merely a single webpage to consider before making the decision to fund a campaign. They generally lack information that is obtained via personal interaction, common in more traditional ways of financing new ventures. Simultaneously, crowdfunders are able to view hundreds of projects that ask for their funds at only a mouse-click away. Concurrently, creators face the problem of being able to stand out among hundreds of other campaigns, and having to assure that whoever views their page arrives at a positive assessment of their projects' success. In other words, uncertainty and information asymmetry are high (Belleflamme et al., 2014). The assessment of crowdfunding success and its antecedents are important as this assessment represents an important step towards making an actual investment. Accordingly, being part of, and experiencing the realisation of a successful project, are some of the main reasons to contribute to crowdfunding campaigns (Hemer, 2011). Therefore, it is important for creators, to make sure that the crowd comes to a positive assessment of their campaign. Simultaneously, when the crowd assesses crowdfunding campaigns, they want to know what information helps them to make an accurate assessment. Although the eventual success of the creator's project is not relevant for all crowdfunders (e.g., when someone wants to support a creator who is a friend), in most cases crowdfunders will want to support projects that become successful. By focusing on accuracy, this study identifies the factors that allow funders to predict correctly whether a project will be successful or not.

As crowdfunding is becoming a more common way of attracting funds and publicity for new ventures, a plethora of platforms where entrepreneurial individuals can display their

proposals have sprung into existence. Most of these (reward-based) platforms allow the creator to post a pitch video, a short video in which the core idea or product is presented to the crowd. The majority of (successful) project creators choose to make such a pitch video, which can be a costly and time-consuming endeavour. Therefore, it is important to investigate the utility and effectiveness of this hard work, as I do in this study. In this chapter, reaching or passing the set monetary goal of a crowdfunding campaign is considered as a success.

Current literature teaches us that the presence of a pitch video positively correlates with the chance of success for crowdfunding campaigns (Mollick, 2014). While this is interesting and valuable information for creators and others involved in crowdfunding, it is merely a correlation that appears in large datasets. Among other things, it does not reveal if watching this pitch-video actually makes the crowd more positive, or more accurate in their judgments about the eventual success of the campaign. In this chapter I use the perspectives of a number of theories, including media richness theory, cue summation theory, multimedia learning theory and cognitive load theory, to form the hypotheses. The theory section shows that on the one hand, following these theories, one would expect the crowd to make more positive judgments, because these videos can be more enticing and persuasive than mere text or still pictures, causing the crowd to estimate the success of these crowdfunding campaign more positively. In addition, one could expect the more (and/or richer) information of videos to decrease information asymmetry between the creator and the crowd, which would lead to more accurate assessments of these campaigns.

This study uses an experimental approach to investigate exactly these matters. Therefore, I construct the following research question: *"What is the effect of having watched a pitch video on the accuracy and positivity of crowdfunding campaign success evaluations?"*.

The crowd's estimation of the success of crowdfunding campaigns provides us two dependent variables. The first variable is positivity and simply entails whether the participant thinks the campaign will succeed. The second variable is accuracy and entails whether the evaluation of success is accurate, i.e. congruent with reality. Our main independent variable is the condition and describes three situations: A screenshot condition, where the participant is shown a screenshot of the campaign, a video condition where the participant is shown the pitch video of the campaign, and a combined condition, where the participant is shown both the screenshot and the pitch video.

The information stemming from this experiment contributes to better understanding the function of crowdfunding pitch-videos by revealing how watching such a video affects the evaluations of the crowd, which will in turn influence the amount of money being raised. This information aids creators in choosing how to spend their precious resources.

The results also contribute to the literature on media richness theory, information diagnosticity theory, cue summation theory, multimedia learning theory and cognitive load theory work and show how these theories apply to a crowdfunding setting. These theories strongly indicate that watching a crowdfunding video in combination with the rest of the campaign aids potential funders in the crowd by making their evaluations of campaigns more accurate. In addition, watching a crowdfunding pitch video might be an effective tool for creators to convince the crowd of the quality and success of their project. Our results show that watching a pitch video in addition to a screenshot makes the crowd both more positive, but not more accurate when they estimate the success of crowdfunding campaigns.

3.2 Literature

Various concepts of the entrepreneur and crowdfunding exist; therefore, boundaries for both constructs are set in advance. The creator in this article is the entrepreneur or organisation

that founds a for-profit or not-for-profit new product, service, project or venture, and uses crowdfunding as a financial resource. The creator is not necessarily connected to a start-up; the initiative can also concern a single private project or be proposed by an existing firm. The creator is considered an entrepreneur as this person (or organisation) is involved in the creation, discovery and exploitation of value-adding opportunities (Masurel, 2019). Following Mollick (2014, p.2), this study defines crowdfunding as "the efforts by entrepreneurial individuals and groups - cultural, social, and for-profit - to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries". Within this definition, several forms of crowdfunding exist. Mollick (2014) uses the return to the funder to distinguish reward, donation, loan, and equity-based crowdfunding. This chapter studies predictions of the success of crowdfunding campaigns published on the biggest platform, Kickstarter, where campaigns make use of non-financial rewards as returns for financial support, such as pre-sale of products, vouchers (e.g., free menus in a newly opened restaurant), tickets to performances, and recognition (e.g., one's name on the seat of a newly built theatre). Reward-based crowdfunding is a fast-growing form of crowdfunding and provides invaluable advantages over other ways of financing a venture. As opposed to equity and debt-based crowdfunding, in reward-based crowdfunding, the creator does not pay (high) interest rates on loaned money, neither does (s)he give away control of the organisation in the form of equity. Reward-based crowdfunding often uses the pre-sale of eventual products as a reward to the customer, establishing demand and actual finances for the production phase before production has actually started. The actual manufacturing of products is very costly for entrepreneurs and organisations. Having orders – and financial resources – already in possession dramatically decreases risk for creators, especially when compared to mere

estimations of demand. In sum, reward-based crowdfunding lowers the risk of creators substantially.

In the next section of this chapter a number of theories are described that can explain how watching a crowdfunding pitch video affects the perceived likeliness of success and accuracy of campaign predictions. As not much is yet known about the effect of pitch videos in a crowdfunding setting, I seek consultation from 6 theories. These theories and theoretical concepts are about conveying and interpreting information and provide a guide on expectations with regard to video's effect on the positivity and accuracy of crowdfunding campaign evaluations; media richness theory, information diagnosticity theory, vividness, cue summation theory, multimedia learning and cognitive load theory.

3.2.1 Media Richness Theory

Media richness theory is a well-established academic theory that still finds its application in practice today. The theory helps to understand which types of media are suited for which types of communication. In their seminal work, Daft and Lengel (1986) explain that selecting the right communication channel helps to decrease the receivers' uncertainty. In other words, it decreases the perceived level of information asymmetry. Information asymmetry is a state that is characterised with one party having more complete information on a specific affair than the other(s). The richness of media entails how much information can be transmitted through a specific type of medium. For instance, in written text, tonality of voice is not captured, in this respect, a phone conversation has higher information richness. Richer media can increase decision quality (Kahai & Cooper, 2003). The potential ambiguity of content, as well as situational factors and symbolic cues are often important determinants for the choice of medium (Trevino et al., 1987). Daft and Lengel (1986) argue that task performance increases when the medium's ability to transfer information fits the corresponding task.

Koch and Siering (2015) use media richness theory to explain why providing images and video are positively related to the actual success of crowdfunding campaigns. They argue that providing richer information can fit the situation in crowdfunding projects when for example images or videos are more convenient to explain parts of a project that are harder to describe in textual form; e.g., videos of a working prototype. In addition to this, personal chemistry with entrepreneurs has been shown to be a first step in potential investment from business angels (e.g. Mason and Stark 2004) and identification with the project creators has been shown to be an important factor for the crowd to participate in a crowdfunding campaign (Gerber & Hui, 2013). For interpersonal communication, video is a much richer means of communication than written text and could therefore be expected to increase chances of the crowd having a personal chemistry, or identification with the entrepreneur.

3.2.2 Information Diagnosticity Theory

Another applicable theory is information diagnosticity theory, which is concerned with the perceived value of a piece of information. More specifically, the perceived diagnosticity of attribute information is the consumer's assessment of the usefulness of the information to make evaluative judgments and choices (Aboulnasr, 2006). Information diagnosticity theory tells us that the amount of information that is available increases the perceived helpfulness and utility of texts like (online) product reviews (Cheung et al., 2008; Mudambi and Schuff, 2010). Therefore, creators can add more information on their campaign websites to enable potential contributors to better assess projects, ultimately supporting their funding decisions and resulting in higher information diagnosticity (Koch & Siering, 2015). Koch and Siering (2015) assume that this leads to a positive impact on the funding success of a project. While this seems to be a plausible assumption, one might also expect that this positive impact highly depends on the project quality, as providing more information on low quality projects may in

its turn relate to less positive evaluations. As higher amounts of textual information increase perceived helpfulness and utility of a text (Cheung et al., 2008; Mudambi and Schuff, 2010), and changing a presentation format significantly influences the quality of cognitive learning (Vessey & Galetta, 1991), following media richness theory, one could expect that not merely increasing the length of the text, but also adding more information in the form of richer media such as pictures and videos would further contribute to decrease perceived information asymmetry. This is something that Daft et al. (1986) have predicted in their seminal work, as they stated it to be likely that the perception of a website's competence to effectively convey information is defined by the perception of richness of the interface, as richer media are archetypically believed to have a higher capability to unambiguously transmit information (Daft et al. 1987).

3.2.3 Vividness

Vividness reflects how much sensory information is provided (Jiang and Benbasat, 2007) and has been found to increase confidence in product evaluations (Peck and Childers 2003). Jiang and Benbasat (2007) argue that vivid information engages people in cognitive elaboration and likely affects people's attitudinal judgments in decision-making. Weathers, Sharma and Wood (2007) found that using pictures, or increasing vividness in general, is an effective way to market goods that mainly consist of experience qualities. Additionally, images positively influence the duration of website visits (Danaher et al., 2006). In a reward-based crowdfunding setting, it was revealed that the word count of the text, the number of static images, and the number of videos are signals for the successful funding of crowdfunding campaigns, implicating that vividness is an effective way to persuade the crowdfunding crowd (Kunz, Bretschneider, Erler and Leimeister, 2016).

To go beyond static visual imagery, Park and Hopkins (1992) find in their literature review that dynamic visual displays are generally more effective than static visual display. This view is supported by the more current empirical work of Jiang and Benbasat (2007) who discover that visitors see websites with video content as more useful, which relates to findings of crowdfunding research which state that the presence of the pitch video is positively correlated to funding success. They argue that dynamic scene changes and sound effects grab attention of visitors.

3.2.4 Cue-summation Theory

A difference between video and static pictures lies in the fact that video is able to provide temporal visual change. Cue-summation theory states video display is likely to increase learning over static visual display. The combination of temporal visual changes and related sound effects allows to create associative interconnections, therefore yielding a more complete nonverbal symbolic depiction than static pictures (Jiang and Benbasat, 2007). Therefore, dynamic visual displays aid in making change processes more explicit and understandable than their static counterparts (Park & Hopkins, 1992). Video is considered a multimedia channel, a channel that presents information in more than one sensorimotor channel, i.e. the auditory and the visual channel (Mayer, 2017). A substantial amount of extant research shows that the appropriate use of multiple sensory cues is able to represent nonverbal information and enhance learning performance and experience (Carney and Levin 2002; Mayer and Gallini 1990; Moreno and Mayer 2002). In addition, people have been shown to display higher motivations to product learning and higher understanding of products by dynamic displays of information (Jiang & Benbasat, 2007).

3.2.5 Multimedia Learning Theory

Another interesting and related branch of research that focuses on how people learn in multimedia environments, is multimedia learning theory (e.g. Mayer, 2017; Schnotz, 2005). This theory involves learning from both words and picture, including information that stems from all sorts of teaching materials; textbooks, videos and face-to-face slide presentations, etc. The multimedia principle states that people learn more effectively when studying words and pictures than when studying just words (e.g. Butcher, 2014).

The cognitive theory of multimedia learning provides the theoretical foundation for designing effective multimedia in e-learning (Mayer, 2017), this theory combines the three important aspects of learning in one coherent model; selecting important sensory information from multimedia presentations, organising this information via the visual and auditory channels into a coherent model in working memory and integrating with prior knowledge from, and saving into, long-term memory.

Three key principles from cognitive science are crucial in this model. The dual channel or dual coding principle, which proclaims that verbal and nonverbal systems work independently, and each system affects understanding and memory (Clark & Paivio, 1991; Paivio, 1979). The active processing principle: Only when people are engaged in appropriate processing, meaningful learning can ensue (Mayer, 2009; Wittrock, 1974, 1989). The limited-capacity principle: People are only able to process a limited number of elements per channel at the same time (Baddeley, 1999; Sweller, Ayres, & Kalyuga, 2011).

3.2.6 Cognitive Load Theory

The final theory that is applicable to this study is cognitive load theory. According to cognitive load theory (Sweller, 2011; Sweller, Ayres & Kalyuga, 2011) long term memory and working memory work together during the learning process. While working memory has

severe limitations when dealing with new information, no such limitations exist when dealing with already familiar information. The basic thought of cognitive load theory is that working memory is used to process new information and add this to long term memory. The total cognitive load of a task consists of intrinsic and extraneous cognitive load. The first form describes the cognitive load that originates from the matter itself, the second from the way instructions are provided. Minimising extraneous cognitive load ensures that more processing power is available for the subject matter itself.

An important effect that is of particular influence in multimedia, is the split attention effect (e.g. Ayres & Sweller, 2014; Chen & Wu, 2015). This effect has strong empirical support (see e.g. Ginns, 2006) and can be divided in the spatial and temporal split attention effects. The spatial and temporal split attention effects explain that (extraneous) cognitive load is increased when sources of information are either spatially or temporally apart. The split attention effect is related to and can explain the modality effect, which follows the dual channel approach that is also used in multimedia learning. The modality effect entails that using both auditory and visual channels increases the effective capacity of working memory. Accordingly, dual modality reduces load on the visual channel and can eliminate spatial and temporal split attention effects. A reverse modality effect can also appear. The transient effect illustrates this well. When long and complex text is presented in auditory channels, the fleeing character of the information produces extra cognitive load, making it less effective than using written text (Leahy & Sweller, 2011).

3.3 Hypotheses Development

During this study we have seen that overall, these theories point in two directions. First, media richness, cue summation, multimedia learning theories, and cognitive load theories indicate that the crowd, when watching a video in addition to the screenshot, will have higher

accuracy. Second, media richness, information diagnosticity, vividness, multimedia learning and cognitive load theories indicate that the crowd will be more inclined to assess the project positively. In this section we summarise the reasoning based on the literature that leads to our hypotheses.

On the one hand watching a crowdfunding pitch video in addition to the rest of the campaign can help the crowd to make an accurate estimation of the quality, and eventual success of the campaign. Firstly, media richness theory is able to decrease ambiguity (Daft & Lengel, 1986) and increase information transfer as well as decision quality (Kahai & Cooper, 2003). Furthermore, cue summation theory shows that the presentation of information via more than one sensorimotor channel leads to higher understanding of products (Carney and Levin 2002; Jiang & Benbasat, 2007; Mayer and Gallini 1990; Moreno and Mayer 2002). Moreover, multimedia learning theory argues that videos can increase the effectiveness of learning (Butcher, 2014) and cognitive load theory states that video can be used to decrease the extraneous cognitive load of a task, making more working memory available for the intrinsic cognitive load, and therefore aiding people to make better decisions (Sweller, 2011; Sweller, Ayres & Kalyuga, 2011). We therefore expect the video format in addition to text and static images to decrease information asymmetry and therefore increase participants' ability to make an informed decision on the quality of the projects (Courtney et al., 2016). Hence, we propose the following hypothesis:

Hypothesis 1: Having watched a crowdfunding pitch video is positively related to accurate project assessments.

Moreover, the reviewed literatures inform the argument that watching a crowdfunding pitch video in addition to the rest of the campaign helps creators to convince the crowd of their projects' quality and eventual success, thus leading to a more positive evaluation. After all,

creators choose which information they provide. Using a video, and therefore increasing media richness (Daft & Lengel, 1986), can be used to convince the crowd on a more personal level. Allowing for example personal identification between the crowd and the creators (Gerber, Hui & Kuo, 2012). Increasing the information diagnosticity can give the crowd more confidence in the creators and their qualities (Koch & Siering, 2015) and vividness can be used to engage the crowd and increase their confidence in a project (Jiang and Benbasat, 2007). Reducing extraneous cognitive load (Sweller, 2011) of the content allows the crowd to focus on the message of the creators, which may be convincing of their abilities. Therefore, we expect watching the pitch video in addition to the rest of the campaign to increase the perceived likeliness of success of the campaigns, by getting and keeping raters' attention and increasing their positive emotions to the project. We therefore propose the following hypothesis:

Hypothesis 2: Having watched a crowdfunding pitch video is positively related to positive project assessments.

3.4 Methodology

3.4.1 Research Design

In order to determine what the effect of watching a pitch video is on the crowd's estimation of the success of crowdfunding campaigns, we employ an experimental design. During this study, participants are asked to estimate the success of a selection of 66 crowdfunding campaigns from the technology sector. 40 of the selected projects were successful in reaching the monetary goal, 26 were not. The campaign sample is a subset of the sample from chapter 2 study 2; all campaigns that have a pitch video are selected from it. The selection now closely resembles the success rate of Kickstarter projects with 26 out of 66 being close to

38%, which is the actual success rate (Kickstarter stats, 2020). Participants had a 50% chance of being assigned a successful or unsuccessful campaign. These numbers were not revealed to the participants. To study the effect of the provided information, three conditions are created: Merely a screenshot of the entire campaign (scrollable), only the pitch video of the campaign and finally, a combination of both the screenshot and the pitch video. These conditions are all valid and occurring in a natural setting. People might choose to view only the static information on a campaign page, which is represented by the screenshot condition. Another option is viewing the pitch video in addition, which is represented by the combined condition. Lastly, the pitch video can be shared on blogs or social media, without people having (immediate) access to the campaign page itself, this is represented by the (sole) video condition.

3.4.2 Sampling and Procedure

Project sample: To obtain variety in our campaign sample, 40 successful and 26 unsuccessful crowdfunding projects were selected from the technology sector of the Kickstarter website. This selection was done according to the following criteria: The provision of a pitch video, the main language being English, and the campaign was ending soon. “Ending soon” is a browsing option on Kickstarter that shows projects sorted on when they end. We selected campaigns that were about to end (all within one week), as this provided us with an accurate indication of their eventual success. When campaigns have finished, Kickstarter changes the layout of the project page, therefore choosing those that were about to end, was the best choice. In addition, using projects that had just started would mean waiting for a long time for them to finish, before knowing how well they did. After projects had ended, their actual success was confirmed. Please refer to the procedure section below for more information on this process. For further descriptives of the project sample please refer to Table 3.1 and 3.2.

Table 3.1 Case Sample Frequency Distributions

	Category	N	%
Creator	Company	34	51.5
	Person	32	48.5
Actual Success	Success	40	60.6
	Failure	26	39.4

Table 3.2 Case Sample Descriptive Statistics

	N	Range	M	SD
Goal (USD)	66	193-250000	36620	49968
Projects Started	66	0-10	1.14	2.09
Projects Financed	66	0-47	4.65	8.59
Number of Rewards	66	1-23	9.00	4.69

Rater sample: In October 2017, 209 participants successfully completed the survey, all were from the United States and recruited via MTurk, an online marketplace for tasks that require human intelligence. Ages lay between 19 and 80 years old, with a mean of 39.0 and a standard deviation of 13.2, 55.8% of the participants were female. 12.9% of the participants had an associate degree in college, 63.6% had a bachelor's degree or higher. 30.7% had no experience with crowdfunding, 30.8% browsed crowdfunding campaigns regularly, 12.2% was involved in running a campaign themselves and 34.1% had funded at least one campaign. Crowdsourced online participants, and those from MTurk in particular, have been studied and found effective and attentive candidates (e.g., Casler, Bickel & Hackett, 2013; Hauser &

Schwarz, 2016). In addition, on MTurk people have a wide selection of available tasks. Those selecting crowdfunding would therefore show at least some interest in the subject. This prediction proved to be true, as over 69% of respondents had previous experience with crowdfunding. Moreover, Mturk respondents they are conveniently available and allowed to compare the results to those of Chapter 2.

During the survey, a simple test was provided to test the attention of the participants, it consisted of a single question that asked participants to put a slider on “seventy”. A slider is a simple way to retrieve user input, users drag a small knob over a line to retrieve data, in this case accepting numbers from 0 to 100. The 16 participants who did not pass this test were not included in the data nor reimbursed for their endeavours, as opposed to those who did finish their assignment, who were compensated with a small amount of money.

Procedure: First, the experiment was explained to the participants on-screen, then they entered demographic information and started the experiment. Participants were provided with randomly picked projects, which were then presented in a randomly selected condition. Randomization was handled by the algorithm in the Qualtrics software. Participants were asked to study the screenshot and/or pitch video for as long as they pleased, with a minimum of 1 minute each. After this, they were asked to select either ‘yes’ or ‘no’, depending on if they thought the campaign would be successfully funded. After completing five assessments, participants were presented with the attention test. As long as the total time of the survey was under 28 minutes, the participants were presented with yet another project. This made sure the entire time of the experiment did not take much longer than 35 minutes, this length was chosen as it is a nice balance between getting enough data and participants not losing interest. 674 from the responses were of actually successful campaigns; of which 258 were in the screenshot condition, 210 were in the video condition and 206 were in the combined condition. The 674 observations from unsuccessful campaigns consist of 237 observations

from the screenshot condition, 216 from the video condition and 221 from the combined condition. This resulted in 1348 observations from 209 participants. A chi-square analysis showed that the condition and the actual success variable were independent: χ^2 (2, N = 1348) = 1.502, p =.472.

Variables: A number of variables have been taken into account, when we run the analyses. We chose to not quantify variables with a qualitative nature and to omit quantitative variables that could not be observed by the participants. Accordingly, we focused on incorporating readily available quantitative data, taken directly from the campaign page, and with reasonable chances of having an influence. These variables are: Whether the creator portrayed him/herself as an organisation or a person, the monetary goal (in US dollars), how many projects the creator has started on Kickstarter before the current campaign, how many projects the creator has financed on Kickstarter, and how many rewards were available, see Table 3.1 and 3.2 for an overview. For a preliminary look at the data before we move on to the statistical tests, an overview of the correlations of these variables can be seen in Table 3.3. The correlations show that condition only correlates with goal and positivity, not with accuracy. The table also demonstrates multiple other correlations. For completeness, actual success was added, this variable describes whether the project was actually successful. An interesting observation here, is that accuracy positively correlated to actual success, meaning that positive accurate estimations were more often made for successful projects.

Table 3.3 Bivariate Correlations

	1	2	3	4	5	6	7	8
1 Creator	-							
2 Financed	-0.11**							
3 Created	0.07**	0.61**						
4 Goal	0.21**	-0.10**	-0.17**					
5 Rewards	-0.22**	0.16**	0.03	-0.04				
6 Actual Success	-0.30**	0.42**	0.36**	-0.21**	0.40**			
7 Condition	-0.02	-0.01	0.00	0.06*	-0.02	0.03		
8 Positivity	-0.14**	0.08**	0.05	-0.01	0.15**	0.20**	0.10**	
9 Accuracy	0.00	0.07*	0.08**	-0.07*	0.02	0.17**	0.05	0.03

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). Creator: 0=Company, 1=person. Actual Success: Success =1. Condition: 0 = Screenshot, 1 = Video, 2 = Combined. Positivity: 1 = Positive. Accuracy: 1 = Accurate.

3.5 Analyses and Results

In order to analyse the effect of watching a pitch video, we created a contingency table. Contingency tables, also known as cross tabulations, are a tool to analyse categorical data. The contingency table shows that participants were able to estimate the success of crowdfunding campaigns from just the screenshot of the campaign, just the pitch video and the combination of both, with an accuracy of 60%, 60% and 65% respectively. A chi square analysis shows that accuracy scores are independent from the conditions, χ^2 (2, N = 1626) = 4.228, p =.121. Furthermore, a binomial calculation shows that respondents were able to predict the success of crowdfunding campaigns significantly above chance levels ($p < .001$). This shows that researching these evaluations is valuable.

Another contingency table shows that the crowd positively estimated 66% to be successful in the combined condition, while for the video condition and the screenshot condition, these values were 57% and 56% respectively. A chi-square test shows the positivity of the estimations is not independent from the conditions χ^2 (2, N = 1626) = 12.912, p =.002. A post hoc analysis of the adjusted standardised residuals against Bonferroni-corrected *p*-values shows that the combined condition is associated with significantly different positivity compared to the video and screenshot condition, which do not significantly differ from each other.

The contingency tables provide an initial view of the relations between the different conditions and accuracy and the perceived likeliness of success. However, it is important to see how these differences hold up when control variables are introduced. Therefore, we run a generalised linear mixed model (GLMM) on accuracy. In contrast to linear models, GLMMs do not have to meet the assumptions of linearity and independent observations. Instead, one can work with e.g., binary dependent variables and can include both fixed and random effects. Which is needed for the data of this chapter. Random effects allow for compensation of individual differences in participants and campaign projects, resulting in a completer and more accurate model. As only the values of the fixed effects are of particular interest to answering the research question, we focus on these effects. The combined condition shows a significant effect with a negative coefficient for accuracy, meaning that participants estimated the success of crowdfunding campaigns with lower accuracy when they assessed both the screenshot and the video, compared to only the screenshot. Furthermore, for accuracy there is no significant difference between the screenshot only and the video only condition. Therefore, we conclude that Hypothesis 1 is not supported by our results. See Table 3.4 for the results.

Table 3.4 Generalised Linear Mixed Model on Accuracy (Model 67.7% Accurate)

	Coefficient	*S.E.*	*Sig.*
Intercept	-0.24	1.95	0.90
Creator:			
– Organisation	0.00	0.20	1.00
– Individual	0[a]		
Projects Started	-0.05	0.06	0.45
Projects Financed	-0.01	0.01	0.47
Goal ($):	0.00	0.00	0.29
Rewards	-0.02	0.02	0.46
Condition:			
– Combined	-0.28	0.13	0.04
– Video	-0.04	0.13	0.77
– Screenshot	0[a]		

Probability distribution: Binomial. Link function: Logit. [a] = Redundant

Another GLMM is run with the positivity of the estimation as the dependent variable. This means that we now look at whether the participant judges positively or negatively, not taking into account whether this corresponds to the actual outcome of the project. Three fixed effects present themselves; creators portrayed as organisations (as opposed to individuals) are perceived more likely to succeed, and projects with more rewards as well. Lastly, estimations in the combined condition are significantly more positive than those in the screenshot only condition. There is no significant difference between the screenshot only and the video only condition. Therefore, we conclude that the results provide partial support for Hypothesis 2. See Table 3.5 for the results.

Table 3.5 Generalised linear mixed model on Positivity (Model 76.7% Accurate)

	Coefficient	*S.E.*	*Sig.*
Intercept	-0.65	1.93	0.74
Creator:			
– Organisation	0.56	0.20	0.01
– Individual	0[a]		
Projects Started	0.05	0.06	0.41
Projects Financed	0.01	0.01	0.41
Goal ($):	0.00	0.00	0.45
Rewards	0.06	0.02	0.01
Condition:			
– Combined	0.51	0.14	0.00
– Video	0.05	0.14	0.71
– Screenshot	0[a]		

Probability distribution: Binomial. Link function: Logit. [a] = Redundant

As mentioned in the methodology section, the campaign sample is a sub-sample of the campaigns of Chapter 2, only those campaigns with a pitch video were selected to better fit the purpose of this chapter. However, data was collected on campaigns without video too (obviously all of these campaigns fell automatically in the screenshot condition). As a robustness check, these data were added to the data (total N = 1922) and model. Results were highly similar and significance values of variables remained equal, meaning this robustness check was passed.

3.6 Discussion

This study investigates the effect of watching crowdfunding pitch videos on the crowd's estimations of the campaigns' eventual success and does so on two different levels: The positivity and accuracy of these estimations of success. In the theory section, we use media

richness theory, information diagnosticity, vividness, cue summation, multimedia learning, and cognitive load theory to hypothesise that watching a crowdfunding pitch video is positively related to a more accurate project assessment (H1); and that watching a crowdfunding pitch video is positively related to a more positive project assessment (H2).

Watching the pitch video in addition to the campaign page did not lead to more accurate estimations than assessing merely the campaign page (H1 not supported). Apparently, in this crowdfunding setting, increasing information richness did not increase decision quality (Kahai & Cooper, 2003) and the higher understanding of products that is described by cue-summation theory (Carney and Levin 2002; Jiang & Benbasat, 2007; Mayer & Gallini 1990; Moreno & Mayer 2002) and multimedia learning theory (Butcher, 2014) does not translate to more accurate crowdfunding evaluations. The information-rich, dynamic visual display, which allows for multiple forms of media to work together does not appear to be an efficient way of reducing information asymmetry and does thereby not aid the crowd to make accurate evaluations of the quality of these crowdfunding projects (Courtney et al., 2016). If extraneous cognitive load was indeed reduced (Sweller, 2011), this did not result in more accurate evaluations.

Interestingly, when combining the video with the screenshot of the campaign, respondents estimated the success of campaigns with significantly less accuracy than when evaluating just the video or just the screenshot. Apparently, creators do a pretty good job of convincing the crowd, as long as they get the time to deliver their message.

These results are very relevant for investors. When deciding whether to support a project, one can get a good sense of the eventual success of a project before making their pledge, without having to spend much time.

The analysis for the second hypothesis, which states that watching a campaign video is positively related with positive crowdfunding success estimations, also yielded interesting

results: Where extant literature has focused mainly on pitch videos being provided on a crowdfunding campaign and their relation with success, we now know that watching of a pitch video in addition to the rest of the campaign (screenshot condition), is effective in persuading the crowd of the quality of the project. However, there is no significant difference in positivity of evaluations based on static (screenshot) versus dynamic (video) information alone. Information diagnosticity theory indicated that providing more information would increase the chances of crowdfunding campaigns, this is in accordance with literature on vividness in a crowdfunding setting, which showed that more words, images, and videos on a crowdfunding campaign were positively related to success (Kunz, Bretschneider, Erler and Leimeister, 2016). Our results show that the addition of watching a pitch video to the rest of the campaign really can make a difference and that the crowd can be persuaded of the quality of a crowdfunding project by watching a pitch video. It therefore appears that increased information diagnosticity convinces the crowd of the qualities of a project (Koch & Siering, 2015). Additionally, while vividness (Jiang and Benbasat, 2007) and reduction of extraneous cognitive load (Sweller, 2011) may play a role in how fast creators are able to convince the crowd of their projects' qualities, the fact that an increase in positivity was only measured for the combined condition implies that the amount of information presented as predicted by information diagnosticity theory, plays the biggest role.

It is very interesting to see that the accuracy and the positivity of the evaluations did not differ between the screenshot only and the video only conditions. These types of media appeared to be equally effective in informing and persuading the crowd of the quality of crowdfunding campaigns. It is possible that the creators carefully chose which information to provide via which channel and that the video and screenshot of the campaign complemented each other, therefore generating a more persuading whole when both are regarded and even decreasing accuracy in respondents when estimating success. Perhaps, respondents continued

to the next phase after having saturated their desire for positive (or lack of negative) information. After all, respondents were in charge of how long was spent in each condition on each campaign. This may still have been after a shorter amount of time in the video condition than in the screenshot condition. Cognitive load could still have been lowered by the video and learning and understanding may still have been increased as described by cue-summation theory (Carney and Levin 2002; Jiang & Benbasat, 2007; Mayer & Gallini 1990; Moreno & Mayer 2002) and multimedia learning (Butcher, 2014). Future researchers could investigate this further, by requiring participants to evaluate in each condition for the same amount of time. Differing time constrictions could be used to further investigate effects.

Other interesting observations are that campaigns of creators who portray themselves as an organisation instead of an individual, are related to positive estimations. Coming up with a name and logo for an organisation may therefore be yet another effective strategy for creators to increase the positivity of their campaigns' evaluations. This is an especially efficient strategy for creators as it does not have to cost much time and other resources while increasing the positivity of the crowd. Additionally, including more rewards for the crowd to choose from, increases the positivity of evaluations. The increase in available options could mean better chances of reaching the monetary target.

An important note has to be made. In reality, positivity and accuracy are related. When more people are positive and decide to fund a campaign, the accuracy of the crowd rises to 100%, as the crowd is provided with information on how much money was already invested. This also works in the other direction. When the end of the campaign nears and contributions are still low, it becomes obvious that a campaign will not succeed. Information on the progression of the campaign towards the monetary goal has proven to be of great influence as for example a high number of early campaign contributions is related to the success of campaigns (e.g., Crosetto & Regner, 2014). The current study has been designed to

investigate other factors that influence the evaluations of the crowd. Responses therefore reflect impressions from the crowd when the campaign is not (yet) close to being (highly) probably successful or unsuccessful. Arguable these responses are the most important, as convincing the first number of contributions, in term convinces others to contribute.

3.7 Implications for Practice

The presence of crowdfunding pitch videos has already been shown to positively correlate with chances of actual success (Mollick, 2014). In this study, watching crowdfunding pitch videos in combination with the rest of the campaign affected participants' estimations of campaign success positively as well. This suggests that resources spent on pitch videos are an effective means of persuading the crowd of a campaign's success. As it appears that both the video and the rest of the campaign have to be viewed to improve the positivity of the crowd, creators would be wise to refer the crowd to the video and the rest of the campaign in their counterparts, encouraging the crowd to view both. Making sure that the information in the video and the rest of the campaign complement each other can then help to further increase the information diagnosticity of the crowd.

An additional interesting recommendation for creators and other professionals involved in running crowdfunding campaigns is posing oneself as an organisation, rather than a person. The results of this study show that this increases the perceived likeliness of success of campaigns significantly. Organisations might give the crowd a higher sense of legitimacy than individuals, therefore increasing the belief in the campaign, and plausibly also in the subsequent actions of the creator. Higher numbers of rewards are also related to more positive evaluations. Therefore, adding more reward options could be an efficient and effective way to increase the crowd's view of a campaign. However, we must be careful when drawing conclusions and take into account the limitations of this study.

3.8 Limitations and Future Research

This study is prone to some limitations that have to be taken into account when interpreting the results. Firstly, respondents were all US citizens recruited on Amazon Mechanical Turk, a service that assigns human tasks to willing individuals for monetary compensation. While these people can still represent a diverse group of people, they share at least one common factor (being on MTurk). In reality, the crowd is a heterogeneous group of people with all kinds of motives, interests and fields of expertise (Allison, Davis & Short, 2015; Cholakova & Clarysse, 2015; Gerber, Hui & Kuo, 2012). However, on a crowdfunding platform, people share a common interest in crowdfunding. The data of this chapter show that a relatively large proportion of respondents had experience with crowdfunding. The scope of this study was restricted to the technology category of Kickstarter crowdfunding campaigns, which is only one of many categories and one of hundreds of crowdfunding platforms. Designing studies with a large group of heterogeneous respondents and a wider range of project samples will provide more insight.

As already briefly mentioned in the discussion, the omission of qualitative characteristics of crowdfunding campaigns could have implications for the results. Innovativeness is a specific example, this characteristic has been shown to be a significant predictor of actual crowdfunding campaign success (Char & Parhankangas, 2017). Including such variables to our model is a resource-hungry and time-consuming practice. As these qualitative characteristics are subjective, a panel of experts would have to be selected and agree on the level of e.g., innovativeness of each campaign. This may however provide highly interesting insights.

3.9 Conclusion

In this study, it is shown that adding vivid, rich data which facilitate the interplay of auditory and visual cues can compel the crowd but that this information does not make the crowd's assessments more accurate. This is intriguing, as it was expected that the addition of rich and vivid data, which can illuminate differences in for instance professionalism, were expected to inform investors by decreasing information asymmetry between creator and investor, ultimately allowing them to make better decisions. In addition, it appears that the most important factor is the amount of information processed by the crowd. Having more types of information available can encourage the crowd to process more information from the creators. This information is, of course, tailored to instil positive feelings for the project.

While these findings are intriguing, and of immediate practical applicability by enterprising individuals and organisations that are thinking about running a crowdfunding campaign to fund their endeavours, further research is desirable to delve deeper into the effects of crowdfunding pitch videos.

CHAPTER 4 - The Role of Attention in Reward-Based Crowdfunding: An Eye Tracking Study

Abstract

This observational laboratory study uses an eye tracking machine to investigate how people view and assess the quality of crowdfunding campaigns. 21 participants each estimate the success of 10 different crowdfunding campaigns. The data from the eye tracker is analysed in various ways. Firstly, heat maps are generated and analysed qualitatively. Then, total fixation durations on areas of interest are measured to get a comprehensive overview of how much attention each aspect of a crowdfunding campaign gains. Lastly, the total fixation durations per area of interest are used to predict the positivity and accuracy of participants' evaluations. Our qualitative analysis shows that most of the crowd's attention is focused on the upper parts of campaigns (those parts visible before scrolling down). The quantitative analyses show that longer total observations per campaign are related to more positive, but not more accurate evaluations of success and that further viewing behaviour seems not to be very different for predictions that are positive versus negative or accurate versus inaccurate. For positive predictions, binary logistic regressions show significantly higher durations for the text and image parts of the campaign contents. Lower fixation durations on the creator and higher fixation durations on images are associated with more accurate evaluations. This study contributes to the literature by increasing our understanding of cognitive processes in crowdfunding and thereby helps creators to enhance positive and accurate evaluations of their campaigns.

4.1 Introduction

The use of various forms of crowdfunding has been growing steadily, and crowdfunding is now considered as an important way to finance entrepreneurial projects of great variety. Characterised by its democratic nature and spreading of risk over several to numerous investors, crowdfunding serves entrepreneurs and organisations with innovative ideas for new

projects and ventures particularly well. More traditional institutions that provide new venture funding appear to be less receptive to more innovative and uncertain opportunities, which creates a funding gap for new ventures in the early stages of development (Ley & Weaven, 2011). Crowdfunding is one of the newer, less traditional ways of funding new ventures that might be able to fill that gap. As the use of and interest towards crowdfunding keeps growing, its use has transcended the mere funding of new ventures and projects. It is, for example, also used to gather information on markets for new products and services (Chang, 2020).

From the beginning of crowdfunding, one of the most prominent research goals in the field has been finding factors that predict the success of crowdfunding campaigns (Hoegen et al., 2018). This makes sense, as it helps creators (crowdfunding individuals and organisations) save resources on their expeditions to gather funds. As such, a multitude of studies have been conducted, aiming to predict or explain the success of crowdfunding campaigns (see e.g. the review of Kuppuswamy & Bayus, 2018). Recent research has reported a variety of indicators for successful crowdfunding campaigns (e.g., Crosetto & Regner, 2014; Du, Li & Wang, 2018; Etter, Grossglauser, & Thiran, 2013; Forbes & Schaefer, 2017; Li, Rakesh, & Reddy, 2016; McNeill, Lawson, Raeside, & Peisl, 2018; Mitra & Gilbert, 2014; Mollick, 2014). These findings are useful for creators. However, these existing studies look at relations between factors of project campaigns and their results. In other words, we know (for a part) what information is provided on a successful crowdfunding campaign. What is still unknown in the current body of crowdfunding literature, is what parts of the available information people actually used to assess the quality of a crowdfunding projects, before they decide to fund a campaign (Hoegen et al., 2018). For the crowd, reaching a positive assessment regarding the eventual success of a crowdfunding campaign is an important step in the decision-making process, as participating in a successful campaign and contributing to a successful project are important motivations to support a campaign

financially (Hemer, 2011). One could say that the success of crowdfunding campaigns is shared among creators and supporters (Gerber & Hui, 2013). Furthermore, the crowd is not interested in supporting, or even just pledging money to a campaign when they are not convinced that it will succeed.

As we can only cognitively process information that we have acquired, a critical first step in revealing the truth about this process and contributing to filling this research gap is finding out what it is, that the crowd looks at when they visit crowdfunding campaigns. It is important to know which elements of crowdfunding campaigns influence the crowd's perception of campaigns, so creators can design their campaigns more effectively and efficiently. Accordingly, we propose the following research question for this chapter:

"What is the effect of the attention on the aspects of crowdfunding campaigns on the accuracy and positivity of crowdfunding campaign success evaluations?"

We research this question in a reward-based crowdfunding setting, meaning that the funders of campaigns are compensated with non-financial rewards, these rewards can take different shapes, from thank-you notes to vacations. Mostly, rewards represent pre-sales of items or services. Pre-selling significantly decreases risk for creators by gathering finances and precise demand information before the production phase. Other forms of crowdfunding are loan-based, equity-based and donation-based crowdfunding (De Buysere, 2012) .

In order to answer the research question, we use an eye tracking device in an observational laboratory study to capture what people look at, and for how long, when they estimate the success of crowdfunding campaigns. We do this by defining so called areas of interest (AOIs) and measuring how long attention is focused on each of these AOIs. We then compare the attention durations on the various components of the campaigns for accurate versus inaccurate and negative versus positive campaign evaluations. Eye tracking is a specifically well-suited method to investigate this research question, as eye movements can

be used to provide ideal and powerful objective measures of information requirements and cognitive processes during behaviour (Tatler, Hayhoe, Land & Ballard, 2011). In fact, in cognitive psychology, perceiving our environment is increasingly viewed as an active part of how we operate and gather information that helps us to perform tasks (e.g. Hommel et al. 2001; Bridgeman and Tseng 2011). Furthermore, over the last years, eye trackers have become significantly less obtrusive and more affordable and easier to use. Therefore, eye tracking devices are becoming more and more common in both academic and applied research settings (Schütz, Braun & Gegenfürther, 2011). However, many studies over various fields still report on the lack of eye tracking research in their fields (e.g. Meißner & Oll, 2018; Wedel & Pieters, 2008).

Eye tracking devices generate vast amounts of data. In this chapter, we focus on fixations on areas of interest rather than the transitions between them, as is common in eye tracking research (Adrienkio, Adrienk, Burch & Weiskopf, 2012; Li & Pavlou, 2014). We do this by assessing heat maps of these fixation durations qualitatively, before we quantitatively analyse the fixation durations of areas of interest.

By using eye tracking and therefore objectively measuring visual attention, we can obtain a deeper and richer understanding of how funders cognitively acquire and process information and subsequently make decisions. We measure how long attention is paid to each aspect of a campaign and determine its effect on the positivity and accuracy of campaign predictions. This helps creators to identify the key aspects of their campaigns for informing and persuading the crowd, making creators more efficient and their campaigns more effective.

To accomplish this, we analyse the data both qualitatively and quantitatively. Using eye tracking to measure visual attention allows us to increase our understanding of the effect of attention on the different factors of crowdfunding campaigns. It also allows us to deepen

our knowledge on cognitive information processing and subsequent decision-making in a crowdfunding setting.

4.2 Literature

As eye tracking research on crowdfunding is still very much in its early development, the literature in this chapter focuses first on explaining why and how studying eye movements is an important step in understanding cognitive processes of the crowd. I then link available existing eye tracking research to the main theme of this dissertation. For this, I work with what is currently available and applicable to the research question, e.g., eye tracking research on brand selection. This specific type of research is useful as there are obvious similarities in selecting a brand to buy and selecting a crowdfunding campaign to support. I consecutively develop hypotheses that are in line with the rest of the dissertation.

4.2.1 Eye Movement

To understand why eye movement can help us with understanding behaviour it is imperative to first know why we move our eyes. Numerous forms of human behaviour require visual attention to be conducted successfully (Tatler et al., 2014). In order to process visual information, observers must first move their eyes to acquire this visual information. This movement is needed because acuity on the retina decreases fast when moving eccentrically from the high-resolution fovea, the central part of the lens (Wedel & Pieters, 2008). This is caused by the "increasingly aggregated retinal processing by the M ganglion cells" (Wilkinson et al., 2016, p.5). This indicates the importance to study eye movement as indicator for information acquisition (Russo, 1978) and to gain crucial insights in understanding behaviour (Tatler et al., 2014). The area in focus on our retina is about 5-8 percent of our total visual field. Only this small part is available to us for detailed processing. This explains the need to move our eyes so much. On average, humans move their eyes about

3 to 4 times per second, this happens mostly unconsciously and automatically (Kahneman, 2011, Wade & Tatler, 2011).

When a specific location is selected by our attention, its processing is enhanced, while processing of non-selected locations is suppressed (Schütz, Braun & Gegenfurther, 2011; Wedel & Pieters, 2008). Eye movement therefore provides us with objective measures of cognitive processes and information requirements, as eye movement is essential for many human actions (Wade & Tatler, 2011).

Research into eye movement and thus eye tracking research is increasingly more accepted in a wide diversity of research fields. This late entry into the academic field is not caused by a belated recognition of the value of objectively measuring a large part of human's input for cognitive processing. The main reason is technological, and a number of factors contribute to this rise: Devices are less obtrusive and more affordable, computers are more powerful to handle the large amounts of data, and the software that goes with the hardware is much more convenient to use.

4.2.2 Guiding our Sight

Where people look is determined by several factors. Based on a literature review, Schütz et al. (2011) present a model that explains the relationship between eye movement and perception (building on a more general model that was created by Fuster, 2004). The factors included in the model are salience, object recognition, plans and value. These factors can be divided in two widely recognised process categories: Bottom-up and top-down. The bottom-up process is where characteristics of the scene draw the vision of the observer. This form of visual attention is also called stimulus driven, or exogenous. The top-down process is where the observer determines what is looked at, which is also known as goal-driven, or endogenous attention (e.g., Corbetta & Shulman, 2002; Theeuwes, 2010). The top-down process is known

to subdue the bottom-up process, meaning tasks are an important consideration in eye tracking research (Kowler, 2011; Schütz et al., 2011).

4.2.3 Bottom-up Factors

We already know a great deal about bottom-up factors in eye movement research. Much of the debate in bottom-up factors is centred around saliency. Saliency refers to the vividness of specific items in scenes, how much they stand out compared to the rest of the scene. A number of factors attribute to the salience of a certain item. These include size, colour, shapes, edges, and luminance (e.g. Dreze & Hussher, 2003; Schütz et al., 2011). As one might expect, this exogenous form of visual attention happens mostly involuntary. Research indicates that the bottom-up process only has a modest effect on guiding observers' gaze. Tatler, Hayhoe, Land & Ballard (2011) even argue that saliency barely plays a role outside of the laboratory environment. Various other factors instead contribute to the top-down process (Tatler & Vincent, 2009).

4.2.4 Top-down Factors

Where the bottom-up approach describes how observers' gazes are influenced by characteristics of scenes, the top-down approach describes how features of the observer influence their gaze. This means top-down visual attention is more voluntary, as opposed to the automatic and involuntary bottom-up process. Various influential studies have identified that tasks or 'plans' have a significant effect on eye movement (for a review of these studies please refer to Hayhoe & Ballard, 2005; Land, 2006). In a number of studies, these top-down effects appear to over-rule salience effects completely (i.e., Einhäuser, Rutishauser, & Koch, 2008;Hayhoe, 2000; Land et al., 1999; Henderson, Brockmole, Castelhano, & Mack, 2007; Schütz, Braun & Gegenfurther, 2011).

To summarise, visual attention is important in researching cognitive processes, as it is a major part of obtaining information to make decisions in the case of judging crowdfunding campaigns as well as many other tasks. Visual attention is guided by two principles, bottom-up and top-down. Both can play an important role, yet top-down appears to overrule bottom-up.

Considering the newness of crowdfunding research, a rather substantial amount of effort has been spent to find indicators for the success of crowdfunding campaigns. The following factors of crowdfunding campaigns' success are identified in existing studies (Crosetto & Regner, 2014; Du, Li & Wang, 2018; Etter, Grossglauser, & Thiran, 2013; Forbes & Schaefer, 2017; Li, Rakesh, & Reddy, 2016; McNeill, Lawson, Raeside, & Peisl, 2018; Mitra & Gilbert, 2014; Mollick, 2014): Being featured on the crowdfunding platform website, higher numbers of updates, posting a pitch video on the project page, high numbers of pledges when the campaign starts, lower funding goals, shorter campaign durations, pre-selling the product as a reward, larger social networks, lower amounts of spelling errors, higher use of images on the website and short videos. The number of rewards was found to have an inverted U-shape when regressed against the actual success of campaigns (Jiang, Wang, Yang, Shen, Hahn, 2020).

4.3 Hypotheses Development

In this section the hypotheses of this study are developed by conceptually linking existing research to the research question. The first hypothesis is about fixation durations and the positivity of evaluations. Some interesting research already exists on fixation duration. Some is focused on product or brand choice, and therefore very interesting for crowdfunding research. The similarity stems from the fact that the crowd chooses to fund a project in a sea of others, much like how consumers choose a brand or product over others. In a recent study,

Behe, Bae, Huddleston & Sage (2015), researched product choice. Their results showed that higher involvement of participants with products was related to product choice. They measured involvement with fixation duration, visit count, and visit duration, which were all higher for the products they chose. The results correspond with earlier studies by Pieters and Warlop (1999) who showed that visual attention measures affected brand choice, where higher fixation durations again led to increased chances of product choice. Russo and Leclerc (1994), Pieters and Warlop (1999) and Lohse (1997) also found that time spent focused on a brand increased its consideration significantly. Based on these studies we form the following hypothesis:

H1a *Total fixation durations are positively related to the positivity of evaluations of crowdfunding campaign success.*

In addition to the positivity of crowdfunding campaign success predictions, the accuracy of these predictions is interesting as well. The speed-accuracy trade-off in (simple) decision-making problems is a well-known phenomenon (e.g., Bogacz, Wagenmakers, Forstmann & Nieuwenhuis, 2010). On the other hand, there is a large and growing body of literature that reports on accurate judgments from first impressions for highly complex tasks, such as the work on 'thin slices', which has been mostly concerned with interpersonal judgment (see e.g., Jacques, McDuff, Kim & Picard, 2016; Kahneman, 2011; Tackett, Herzhoff, Kushner & Rule, 2016), but has also found applications in website design (Kim & Fesenmaier, 2008; Lindgaard, Fernandes, Dudek & Brown, 2006; Peracchio & Luna, 2006). Thus, we can approach the problem from two opposing sides. Evidence from a more nuanced side that combines these views is also available. For example, Milosavljevic, Koch & Rangel (2011) find that accurate consumer choices (in accordance with earlier declared own preferences) of 70% have been measured at a mere third of a second (with average speed of 404

milliseconds). Their results showed accuracy improvements of 10% with higher decision times. It is important to keep in mind that Milosavljevic et al. (2011) used 'two alternative forced choice tests', very simple tasks and extremely short decision times.

As participants will view campaigns without time limits, I expect them to move on after their need for information has been satiated and as people have been shown to be able to make accurate judgments in extremely short timeframes, expect no difference in accuracy for shorter versus longer decision times. Therefore, we propose:

H1b *Total fixation durations are unrelated to the accuracy of evaluations of crowdfunding campaign success.*

In addition to the two main hypotheses, I investigate how attention on the different aspects of crowdfunding campaigns affects the evaluations of the crowd. We are interested in the effect of the length of the attention on a specific AIO, so how long the crowd looks at a specific aspect of a campaign. Just as with the first hypotheses, we look at the effect on the positivity of the evaluation (sometimes referred to as the perceived likeliness of success) and the effect on the accuracy of these evaluations. We follow the same reasoning as for the first two hypotheses and therefore expect that higher fixation durations are positively related to positive evaluation, but unrelated to accuracy. The content of the campaign is split up in text and images, to reveal differences between these two important elements. This also helps entrepreneurs in deciding where to focus their efforts. The previous leads to the following additional hypotheses:

H2a Fixation duration on the text is positively related to the positivity of evaluations of crowdfunding campaign success.

H2b Fixation duration on the text is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H3a Fixation duration on the images is positively related to the positivity of evaluations of crowdfunding campaign success.

H3b Fixation duration on the images is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H4a Fixation duration on the title is positively related to the positivity of evaluations of crowdfunding campaign success.

H4b Fixation duration on the title is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H5a Fixation duration on the pitch video is positively related to the positivity of evaluations of crowdfunding campaign success.

H5b Fixation duration on the pitch video is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H6a Fixation duration on the goal is positively related to the positivity of evaluations of crowdfunding campaign success.

H6b Fixation duration on the goal is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H7a Fixation duration on the rewards is positively related to the positivity of evaluations of crowdfunding campaign success.

H7b Fixation duration on the rewards is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H8a Fixation duration on the creator is positively related to the positivity of evaluations of crowdfunding campaign success.

H8b Fixation duration on the creator is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H9a Fixation duration on the 'FAQ, updates, comments, community section' is positively related to the positivity of evaluations of crowdfunding campaign success.

H9b Fixation duration on the 'FAQ, updates, comments, community section' is unrelated to the accuracy of evaluations of crowdfunding campaign success.

H10a Fixation duration on the 'tags and location' is positively related to the positivity of evaluations of crowdfunding campaign success.

H10b Fixation duration on the 'tags and location' is unrelated to the accuracy of evaluations of crowdfunding campaign success.

4.4 Methodology

4.4.1 Eye Tracker

In this study, we use a 'Tobii X60 Monitor Mount' eye tracker to collect data from participants who look at crowdfunding campaigns. As the name suggests, the small box-shaped device is installed to the monitor of a computer. The non-obtrusive eye tracker is used in combination with the accompanying software package. During the tracking process, infrared diodes create reflection patterns on the corneas of the user's eyes. These are combined with other visual information and then sophisticated image processing algorithms and complex mathematics calculate the positions of the eyeballs. Through this process it is determined where the user is looking, which is called the gaze point in eye tracking terminology. The eye tracker tracks with an accuracy of 60 Hz and allows the participants to move without restrictions. Glasses and contact lenses are not a problem. The device is capable of delivering a large variety of variables based on the collected data. In this study, we will focus on the total fixation durations of areas of interest as is common in eye tracking research.

4.4.2 Eye Movement Data

In the raw data produced by eye tracking, we discern fixations from saccades. Fixations are where people concentrate their gaze for a moment, generally between 200 to 500 milliseconds. Saccades are highly rapid movements in between fixations and typically last 20 to 40 milliseconds (e.g. Rayner 1998). Their combined pattern is called a scan path, as defined in the seminal work of Noton and Stark (1971). Analysing fixations and saccades is necessary to simplify the vast amount of data by combining multiple data points in single representative points that are called tuples (Salvucci & Goldberg, 2000). Reducing the amount of data serves at least two purposes. Firstly, little to no visual processing is achieved during saccades, this phenomenon is called saccadic suppression, which is why we do not perceive blurs in our vision when we quickly move our eyes (e.g. Fuchs & Luschei, 1971); Berman, Cavanaugh, McAlonan & Wurtz, 2016). It is also the reason the saccades are not analysed in this chapter. Secondly, minimal eye movements like tremors and flicks, often have no meaning in higher level analysis (Salvucci & Goldberg, 2000). Tobii has developed a sophisticated algorithm for discerning fixations from saccades, further information on this algorithm is available via contact through their website.

4.5 Sample

4.5.1 Participants

Participants were recruited from the student population of the Vrije Universiteit Amsterdam. An acceptable choice, as data from chapter 2 and 3 has shown that crowdfunding experience has no influence on positivity and accuracy of evaluations. We visited several classes taught by colleagues from the ‘Management & Organization’ Department of the School of Business

and Economics to recruit participants. Later, an email was sent to students who had not yet collected the required number of research credits for the year and had valid reasons for this. Total recruitment accounted for 21 students, who were rewarded with either a voucher for books or research credits. The age of the participants is between 18 and 27 with a mean of 21.7 and a standard deviation of 2.0. The vast majority of students (19) followed a business bachelor program, one was a business master student, and one did a non-business bachelor.

4.5.2 Crowdfunding Campaigns

The crowdfunding campaigns were selected from Kickstarter, as it is the largest reward-based crowdfunding platform in the world. All projects were selected from the technology section and had English as their main language. To create a fairly homogenous group, we chose to only include those projects who had written text, images and a pitch video. The first five of these campaigns that were to end successfully (in the 'ending soon' category on Kickstarter) and five that were to fail were selected in April 2018. This was apparent from their progression towards the monetary project goal; being either (almost) there or not close at all. When the campaigns had ended, the predicted results turned out to be correct. Projects that have ended change appearance on Kickstarter. Therefore, it is more convenient to use those who are still about to end.

4.6 Research Design

4.6.1 Process

When the crowd normally assesses whether a crowdfunding campaign is worth investing in, they evaluate the project's quality and whether the product has value to them. We invite the same quality assessing behaviour from our participants by asking them to estimate the success of crowdfunding campaigns based on screenshots of actual campaign pages from the

Kickstarter platform. This makes sure participants focus mainly on the quality of the project and largely eliminates personal preference from the equation.

We followed a straightforward procedure to gather our data. First, the participants take place behind the computer and receive instructions. Then, the eye tracker is calibrated, which is a short and simple process that involves the participant following (with his/her eyes) a moving dot that changes position on the screen. Subsequently, participants enter their demographic information. Then, a full screen edited screenshot of a crowdfunding campaign is shown. In this screenshot all information about the progression of the project towards the monetary goal has been removed, i.e. the progression in percentage (and monetary value) and how many of each reward have already been chosen. Participants have to scroll down to view the entire screenshot, just like when people visit projects on crowdfunding platforms. During instructions, participants are asked to assess each campaign for a minimum of one minute. When they are ready, they press a key on the keyboard of the computer and answer a question: “Do you think this campaign will succeed in reaching the monetary target?” . This question is answered with either ‘yes’ or ‘no’. Each participant estimated the success of 10 crowdfunding campaigns. When students were finished, they signed a list and were compensated with either research credits, which they need to graduate for they bachelor’s degree, or with a coupon for 10 euros to be used to buy books at most Dutch book shops.

4.6.2 Variables

The set of variables consist of the different parts of crowdfunding campaigns. Table 4.1 shows a comprehensive overview of these parts and their descriptions. In addition to that, we have incorporated a number of control variables, so we can control for the experience, education, age, and gender of the participant.

4.6.3 Areas of Interest

As stated before, for the quantitative part of this chapter, we focus on the total fixation duration of each area of interest that was created. Total fixation duration is a much-used term in eye tracking research. It simply measures how long a participant focuses on a specific area of interest. In this case we created several areas of interest that represent the different parts of the crowdfunding page. In the Tobii Studio software, areas of interest are created simply by dragging geometrical shapes over the images that were used in the study. We use rectangular shapes as elements were rectangularly shaped (images and text). Some areas of interest consist of the sum of multiple parts, for instance the text part of the campaign content. The list of used areas of effects with their descriptions is displayed in Table 4.1, in order of appearance on the crowdfunding page (top to bottom). We have also captured fixation counts, which is how often observers fixate their gaze within an AOI. However, these values were so highly correlated with their duration counterpart (>.9) that they would cause collinearity problems without adding significant amounts of information in further statistical testing. Therefore, these data have been omitted from further analysis.

Table 4.1 Variables with Their Description

Experience	Do you have experience in crowdfunding? Coded as: 1, no experience; 2, regular browser; 3, funded at least 1 campaign; 4, run at least 1 campaign; 5, run and funded at least 1 campaign.
Education	What program are you following? 1, Business related bachelor program; 2, business related master program; 3, none business related bachelor program; 4, none business related master program.
Age	The age of the participant in years.
Gender	The gender of the participant (male or female).
Creator	A small thumbnail picture, the name of the organisation or entrepreneur who proposes the project and how many Kickstarter projects the creator has started before.
Titles	A combination of the title of the campaign and the subtitle of the campaign, which is often a one-sentence description of the project.
Video	The main image that the crowd sees when first viewing a campaign, in this case, viewing the actual video was disabled.
Goal	The monetary target of the campaign.
Tags Location	A combination of two elements. The tags that describe the project and make it easy to browse more projects that share that characteristic plus the geographical location that the creator has entered.
FUCC	FAQ, Updates, Comments, Community: Hyperlinks that bring you to the corresponding pages. In the updates AOI, the number of updates that are provided by the creator is provided in superscript. The FUCC variable represents the sum (in seconds) of these smaller areas.
Text	The textual part is the sum of all textual parts of the main campaign content (the body), this excludes e.g. title, rewards and tags and location.
Image	The image part is the total content, with the textual part subtracted.
Rewards	This is where the rewards for funding the campaign are displayed. Different funding amounts generally entitle the crowd to different rewards.
Total	Here all the main AOI's of the campaign are summed. Subdivisions are not added (so they are not counted double).

4.6.4 Data

The 21 participants each estimate the success of each of the 10 crowdfunding campaigns. To increase the reliability of the data, I removed all cases with sums of total fixation durations under 10 seconds. In some cases, the eye tracker could not successfully capture enough reliable data to include in the sample, then the Tobii Studio software automatically removed the observation from the sample. This could happen for example by the participant focusing outside of the screen too much or closing their eyes for prolonged times. Each crowdfunding campaign has been validly assessed by 14 to 20 participants. Our data set therefore contains a total of 182 observations.

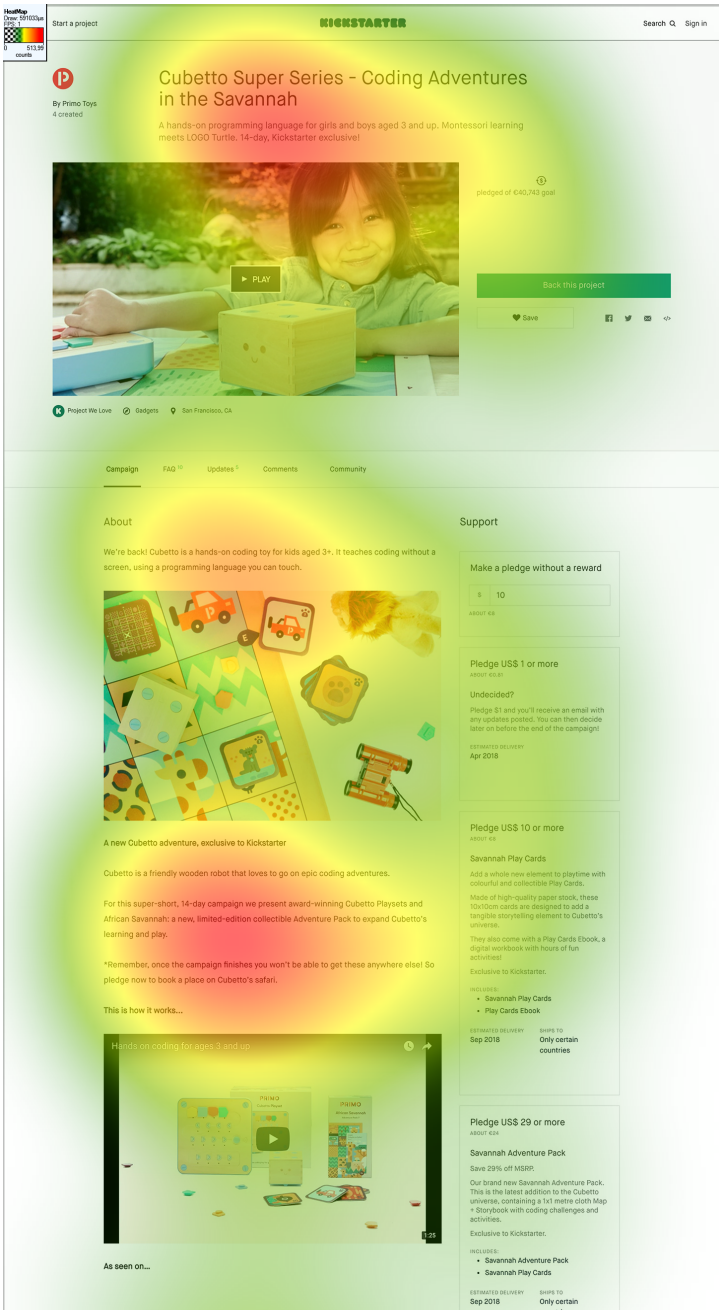
4.7 Analysis

The analysis consists of two parts, a qualitative and a quantitative part. Before we present the quantitative analysis, we explore the data in a qualitative manner. The qualitative analysis serves multiple purposes. It provides us with an initial overview of the gathered data. It can also provide insights that cannot be gained from our quantitative analysis, such as what people focus on within images, or whether people spend more time on the text higher or lower on the page. The qualitative analysis is based on viewing heat maps and does not include any statistical tests. More information on heat maps is provided below. The quantitative analysis uses specified areas of interest and measures exactly how long the crowd watches each AOI, this is related to the positivity and accuracy of the evaluations by means of statistical analyses.

4.7.1 Qualitative Analysis

Heat maps are visualisations of – in this case eye tracking – data. The images show what observers have looked at and with what intensity (duration). Different forms of heat maps can be used. In this case we use transparently coloured areas to indicate how much attention each part of the campaign has received. From least to most attention the following colours are used: Totally transparent, green, yellow, orange, red. Initially, we use aggregate maps from all participants for each campaign. This provides a single image that reveals where the participants have focused their attention. For an example of one of the heat maps, please see Figure 4.1.

Figure 4.1 Heat Zone Example



Note. Reprinted from Kickstarter.com (2018), retrieved from: https://www.kickstarter.com/projects/primotoys/cubetto-super-series.

When we look at the heat map images from each crowdfunding campaign, we immediately see that the title and subtitle gain a lot of attention. The centre of the pitch video, around the (now non-clickable) play button gets a little less attention and the monetary target again a

little less. It is remarkable that very little attention is paid to the information on the creator (top left) as information on creators is such an important and influential factor in conventional funding and findings in chapters 2 and 3 of this dissertation show the importance of portraying oneself as an organisation instead of an individual. Little attention is also paid to the geographical location of the initiative (directly beneath the pitch video), even though this factor gets much attention in the literature and has been shown to affect the funding of crowdfunding campaigns (Agrawal, Catalini & Goldfarb, 2015; Mollick, 2014).

When we begin to scroll down, it appears that the textual part of the content gets most visual attention. By far the most attention goes to written paragraphs, where details about the project and its creators are described. Images with textual parts in them seem to generate a lot more attention than those without words. The reward section also gains a fair amount of attention. Over the entire sample, it appears that people view the projects sequentially from top to bottom and loose attention over time.

Next, we split up each heat map in two maps, one that contains data of people who estimated that the campaign would be successful, and one with the data of those who thought it would fail. This is done for each individual campaign. One thing to keep in mind, is that the colour scheme of each heat map is based on the relative time spent on each location. This means we have to take into account the legend of each heat map, which tells us the number of seconds the reddest part of the heat map is. Overall, it appears that people spend relatively more time on the lower (scrolled down further) parts of the campaign when they estimate positively than when they estimate negatively. Other than that, there were no apparent differences that occurred for the majority of campaigns.

4.7.2 Quantitative Analysis

4.7.2.1 Descriptives and Correlations

Because this is one of the very first eye tracking studies in a crowdfunding setting, the descriptives of this study are already highly valuable in revealing how the crowd views crowdfunding campaigns. Respondents take, on average, 120.2 seconds to view all areas of interest in order to assess the success of campaigns. This was calculated by summing up the fixation durations of the individual parts. The standard deviation of 90.1 seconds shows a high variance between observations. As expected from the qualitative analysis, participants spend more time on the textual parts (57.2 seconds) of the campaign than on the images (41.7 seconds). The titles are viewed for 3.5 seconds, and the image of the video is viewed for 4.5 seconds, the rewards are viewed for 8.6 seconds. The goal, creator, FUCC and tags and location sections are all viewed for less than 0.2 seconds. The fixation durations of all areas of effect have high standard deviations compared to their respective means.

The correlations higher than .40 are images with text (when people spent more time on the images they also spent more time on text), education and age with tags and location (male and older participants spent more time on the tags and location area), and the total fixation duration with text and images (when people spent more time on the campaign, they spent more time on the text and images of the content, which are the biggest areas of the campaign). Please refer to Table 4.2 for more information on descriptives and correlations of the variables.

We conducted a binomial test to determine whether participants were able to estimate the success of crowdfunding campaigns significantly above chance levels (P = 0.5) our results show that this indeed is the case (p = 0.03).

Table 4.2 Descriptives and Bivariate Correlations

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Experience	1.21	0.69																
2 Education	1.15	0.49	-.10															
3 Age	21.7	2.01	-.03	.69**														
4 Gender	1.41	0.49	.07	.38**	.25**													
5 Text	57.20	61.40	-.19*	.02	-.08	-.04												
6 Images	41.66	31.15	-.14	-.03	-.02	.04	.57**											
7 Titles	3.51	3.12	-.05	.27**	.16*	.07	.24**	.09										
8 Video	4.50	2.89	.08	-.09	-.14	-.02	.10	.25**	.13									
9 Goal	0.08	0.23	-.11	-.05	.05	-.02	.03	.05	.01	.01								
10 Rewards	8.56	11.93	.09	.02	.12	.23**	-.01	-.02	.13	.10	.21**							
11 Creator	0.17	0.45	-.07	.32**	.16*	.19*	-.08	-.07	.15*	.07	.05	.17*						
12 FUCC	0.13	0.26	-.03	.17*	.04	.04	-.03	-.05	.09	.31**	.03	.19*	.38**					
13 Tags+Location	0.08	0.24	-.04	.44**	.42**	.13	-.03	-.02	.24**	.03	.15*	.16*	.28**	.22**				
14 Total	120.24	90.11	-.18*	.02	-.05	.01	.96**	.74**	.26**	.20**	.07	.12	-.05	.01	.01			
15 positivity	0.56	0.50	-.10	.01	-.03	.07	.25**	.25**	.03	-.01	-.08	.06	.00	-.10	-.02	.28**		
16 Accuracy	0.57	0.50	.07	.00	.01	.07	.04	.21**	.07	.17*	.12	.06	-.12	.04	-.04	.10	-.05	
17 Actual Success	0.48	0.50	.01	.01	.04	-.01	.01	.24**	.00	-.13	-.01	-.06	-.16*	-.12	.13	.06	.15*	.13

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). Only means and standard deviations from continuous variables are shown.

In addition to these descriptives and correlations, we choose to present the means of the fixation durations for the observations. This serves as a preliminary and exploratory look at the data and provides interesting information before we move on to the statistical tests. Table 4.3 shows the means of the time spent on each AOI for negative versus positive evaluations. Participants paid attention to the text for about 40 seconds when they evaluated a campaign negatively, and about 71 seconds when the estimated positively. For images these averages are about 33 seconds for negative and 49 seconds for positive evaluations. The total time spent on campaigns amounted to 92 seconds for negative versus 143 seconds for positive evaluations. For the remaining variables, please refer to Table 4.3.

Table 4.3 Means Negative vs Positive Evaluations

	Positivity	N	Mean	Standard Deviation
Text	Negative	80	39.94	34.47
	Positive	102	70.74	73.52
Images	Negative	80	32.82	22.12
	Positive	102	48.59	35.30
Titles	Negative	80	3.42	2.55
	Positive	102	3.59	3.52
Video	Negative	80	4.52	3.43
	Positive	102	4.48	2.40
Goal	Negative	80	.11	.25
	Positive	102	.07	.22
Rewards	Negative	80	7.78	11.87
	Positive	102	9.17	11.99
Creator	Negative	80	.17	.38
	Positive	102	.17	.50
FUCC	Negative	80	.16	.33
	Positive	102	.11	.19
Tags Location	Negative	80	.08	.27
	Positive	102	.08	.22
Total Fixation Duration	Negative	80	91.68	54.69
	Positive	102	142.64	105.16

Table 4.4 shows the same information for inaccurate versus accurate evaluations. Here, participants viewed text for about 60 seconds when they evaluated inaccurately, versus 54 seconds when they estimated accurately, a much smaller difference than for the negative versus positive evaluations. Images were paid attention to for 47 seconds for inaccurate versus 34 seconds for accurate evaluations. The total time spent on campaigns amounted to

128 seconds for inaccurate versus 110 seconds for accurate evaluations. For the remaining variables, please refer to Table 4.4.

Table 4.4 Means Inaccurate vs Accurate Evaluations

	Accuracy	N	Mean	Standard Deviation
Text	Inaccurate	104	59.53	65.77
	Accurate	78	54.10	55.30
Images	Inaccurate	104	47.22	35.41
	Accurate	78	34.24	22.51
Titles	Inaccurate	104	3.70	2.93
	Accurate	78	3.27	3.36
Video	Inaccurate	104	4.92	3.04
	Accurate	78	3.93	2.58
Goal	Inaccurate	104	.11	.27
	Accurate	78	.05	.17
Rewards	Inaccurate	104	9.14	12.10
	Accurate	78	7.79	11.73
Creator	Inaccurate	104	.13	.28
	Accurate	78	.23	.60
FUCC	Inaccurate	104	.14	.30
	Accurate	78	.12	.21
Tags Location	Inaccurate	104	.07	.22
	Accurate	78	.09	.27
Total Fixation Duration	Inaccurate	104	127.84	98.71
	Accurate	78	110.11	76.60

4.7.2.2 Binary Logistic Regressions

To investigate our first hypothesis, 1a – total fixation durations are positively related to positive evaluations of crowdfunding campaign success – we started with generalised linear mixed models. We started with a binary logistic regression on the positivity of the evaluations. As independent variables, we use the total fixation durations of the projects combined with control variables. Model 2 shows that fixation duration (TFD) appears to be a positive and significant predictor of positive project assessment. Model 2 shows a substantial increase in explained variance, with a (Nagelkerke's) R^2 of .136 compared to model 1's .024. This means the results are in support of Hypothesis 1a. See Table 4.5 for results.

Table 4.5 Binary Logistic Regression on Positivity

	Model 1				Model 2			
	B	*S.E.*	*Sig.*	*Exp(B)*	*B*	*S.E.*	*Sig.*	*Exp(B)*
Experience	-.326	.228	.153	.722	-.142	.235	.545	.868
Education	-.013	.445	.977	.987	-.001	.458	.999	.999
Age	-.051	.103	.625	.951	-.026	.108	.812	.975
Gender	.369	.336	.272	1.447	.322	.347	.354	1.379
TFD					.009	.003	.001	1.009
Constant	1.232	1.986	.535	3.428	-.509	2.116	.810	.601
Fit			R^2 =	.024			R^2 =	.136

TFD = Total fixation duration (entire time spent evaluating crowdfunding page).

We ran a similar regression on accuracy to test our next hypothesis: Higher total fixation durations are unrelated to accurate evaluations of crowdfunding campaign success. The

results show that the total fixation duration is not significant in this case. There is only a small difference in R^2 between the models. This, in combination with the fact that indicates that total fixation duration does not explain much variance, hereby providing support of Hypothesis 1b. See Table 4.6 for results.

Table 4.6 Binary Logistic Regression on Accuracy

	Model 1				Model 2			
	B	*S.E.*	*Sig.*	*Exp(B)*	*B*	*S.E.*	*Sig.*	*Exp(B)*
Experience	.189	.233	.416	1.208	.252	.236	.286	1.287
Education	-.142	.445	.750	.868	-.168	.446	.707	.846
Age	.017	.103	.870	1.017	.030	.104	.772	1.031
Gender	.312	.335	.352	1.366	.299	.336	.374	1.349
TFD					.003	.002	.142	1.003
Constant	-.579	1.975	.769	.560	-1.223	2.033	.548	.294
Fit			R^2 =	.013			R^2 =	.030

TFD = Total fixation duration (entire time spent evaluating crowdfunding page).

4.7.2.3 Binary Logistic Multiple Regressions

Many different opinions exist on how many observations are needed for multiple regressions. An often-used rule of thumb is to have at least 10 observations per predictor. Green (1990) advises to use at least 104 observations added with the number of predictors. We have 182 observations for 13 predictors, including control variables, enough to comply with these rules of thumb. We consider p-values smaller than .05 significant, as is common with this type of research.

Looking at the hypotheses, we start with positivity as dependent variable, we looked at the text (H2a), the images (H3a), the title (H4a), the pitch video (H5a), the goal (H6a), the

rewards (H7a), the creator (H8a), the FAQ, updates, comments and community section (H9a), and the tags and location (H10a) variables as independent variables. Of these only the text and the images appear to be statistically significantly higher for positive evaluations. We can therefore conclude that our results support Hypothesis 2a and Hypothesis 3a which stated that fixation durations of the text and the images of a campaign page are positively related to positive campaign evaluations. We do not find any support for Hypothesis 4a-10a. See Table 4.7 for results.

Table 4.7 Binary Logistic Multiple Regression on Positivity

	B	S.E.	Sig.	Exp(B)	Fit
Experience	-.148	.246	.547	.862	
Education	.229	.539	.671	1.258	
Age	-.072	.122	.556	.931	
Gender	.218	.368	.553	1.244	
Text	.010	.005	.038	1.010	
Images	.017	.008	.040	1.017	
Titles	-.029	.061	.628	.971	
Video	-.043	.065	.511	.958	
Goal	-1.231	.727	.090	.292	
Rewards	.018	.015	.232	1.018	
Creator	.286	.403	.478	1.332	
FUCC	-1.082	.755	.152	.339	
Tags Location	.080	.748	.915	1.083	
Constant	.587	2.405	.807	1.799	
					$R^2 = .185$

Focusing on accuracy as dependent variable, we again looked at the text (H2b), the images (H3b), the title (H4b), the pitch video (H5b), the goal (H6b), the rewards (H7b), the creator (H8b), the FAQ, updates, comments and community section (H9b), and the tags and location (H10b) variables as independent variables. The results show that fixation durations for the images are higher and for creator are lower when campaign success was estimated accurately. As we expected no differences between accurate and inaccurate evaluations, Hypothesis 3b and Hypothesis 8b are not supported. Our results are in support of Hypothesis 2b 4b, 5b, 6b, 7b, 9b and 10b, which state that fixation durations on the textual, the title, the pitch video, the goal, the rewards, the creator and the FUCC and the tags and location are unrelated to the accuracy of evaluations. See Table 4.8 for results.

Table 4.8 Binary Logistic Multiple Regression on Accuracy

	B	S.E.	Sig.	Exp(B)	Fit
Experience	.246	.246	.318	1.279	
Education	.394	.547	.471	1.484	
Age	-.016	.117	.893	.984	
Gender	.296	.378	.433	1.344	
Text	-.005	.004	.172	.995	
Images	.019	.007	.012	1.019	
Titles	.060	.057	.292	1.062	
Video	.091	.073	.209	1.095	
Goal	1.783	.979	.069	5.946	
Rewards	.002	.015	.882	1.002	
Creator	-.903	.452	.046	.405	
FUCC	.699	.800	.382	2.012	
Tags Location	-.913	.797	.252	.401	
Constant	-1.628	2.320	.483	.196	
					$R^2 = .170$

4.8 Discussion and Conclusion

The purpose of this chapter is twofold: First, investigating how much attention is paid to each part on a crowdfunding campaign. And second, relating this to the positivity and accuracy of campaign evaluations. This can help creators with designing their campaigns efficiently and crowdfunders to make informed decisions.

The qualitative analysis provides insights in where people look when they assess crowdfunding campaigns. One intriguing observation is that observers focus a lot of their attention on textual parts of the campaign content. This may well be explained by the fact that

processing text (reading) costs more time and effort than processing pictures. However, for creators it is still invaluable to know that people take their time to read text on crowdfunding pages, and that it may even have them stay on their page for longer. Another interesting observation is that the upper parts of the content receive more attention, these are the parts on the top of the campaign page (before scrolling down). This is a very plausible phenomenon as this part of the campaign includes the title and subtitle, the goal of the campaign and the pitch video (or in this case the picture thereof). This makes sense as creators make effort to capture attention as quickly as possible and explain their project well and. In addition, the crowd is used to reading from top to bottom. People appeared to spend more time on the middle and lower parts (scrolled down) as well when they evaluated campaigns positively. Plausibly, they are more inclined to invest time in viewing more of the campaign when they feel positively about it and/or stop viewing it when they see negative cues. This could hint in a direction of causality: Positive (first) impressions lead to longer time spent on a campaign page. Longer time spent on a campaign, may in its turn improve positivity, for example by reduction of initial negativity bias. The correlation table (Table 4.2) could support this idea, as video is positively correlated to images, which is positively correlated to text. As text and images are both the main parts of the total, they strongly correlate to total as well. Total, in its turn, is positively correlated to positivity. It is remarkable that the variable titles does not correlate the same way that video does. The case may be that the title is simply read, and that time spent on it, is largely explained by the length of the title.

Moving on to Hypothesis 1a: Total fixation durations are positively related to positive evaluations of crowdfunding campaign success. With regard to this hypothesis, we have found support in our results. The quantitative analysis showed that respondents did indeed view the projects longer when they assessed them positively, hence supporting Hypothesis 1a. This is in accordance with earlier work in a related setting of Krajbich, Armel and Rangel

(2010), who showed that longer fixations affect choice in binary options. It also corresponds to the results of Chapters 2 and 3 of this dissertation. Even though we did test this already in Chapter 2, the current study does not provide conclusive insight on causality. Longer investigations may lead to more positive assessments, as well as the other way around. It could be that people immediately formed positive judgments and kept looking longer when these judgments were positive. Another possibility is that when the crowd did not see any proof to counter-indicate a successful project, it continued looking.

Our results also supported Hypothesis 1b: Total fixation durations are unrelated to accurate evaluations of crowdfunding campaign success. At first sight, this could seem as counter intuitive, decision speed is often claimed to be inversely related to accuracy (e.g. Bogacz, Wagenmakers, Forstmann & Nieuwenhuis, 2010). However, as further elaborated upon in the literature section, there is literature that reports on the accuracy of snap judgments, of which thin slices (e.g. Kahneman, 2011) is an example. In addition, Chapter 2 of this dissertation showed that changing the time constraints of participants did not affect their ability to predict the success of crowdfunding campaigns, even for very strict time constraints.

Looking at the additional hypotheses, we start with those with positivity as dependent variable; the text (H2a), the images (H3a), the title (H4a), the pitch video (H5a), the goal (H6a), the rewards (H7a), the creator (H8a), the FAQ, updates, comments and community section (H9a), and the tags and location (H10a) variables as independent variables. Of these only the text (H2a) and the images (H3a) appeared to have significantly longer fixation durations for positive evaluations compared to negative evaluations. This implies that participants looked longer at the text and image parts of the campaigns when they estimated them to be successful. When compared to the results of the viewing behaviour of accurate evaluations, images (H3b) and the information on the creator (H8b) were positive and

negative predictors respectively. As we expected no effect, these two hypotheses were not supported.

It is interesting that longer observations of the images on a crowdfunding campaign are related to positive as well as accurate evaluations, and that fixation duration on the text was only related to positive evaluations. This suggests that the images on the campaigns, both helped the creator in convincing the crowd, as it helped the crowd in making an accurate evaluation, where text was only helpful to the creator, making evaluations more positive, but not more accurate.

As the information on the creator (see figure 1 for an example), was a negative predictor for accurate evaluations, this could mean that when participants were unsure of the eventual success of a campaign, they paid more attention to the creator.

4.8.1 Limitations

Some notes on biases in eye tracking have to be made. Multiple eye tracking studies have revealed that visual attention is prone to biases (e.g., Shaw & Bagozzi, 2018). Within a given category of products on shelves, more visual attention is payed to the upper and middle parts (Chandon, Hutchinson, Bradlow & Young, 2009) of the visual field, meaning that fixation durations are especially high on products in the upper and middle part of a section. In online settings a bias also exists, but instead of the upper half, people tend to focus more on the centre of the screen (Tatler, 2007). These kinds of biases can also be of influence in the current study, possibly influencing our results. For example, less attention could have been focused on elements further from the centre of the campaign, such as the goal and rewards. This could have made predictions less accurate.

When asked to select a product from a row, those in the centre of the computer screen are about 60 percent likelier to be chosen (Reutskaja, Nagel, Camerer, & Rangel, 2011). This

corresponds to the findings of Bindemann (2010), who found that observers are prone to fixate on the centre of their screen when viewing images. However, this is partly explained by photographers' bias to place interesting features located near or at the centre of their photos. In a crowdfunding context, this behaviour could result in respondents paying less attention to objects further away from the centre of the campaign, such as the goal and rewards. As observers were also novices in this case, these bottom-up factors may not have been totally overruled by a top-down process as much as they would have for those with even a little more crowdfunding experience; experienced crowdfunders may have knowledge that guides them to pay attention to specific parts of campaigns. The crowd does consist of large numbers of novices, so it is still vital to know their behaviour. In addition, these biases would apply in both positive versus negative and accurate versus inaccurate observations and therefore did likely not impact the results of the statistical tests.

Other limitations include the limited number of respondents. Moreover, the focus of only technology-themed reward-based crowdfunding projects can be expanded to other sectors as well to increase generalizability of the findings. A technical limitation of this study is that Kickstarter allows gifs (moving images) to be included on campaign pages. Due to the methodology of our study, we only provided a snapshot of these otherwise moving images. These moving images may have grabbed the interest of respondents or signalled a form of professionalism that might have made evaluations more positive. Future researchers could use a modified version of the source code in a web browser to present the respondents with an even better representation of the actual campaign. An extra benefit of such an approach is that e.g. the pitch video would be playable.

4.8.2 Future Research

This study contributes to the emerging literature on eye tracking research in a crowdfunding setting and can inspire a vast variety of follow up studies. First, it would be interesting to see the results of a similar study with other forms of crowdfunding, for example crowdfunding with financial rewards. Different platforms have different layouts. These differences can be larger for platforms that deal with different types of crowdfunding. For example, some crowdfunding platforms are purely geared towards providing small businesses with loans from the crowd. These platforms sometimes thoroughly check financial statements of the applicants thoroughly and assign a risk classification. They then provide little information to the investor. Investors on these platforms are mostly motivated by financial returns and when they trust the risk assignment of the platform, can make decisions quickly and thus efficiently. All this of course influences the viewing and judging behaviour of the crowd. Positivity, for example will likely be much less influenced by more rich and vivid information, and more – or even mostly – by the risk assessment that may exist of a single letter.

Secondly, even though the crowdfunding crowd exists of a large variety of people, most being novices and fewer being experts, an interesting and promising next step would be repeating this study with crowdfunding experts and comparing their results to those of the current or another novice sample. Dreze and Hussherr (2003) found that experts spend less time on web pages and do not inspect as many regions as their fellow novices. Experts' scan paths appeared to be more regular and more efficient. This would mean that these scan paths are more influenced by top-down, than bottom-up processes. Finding out which areas gain more attention from experts if their scan paths are more efficient provides valuable information for crowdfunders as well as creators. Enabling investors to optimize their way of

evaluating campaigns and creators to pay close attention on the parts that experts find important.

Thirdly, another interesting research direction is figuring out the causality between longer time spent on a crowdfunding page and more positive assessments. This could be done in a study in which a large number of participants predict the success of crowdfunding campaigns with varying amounts of time to spend on each campaign. In a part of the survey, they are asked to make a quick assessment of a campaign, and are then asked to have another, longer look to see if their assessments become more positive when they spend more time.

CHAPTER 5 - Conclusions

5.1 Introduction

Over the course of three distinct chapters that contain four studies, this thesis has focused on solving a number of questions about influencing factors on the crowd's perceptions of crowdfunding campaign success. Using primary data, collected mainly through quantitative methods, various aspects that affect the perception of crowdfunding campaign success have been assessed. This chapter discusses the answers to each research sub question of the dissertation and continues by answering the main research question of the thesis. After this, the contributions to the literature will be explicated and limitations and future research opportunities will be elaborated upon, along with practical implications. Lastly, the dissertation ends with an overall conclusion.

The body of literature on crowdfunding is growing rapidly. Finding out what makes crowdfunding campaigns successful is one of the main goals of scholars, and many interesting articles have been published on this subject. Hoegen et al. (2018) provide an overview of studies related to decision-making in crowdfunding and categorize existing findings in the following categories: Benefits and quality, financial risk and campaign statistics, founder perception and attributes, social relationships and endorsements, and context. A crucial note that they make is that only a few of the 68 reviewed articles actually pay attention to the decision-making; of these, around 86% use secondary data and only 26% use some form of primary data. In addition, even though cognitive and psychological factors are well recognised to be of influence in traditional financing literature, the majority of extant studies have not focused on the decision process but use campaign success as a proxy for investor decisions. This might give a biased perspective as the success of campaigns may be dependent on other factors, such as the sheer number of visitors on a crowdfunding project. A common strategy for creators is to spend a lot of money on social media marketing to have many people of their target audience visit their project. Even if only a tiny fraction of those

people supports the project, it can be a success. Therefore, this dissertation sets out to shed light on the decision process of individuals in the crowd and acknowledges cognitive, affective and heuristic factors in this process, which have not yet been sufficiently researched (Hoegen et al., 2018).

In order to give creators (crowdfunding individuals and organisations) a better understanding of the crowd's perceptions of their campaigns, the main research question of this dissertation reads: *Which factors influence the judgment of the crowd when assessing the success of crowdfunding campaigns?* To answer this question, it is divided into three sub questions. For all these sub questions, the goal of highlighting differences in the decision processes of the crowd remains, therefore the dependent variables stay the same: The accuracy and positivity of crowdfunding campaign evaluations. The main differences in the chapters are in the independent variables; the first sub question investigates the effect of assessment time, the second the effect of watching a pitch video, and the third the attention on all elements of campaigns. The independent variables are connected in the sense that they are all concerned with information processing of individuals in the crowd.

5.2 Answers to Research Questions in the Empirical Studies

5.2.1 Assessment Time

The first sub-question of this thesis is: *What is the effect of assessment time on the accuracy and positivity of crowdfunding campaign success evaluations?* This sub question was answered in two studies. The first study was one with a lower number of participants, but each participant evaluated a higher number of crowdfunding campaigns. Their answers were recorded by the researcher personally and participants were interviewed afterwards. In the second study, the time constraint was made much stricter and the digital character of the

survey allowed the number of participants to be drastically increased. The two studies captured in the first chapter are dedicated to answering the important question about the effect of assessment time on the evaluation. Like a large part of the extant literature, the studies aim to identify important factors of the success of crowdfunding campaigns. However, where previous work was concentrated on aggregated results, my studies focus on individual perceptions in more controlled environments. Studies that focus on aggregated (actual) results are subject to more unobservable but probably significantly influential factors, such as how much traffic the project has gotten. This traffic can be the result of the quality of the campaign, but also from additional marketing campaigns. Moreover, instead of focusing merely on elements that can directly be found on the campaigns, as is commonly found in the existing literature, my studies introduce another factor: Assessment time. Participants were assigned to one of two conditions; where they had unlimited time, or where they had instead very limited time to evaluate a campaign. The results of this study are very important to scholars and practitioners alike.

The findings indicate that negative cues catch the eye of the crowd rather quickly. However, when more time is spent on assessing a campaign, this negativity bias decreases. In other words, longer assessment times lead to more positive evaluations. These findings dispute the idea that individuals arrive at more negative evaluations when they have more processing time, as a consequence of automatic vigilance bringing negative cues into awareness (Pratto & John, 1991). In sum, the first answer on the first sub question reads: Longer assessment times lead to more positive crowdfunding campaign success evaluations than shorter evaluations.

The second conclusion to the first sub-question of the dissertation is that it appears people are able to predict success from short assessments accurately, and that spending more time does not lead to more accurate evaluations. The fact that the predictions in the short time

condition were more negative but not more accurate shows that these initial judgments are negatively biased.

Other interesting observations of significant predictors of positive assessments that occurred in both studies are: Presenting oneself as an organisation (instead of as an individual) and a higher number of rewards. For accuracy, none of the variables predicted accuracy in the second study, and therefore no other variables were significant in both studies.

5.2.2 The Pitch Video

The second sub-question of this thesis is covered by the third chapter and reads: *What is the effect of having watched a pitch video on the accuracy and positivity of crowdfunding campaign success evaluations?* Pitch videos are often optional on crowdfunding platforms and can cost a lot of resources to make. Existing crowdfunding literature has shown that the presence of a pitch video is positively related to the success of crowdfunding campaigns. However, no evidence was documented of the effect of having actually watched the pitch video. The third chapter focuses on this question and aims to help creators in the decision for making a crowdfunding pitch video, and how much resources to spend on it. The effect of having watched a crowdfunding pitch video is researched specifically in relation to the positivity and accuracy of the campaigns' success evaluations, thereby distinguishing how it persuades the crowd and provides it with accurate information. Participants were provided with various crowdfunding campaigns. For each campaign, they were randomly assigned to one of three conditions: Only the pitch video of the campaign, only a screenshot of the entire campaign, or both the video and the screenshot.

The results of this study tell us about the effect of a pitch video on the positivity and accuracy of the crowd's evaluations of crowdfunding campaigns. Starting with positivity,

having watched a pitch video in addition to a screenshot is related to positive evaluations of campaign success, thus providing preliminary evidence that a crowdfunding pitch video is an effective means to persuade the crowd of the quality of a campaign. It is important to note, however, that the findings did not portray any significant differences in the positivity of evaluations, when comparing static (screenshot) versus dynamic (video) information alone. Following the essence of information diagnosticity theory (Aboulnasr, 2006), which indicates that providing more information would increase the chances of crowdfunding campaigns (Koch & Siering, 2015), this is in accordance with literature on vividness in a crowdfunding setting (Jiang and Benbasat, 2007).

The results did not show any significant effect on the accuracy of the evaluations. It is very interesting to see that the accuracy and the positivity of the evaluations did not differ between the screenshot only and the video only conditions. These types of media appeared to be equally effective in informing and persuading the crowd of the quality of crowdfunding campaigns. It is possible that creators carefully choose which information to provide via which channel and that the video and the rest of the campaign complemented each other. This would explain how video and text generate a more persuading whole when both are regarded, as seen in the results.

To conclude the second sub-question of this dissertation, having watched a pitch video (in addition to having watched a screenshot of the campaign) has a positive effect on the positivity of evaluations, while having no effect on their accuracy. This means that providing a decent pitch video can be an effective tool for creators to convince the crowd of the quality of their campaign. In addition, members of the crowd could probably skip watching either the pitch video, or the rest of the campaign when they are in a hurry and still get an equally accurate assessment of the eventual success compared to when they would view both the video and the campaign.

Other interesting observations of significant predictors of positive evaluations are confirming the results of the first two studies (see Chapter 2): Presenting oneself as an organisation instead of an individual, and higher numbers of rewards. For accuracy, higher goals are associated with more accurate evaluations.

5.2.3 Attention

The final sub-question of this dissertation is about the effect of attention to the various aspects of a crowdfunding campaign on the evaluations of its success, and therefore reads: *What is the effect of the attention to the different aspects of crowdfunding campaigns on the accuracy and positivity of crowdfunding campaign success evaluations?* Existing crowdfunding research has focused on identifying which factors are present in successful crowdfunding campaigns. Building on these results, we are starting to get a better understanding of which elements are wise to include. However, what we do not yet know is what the effect of attention to these elements is on individual evaluations of the crowd. As such, the fourth chapter was designed to measure the attention time on the various aspects of crowdfunding campaigns and explain the relation of these aspects to the positivity and accuracy of campaign evaluations.

The qualitative analyses presented in Chapter 4 showed that people pay much attention to the textual parts of campaigns. In addition, the upper parts of campaigns (top) gain more attention than the lower parts (bottom). People appear to spend more time on the middle and lower parts (scrolled down) when they evaluate campaigns positively than when they evaluated negatively. Plausibly they are more inclined to invest time in viewing more of the campaign when they feel positively about it and stop viewing it when they see negative cues. Hinting in a direction of causality: Positive (first) impressions lead to longer time spent on a campaign page. Longer time spent on a campaign in turn improves positivity, plausibly

by reduction of initial negativity bias (see Chapter 2). The quantitative analyses show that longer total observations per campaign are related to more positive, but not more accurate evaluations of success, as in Chapter 2, but in this case, the participants chose how long they spent on each campaign. The quantitative analyses showed little differences between the attention on the individual aspects when comparing positive versus negative, and accurate versus inaccurate evaluations. However, the text and image parts of the campaigns show significantly higher attention durations for positive predictions. Lower fixation durations on the creator and higher fixation durations on images are associated with more accurate evaluations. Interesting here is that longer attention on the textual parts of the content are related to more positive, but not more accurate evaluations. Apparently, the stories told are an important tool for convincing, but not for informing the crowd.

5.2.4 Overview of Answers to the Sub-questions

To summarise these conclusions, Table 5.1 shows the significance of the various factors used over the chapters on the positivity and accuracy of crowdfunding campaign success evaluations. What immediately stands out is that nearly all factors are positively related to positivity (longer evaluations, watching a video in addition to the rest of the campaign, the attention time on the total evaluation, the text part of the campaign, and the images of the campaign) whereas only two are negatively related (Video in addition to screenshot and attention time on the creator) and one is positively related (attention time on images) to accuracy. As it appears, the relation between the investment of time or effort with positivity is clearer than with accuracy when evaluating the success of crowdfunding campaigns. This result seems to be beneficial to creators, as it implies that factors can be changed to make evaluations more positive, thereby enabling creators to increase the chances of a successful

crowdfunding campaign. Increasing the accuracy of possible investors in the crowd appears to be not so straight forward.

Table 5.1 Significance of Influence of Factors on Positivity and Accuracy of Crowdfunding Campaign Success

	Positivity	Accuracy
Assessment time	+	0
Video (in addition to screenshot)	+	-
Attention time total	+	0
Attention time text	+	0
Attention time images	+	+
Attention time creator	0	-

5.3 Answer to the Main Research Question of the PhD thesis

The three sub-questions that were covered, are designed to break down the main research question, and help answer it. This main research question reads: *What influences the judgment of the crowd when it assesses the success of crowdfunding campaigns?* It is an important question, as it helps to focus on identifying important factors that affect individuals' evaluations of crowdfunding success. It therefore complements existing work that is often based on web-crawled information from crowdfunding campaigns and regressed to final outcomes.

The results of Chapter 2 and Chapter 4 show that first impressions versus longer evaluations have an effect on the crowd's judgment. Both chapters conclude with the notion that longer assessment times are related to more positive, but not more accurate evaluations. The fact that both these studies come to the same conclusion strengthens these individual

findings. Due to the different designs of the two studies, we are even provided with a good impression of the causality at work. In Chapter 2, people were assigned to a condition with very little versus unlimited assessment time. Therefore, we know that when people are required to spend longer on a campaign, their evaluations become more positive. In Chapter 4, no such assignment has taken place, meaning participants decided how long they spent on assessing a campaign. Therefore, we know that when people are free to choose how long they spend on a campaign, they do so longer on those campaigns that they evaluate as successful. In the second chapter we find that having watched a pitch video in addition to the screenshot relates to more positive, but not more accurate evaluations compared to the screenshot alone.

Regarding all three chapters, we see three main common trends. Firstly, people are able to estimate the success of crowdfunding campaigns from very little time spent on a campaign. Secondly, adding more information and/or assessment time does not make people more accurate in their evaluations. Thirdly, increasing the amount of information and/or assessment time, makes people's evaluations more positive.

This dissertation has made various contributions to literature and provides a number of interesting practical applications, which are presented in the next sections.

5.4 Contributions to Literature

As finding out what makes crowdfunding campaigns successful is one of the main goals of scholars who focus on crowdfunding, this dissertation contributes to this goal by attending to the decision-making processes of the crowd funders. All factors in Table 5.1 that are positively related to the positivity of crowdfunding campaign predictions will ultimately increase the chances of success for creators. More in detail, this dissertation contributes to the literature in the following ways.

First, the results of the chapters follow the reasoning that the shorter the time allowed to consider information; the more individuals rely on heuristics. As a consequence, the negativity bias has a larger impact, because there is less time to reconsider the initial predominance of negative cues. These findings stand in contrast to the idea that individuals arrive at more negative evaluations when they have more processing time, as a consequence of automatic vigilance bringing negative cues into awareness (Pratto & John, 1991). Although automatic vigilance may indeed do this, it does not augment the predictions' degree of negativity. According to category diagnosticity theory, negative cues tend to be more diagnostic compared to positive cues (Skowronski & Carlston, 1989). However, the theory does not stipulate whether this leads to more or less negative judgements under conditions of information processing constraint or abundance. This research clarifies that longer assessments of crowdfunding campaigns lead to more positive judgements, which represents a first contribution of this dissertation.

Second, the dissertation reveals whether people are able to predict, above chance level, the success of crowdfunding campaigns from first impressions, and to compare the accuracy of decisions when using more time and information, versus less time and information. Results show that people are able, above chance levels, to accurately judge campaign success in a very brief time frame and based on limited information. These findings are in line with studies using thin-slice methodologies that have reported on the accuracy of – mostly interpersonal – immediate judgements (e.g., Ambady & Rosenthal, 1992; Ambady, Krabbenhoft & Hogan, 2006). At the same time, the accuracy prediction rates over the chapters show that further room for improvement is possible.

Third, the studies show that more thorough investigative efforts do not add to predictive accuracy compared to judgements based on first impressions. A classic trade-off noted by decision theorists is that decision accuracy is inversely related to decision speed

(Bogacz, Wagenmakers & Nieuwenhuis, 2010; Wickelgren, 1977). This dissertation shows that this does not apply when estimating whether a crowdfunding campaign will be successful – predictions were found to be equally accurate regardless of whether participants were given limited or ample time to study a crowdfunding website. Thus, a third contribution of this dissertation is that it adds to the weight of the evidence that system 2 does not necessarily outperform system 1 in evaluation and judgement tasks (Kahneman & Klein, 2009).

Fourth, this dissertation finds no significant differences on either the positivity or accuracy of observation based on screenshots or instead video only. The information-rich, dynamic visual display, which allows for multiple forms of media to work together simultaneously does not appear to be an effective way of reducing information asymmetry and does thereby not aid the crowd to make accurate estimations.

Fifth, viewing both the screenshot and the video together yielded more positive evaluations than either of them alone. Where the literature on media richness theory (Kahai & Cooper, 2003), information diagnosticity theory (Aboulnasr, 2006; Koch & Siering, 2015), cue summation theory, multimedia learning theory (Butcher, 2014) and cognitive load theory (Sweller, 2011), was inconclusive with regard to predicting if crowdfunding evaluations would become more positive or more accurate, now we know that evaluations do become more positive, but not more accurate when the amount of information is increased in volume and types of presentation.

Finally, a contribution is made to eye tracking research (Du, Li & Wang, 2019; Hsieh & Liu, 2017) by both qualitatively and quantitatively analysing data in a crowdfunding setting, and to crowdfunding research by being one of the first to use eye tracking technology in the field. The results reveal how much time is spent on each aspect of a crowdfunding campaign. However, they do not show large differences in this particular part of viewing

behaviour between positive versus negative and accurate versus inaccurate evaluations, although, with positive evaluations, more time was spent on less immediately visible information. This study contributes to the emerging literature on eye tracking research in a crowdfunding setting (Du, Li & Wang, 2019; Hsieh & Liu, 2017) and can inspire a vast variety of follow-up studies to further investigate how viewing behaviour can influence decision-making in crowdfunding, and even how campaign or platform design can influence viewing behaviour.

5.5 Practical Implications

Providing entrepreneurs with useful information has always been an important reason for conducting these studies and writing this dissertation. In this paragraph, the most impactful and easy to implement practical implications of the dissertation are presented.

When spending more time on a campaign makes evaluations more positive, and people also choose to spend more time on a campaign when they feel positive about it, creators may want to avoid providing the crowd with negative cues , if they want their crowd to enter this virtuous cycle. This could decrease chances of immediate negative evaluations and losing the interest of the crowd, causing them to leave the crowdfunding page, and as a consequence, not support it. Therefore, creators should do whatever is in their power to avoid mistakes such as spelling errors. Employing a number of people to check for these types of mistakes and providing an overall evaluation of the campaign before it is launched can prove to be a highly effective method of increasing its chances of success.

People who have funded the campaign are allowed to make comments, and founders provide updates about campaign success. Subsequently, the crowd uses this information, together with information on the current progression towards the monetary goal and the number of people who have already invested, as a means of gathering social proof, i.e.

looking at others for verification of one's thoughts or actions. Thus, founders should encourage their networks to become early contributors in order to lure later investors. Although strong ties may not require much persuasion, the question remains as to how creators can best entice those who are not characterised by strong ties to become initial funders supporting their campaigns. This dissertation provides insights by conducting research in a setting where participants do not know the creators of the campaigns and where information on the progression of the campaign such as the amount of money invested and the number of current investors are omitted.

Other interesting observations are that campaigns of creators who portray themselves as a company or organisation instead of an individual, are related to positive estimations. Coming up with a name and logo for an organisation may therefore be yet another effective strategy for creators to increase the positivity of their campaigns' evaluations. This is an especially efficient strategy for creators as it does not have to cost much time and other resources while increasing the positivity of the crowd. Additionally, including more rewards for the crowd to choose from increases the positivity of evaluations. This is an important finding, as it may be easy to increase available options which in turn could give better chances of reaching the monetary target.

5.6 Research Limitations and Opportunities for Future Research

This dissertation is not without limitations. First, the research focuses on the initial impressions of campaigns that were depicted as if they had just been launched, leaving current progression, comments and updates out of the study. In reality, the number of updates and comments on a crowdfunding project page correlates with the chances of campaign success (Block, Hornuf & Moritz, 2018; Colombo, Franzoni, & Rossi-Lamastra, 2015). Thus, the dependent variables in this dissertation have been affected by other factors than just those

included in the designs of the studies. Including such variables in future research will lead to models that explain the data more completely, ultimately furthering our understanding of what makes people contribute to crowdfunding campaigns.

Judgements in conditions that provided more time or information to study the campaigns were found to be more positive than those in the short condition, although they were not more accurate. An interesting opportunity arises for researching the workings of the phenomenon known as confirmation bias – that is, the search for cues to confirm initial impressions (Oswald & Grosjean, 2004). Future research can further investigate the phenomenon by conducting an additional experiment, in which participants are shown a campaign for a short amount of time or provided with a low amount of information, make an estimate, then study the same campaign for longer or with more information, and are again asked to make an estimate.

The omission of qualitative characteristics of crowdfunding campaigns could have implications for the results. Innovativeness is a specific example, as this characteristic has been shown to be a significant predictor of actual crowdfunding campaign success (Char & Parhankangas, 2017). Including such qualitative characteristics can be a time-consuming and costly endeavour. In such cases it is very important to have multiple skilled researchers that have experience with the matter and have a clear and matching understanding of the concept that they are operationalising. Starting with a smaller of crowdfunding campaigns on opposite ends of the innovation spectrum could provide an effective way of testing the waters before spending all precious research resources. While researching the influence of variables with more qualitative characteristics like innovativeness may prove to be challenging and laboursome, it will provide a deeper understanding of the mechanics at work when the crowd judges crowdfunding campaigns.

A technical limitation of this dissertation is that Kickstarter allows gifs (moving images) to be included on campaign pages. Due to the methodology of our study, we only provided a screenshot of these otherwise moving images. Following the results from chapter 3, which indicate that the addition of richer data enhances the positivity of the crowd, these moving images could play an important role in capturing attention and motivating to keep evaluating. In turn, this could have a positive effect on the positivity of the results. Including these gifs asks for a different approach. Gathering the source codes of the web pages and editing out the progression-revealing information can be an effective way to include these gifs. This approach has another benefit, namely that the video and the rest on the campaign will be shown (and playable) in the same manner as on the platform itself. In this dissertation, these elements were on two different pages of the online surveys, which gave more control over the conditions, but varies a bit from the real-world setting.

Finally, this dissertation was focused on reward-based crowdfunding. It would be interesting to see the results of a similar studies with other forms of crowdfunding, for example loan-based or equity-based crowdfunding. For many people these types of crowdfunding are not only an interesting way to support creators or projects, but they can also serve as part of an investment portfolio. These different motives to participate in a project may change the viewing behaviour of the crowd and the factors which influence their judgments. For example, some crowdfunding platforms mainly provide small businesses with loans from the crowd. Busines analysts from these platforms analyse financial statements of applicants and assign risk classifications, which are provided to the crowd= along with very limited additional information. In these cases, positivity, for example will likely be less influenced by more rich and vivid information, and more – or mostly – by the risk assessment that may exist of a single letter.

5.7 Overall Conclusion

When integrating the information from the results of the studies conducted within this dissertation, the most important take-away arguably is that people become more positive about crowdfunding campaigns when they spend more time on them. It therefore may be the case that people use system 1 to swiftly and automatically judge a project and system 2 to confirm their (positive) first impression.

This phenomenon reminds of the proximity principle, which explains that proximity (and the frequency of encountering one another) is one of the most important predictors of relationships. This also relates to the mere exposure effect, sometimes called the familiarity principle, which is a phenomenon by which people build preference for a wide range of things they are familiar with. It's interesting to see a variation of these principles at work in such short instances in a crowdfunding setting.

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Summary English

Crowdfunding is an important instrument that helps entrepreneurs to realise projects by facilitating financial capital, sourced directly from larger numbers of individuals. Driven by the opportunities that the internet and social media bring, crowdfunding's quick rise in popularity and widespread use evoke many questions that need answering. Those who invest in crowdfunding do so differently than other investors: They generally base their decision on information provided on a single webpage and invest much smaller amounts of money. This dissertation focuses on the evaluation process of individuals in the crowd, when they view a crowdfunding campaign. This helps entrepreneurs with creating effective campaigns, and investors to predict success more accurately.

Identifying indicators for successful crowdfunding campaigns has been one of the main goals of crowdfunding research to date. Here, scholars aim to find clues on crowdfunding campaigns that predict whether it will be successfully funded. This is an interesting domain with direct value for entrepreneurs. When entrepreneurs know what successful campaigns look like, they can mimic them and increase their chances of being funded.

The most used technique for researching crowdfunding success indicators is crawling (automatically harvesting) data from existing crowdfunding pages and modelling for the success of the campaign. Factors beyond those visible on campaigns, which are therefore not included in these studies, may however influence the results. For example, successful campaigns could have been better (or more heavily) marketed by their teams, leading to more appropriate campaign page visitors. To add to the existing body of literature, the following main research question has been formulated: "*Which factors influence the judgment of the crowd when assessing the success of crowdfunding campaigns?"*

In this dissertation, participants are asked to estimate whether crowdfunding campaigns will be successfully funded. The campaigns that are used are actual campaigns (not made up for the purpose of the research). However, they are photoshopped as to not give away any information on investments that had been placed. Responses are characterised as positive or negative depending on whether participants thought the campaign would be successful (positive) in raising the funds or not (negative). When these estimations were congruent with reality, they were also characterised as accurate (or as inaccurate when they did not correspond to reality). Over the course of the chapters, I focus on specific subtopics. By creating different conditions for participants, the effect of how long people view a crowdfunding campaign is researched over two studies. Second, participants were exposed to different types of information – static screenshots, the pitch video, and both – to determine what their effect is. Finally, an eye tracker was utilised to map what people look at when they evaluate crowdfunding campaigns, and how this relates to their evaluations.

Chapter 2 is the first empirical chapter and aims to establish whether the crowd's predictions of the success of crowdfunding campaigns based on short assessments are as positive and as accurate as those derived from longer assessments. Participants estimate the success of crowdfunding campaigns in two conditions: With (very) limited and unlimited time. The results show that prediction accuracy in both conditions is equal, yet longer evaluations result in more positive assessments. The use of different conditions facilitates a clear indication of causality. It seems that placing (engaging) content that keeps the crowd on a campaign for an extended period is an appropriate strategy for increasing campaign effectiveness. This chapter clarifies that longer assessments lead to more positive judgements, and reveals that people are able, above chance levels, to accurately judge crowdfunding campaign. The results also show that more thorough investigative efforts do not add to predictive accuracy compared to judgements based on first impressions.

Chapter 3 aims to establish how the crowd predicts the success of crowdfunding campaigns with different amounts or types of information, specifically focusing on the effect of having watched the campaign pitch video. Individuals estimate the success of crowdfunding campaigns under three different conditions: Having been shown a screenshot of the campaign (1), the pitch video of the campaign (2), or a combination of both (3). The results show that the combined condition leads to more positive, but not more accurate assessments than the conditions with the screenshot and the video campaign alone. The study contributes to the literature by being one of the first to investigate the effects of the viewing behaviour of the crowd and showing that actually watching a pitch video increases the positivity of the crowd in their evaluations of crowdfunding success.

In Chapter 4, an eye tracking machine (which measures and registers eye movement) is used to investigate how people view and assess the quality of crowdfunding campaigns. The data from the eye tracker is analysed in various ways: First, heat maps are generated and analysed qualitatively. Then, total fixation durations (milliseconds of focus) on areas of interest are measured to get a comprehensive overview of how much attention each aspect of a crowdfunding campaign gains. Finally, the total fixation durations per area of interest are used to predict the positivity and accuracy of participants' evaluations. The qualitative analysis shows that most of the crowd's attention is focused on the upper parts of campaigns (those parts visible before scrolling down). The quantitative analyses show significantly higher durations for the text and image parts of the campaign contents for positive predictions. This study contributes to the literature by increasing our understanding of cognitive processes in crowdfunding and thereby helps creators to increase the perceived quality of their campaigns.

Regarding all three chapters, we see three main common trends. Firstly, people can estimate the success of crowdfunding campaigns from very little time spent on a campaign.

Secondly, adding more information and/or assessment time does not make people more accurate in their evaluations. Thirdly, increasing the amount of information and/or assessment time, makes people's evaluations more positive.

Summary Dutch

Crowdfunding helpt ondernemers bij het realiseren van projecten door financieel kapitaal te faciliteren. Anders dan bij meer traditionele vormen van financiering, wordt er direct geïnvesteerd door grotere aantallen individuen uit de crowd (het publiek). Gedreven door mogelijkheden van het internet en social media, roept de snelle opkomst van crowdfunding veel vragen op die beantwoord moeten worden. Degenen die in crowdfunding investeren, doen dat anders dan andere investeerders: Ze baseren hun beslissing over het algemeen op informatie die op één webpagina beschikbaar is, en investeren veel kleinere bedragen. Dit proefschrift richt zich op het evaluatieproces van individuen in de crowd wanneer zij een crowdfundingcampagne bekijken. Dit helpt ondernemers bij het creëren van effectieve campagnes en investeerders om successen nauwkeuriger te identificeren of voorspellen.

Het identificeren van indicatoren van succesvolle campagnes is een van de meest prominente doelen in crowdfunding onderzoek. Met andere woorden, wetenschappers proberen aanwijzingen te vinden die voorspellen of campagnes met succes worden gefinancierd. Dit is een interessant en relevant onderwerp voor ondernemers. Wanneer zij weten hoe een succesvolle campagne eruitziet, kunnen zij hun kans op financiering vergroten.

De meest gebruikte techniek voor het onderzoeken van crowdfunding succesindicatoren is het crawlen (automatisch, softwarematig oogsten) van data van bestaande crowdfundingpagina's en deze te modelleren naar het succes van de campagnes. Factoren die niet zichtbaar zijn op de campagnepagina, en dus niet worden meegenomen in deze onderzoeken kunnen de resultaten echter beïnvloeden. Voor succesvolle campagnes kan bijvoorbeeld veel meer (of veel betere) reclame zijn gemaakt op social media, waardoor veel meer geïnteresseerde mensen de campagne hebben bezocht. Om het bestaande onderzoek aan te vullen, is de volgende hoofdonderzoeksvraag geformuleerd: *“Welke factoren beïnvloeden het oordeel van de crowd bij het beoordelen van het succes van crowdfundingcampagnes?”*

In dit proefschrift worden deelnemers gevraagd om in te schatten of bestaande crowdfundingcampagnes succesvol gefinancierd zullen worden. De campagnes zijn echt, maar zijn gefotoshopt en worden weergegeven zonder informatie over gemaakte investeringen. Voorspellingen worden gekenmerkt als positief of negatief als de participant voorspelt dat een campagne succesvol respectievelijk niet succesvol zal zijn. Als voorspellingen overeenkomen met de werkelijke uitkomst van campagnes, worden deze daarnaast gekenmerkt als accuraat (en wanneer deze niet overeenkomen als niet accuraat). In ieder hoofdstuk ligt de focus op een specifiek sub-onderwerp. Door verschillende condities te creëren voor deelnemers, wordt in het eerste empirische hoofdstuk onderzocht wat het effect is van hoe lang mensen een crowdfundingcampagne bekijken. In het volgende hoofdstuk bekeken deelnemers verschillende soorten informatie - statische screenshots, de pitchvideo of beide - om te bepalen wat hiervan het effect is op hun evaluaties. Ten slotte is een eyetracker gebruikt om in kaart te brengen waar mensen naar kijken als ze crowdfundingcampagnes evalueren en hoe dit zich verhoudt tot hun evaluaties.

Hoofdstuk 2 is het eerste empirische hoofdstuk en bedoeld om vast te stellen of voorspellingen van de crowd over het succes van crowdfundingcampagnes op basis van zeer korte beoordelingen even positief en nauwkeurig zijn als die op basis van langere beoordelingen. Participanten schatten het succes van campagnes in, onder twee condities: met (zeer) beperkte en met onbeperkte tijd. De resultaten tonen dat de voorspellingsnauwkeurigheid in beide condities gelijk is, maar langere beoordelingstijden resulteren in positievere evaluaties. Het gebruik van de verschillende condities biedt een duidelijke indicatie van causaliteit. Het plaatsen van content die de crowd voor een langere periode op een campagne houdt lijkt een geschikte strategie om de effectiviteit van campagnes te vergroten. Dit hoofdstuk toont aan dat langere beoordelingen leiden tot positievere oordelen. Daarnaast laat het zien dat mensen in staat zijn om het succes van

crowdfundingcampagnes nauwkeurig te beoordelen vanuit een zeer kort tijdsbestek en (daarmee) op basis van beperkte informatie. De resultaten laten ook zien dat grondigere onderzoeksinspanningen niet bijdragen aan de nauwkeurigheid van voorspellingen, vergeleken met beoordelingen op basis van eerste indrukken.

Hoofdstuk 3 is bedoeld om vast te stellen hoe de crowd het succes van crowdfundingcampagnes voorspelt met verschillende hoeveelheden of soorten informatie, met name gericht op het effect van het bekijken van de pitchvideo. Individuen schatten het succes van crowdfundingcampagnes in onder drie verschillende condities: Nadat zij een screenshot van de campagne (1), de pitchvideo van de campagne (2) of een combinatie van beide hebben bekeken (3). De resultaten tonen dat de gecombineerde conditie leidt tot positievere, maar niet nauwkeurigere campagne beoordelingen dan de condities van de screenshot of de video alleen. Dit onderzoek levert een bijdrage aan de literatuur door als een van de eersten de effecten van het kijkgedrag van de crowd te onderzoeken en te laten zien dat het daadwerkelijk bekijken van een pitchvideo de positiviteit van beoordelingen vergroot.

In hoofdstuk 4 wordt met een eyetracker (een apparaat dat oogbewegingen meet en registreert) onderzocht hoe mensen crowdfundingcampagnes bekijken en de kwaliteit ervan beoordelen. De data uit de eyetracker wordt op verschillende manieren geanalyseerd: Allereerst worden heatmaps gegenereerd en kwalitatief geanalyseerd. Vervolgens wordt de totale fixatieduur (het aantal milliseconden) op afgebakende gebieden gemeten om een uitgebreid overzicht te krijgen van hoeveel aandacht elk aspect van een crowdfundingcampagne krijgt. Ten slotte wordt de totale fixatieduur per interessegebied gebruikt om de positiviteit en nauwkeurigheid van de evaluaties van deelnemers te voorspellen. Uit de kwalitatieve analyse blijkt dat de meeste aandacht van de crowd is gericht op het bovenste deel van campagnes (dat zichtbaar is voordat je naar beneden scrolt). De kwantitatieve analyses laten een significant langere fixatieduur zien voor de tekst- en

afbeeldingsdelen van de campagne-inhoud voor positieve ten opzichte van negatieve voorspellingen. Dit onderzoek draagt bij aan de literatuur door ons begrip van cognitieve processen in crowdfunding te vergroten en helpt investeerders zo om de waargenomen kwaliteit van hun campagnes te verhogen.

Met betrekking tot alle empirische hoofdstukken zien we drie belangrijke gemeenschappelijke trends. Ten eerste kunnen mensen het succes van crowdfundingcampagnes inschatten op basis van heel weinig tijd. Ten tweede maakt het toevoegen van meer informatie en/of beoordelingstijd mensen niet nauwkeuriger in hun evaluaties. Ten derde maakt het vergroten van de hoeveelheid informatie en/of beoordelingstijd de evaluaties van mensen positiever.

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