Taking risks while investing in online crowdfunding projects: A two-step approach of the investment decision



Karin van der Graaf Student number: 321475 Erasmus University Rotterdam Erasmus School of Economics Supervisor: H.R. Nam Topic: Crowdfunding

zafin ERASMUS UNIVERSITEIT ROTTERDAM

# Abstract

The term *crowdfunding* describes the phenomenon when a large group of individual investors decides to fund a project, usually in an online setting. Crowdfunding still appears to be growing substantially, but little research is done about crowdfunding in combination with the investment decision and related risks. Even though the amount of money that is invested is usually smaller for crowdfunders than for traditional investors, investors still bear the risk of investing in a project. Therefore, this thesis examines how risk indicators of an online crowdfunding project influence the investor in taking investment decisions.

The risk indicators in this research are the risk rating, the information that is provided and the distance between the investor and the entrepreneur. It is not always clear how investors are influenced by project factors such as a risk rating and the amount of information that is given on a project page of a crowdfunding platform. Also, the distance between the entrepreneur and the investor may play a role in the investment decision, as the feeling of being familiar with the entrepreneur can be strengthened when the distance with the investor is relatively small. The data is obtained from the Dutch platform Kapitaal Op Maat, which has a focus on being as transparent, reliable and simple as possible. They give each project a risk rating.

The investment decision is explained by a two-step model. In the first step of the model, the initial decision whether or not to invest is researched, while the second step of the model describes the stage where the amount of money that will be invested is determined. The data analysis indicates that in the first step, the risk rating of a project has a significant influence on the investor and shows that a lower indicated risk will positively influence the likeliness that will be invested. Remarkably, the amount of information appears to have a significant negative effect on the likeliness that will be invested. This is probably due to the fact that as the amount of information gets larger, it does not automatically mean that the provided information is clear and provides credible signals. In the second step of the model, other factors than in the first step influence the investor. One of the factors here is that the amount invested will decrease as the distance between the entrepreneur and investor gets larger. Also, it is revealed that investors from distances will react differently on the amount of information that is provided. These results show that an investor does not recklessly invest, but considers risk indicators of a crowdfunding project and searches for signals of credibility and trustworthiness in the two phases of the investment decision.

Keywords: Crowdfunding, investing, risk, crowdfinancing

# Foreword

I picked the topic *Crowdfunding* because I was fascinated by the fact that total strangers decide to fund a project, even though they do not know much about the entrepreneur. Crowdfunders pick projects that appeal to them personally and make an investment without having proof that a project will be successful. I wanted to know more about this upcoming phenomenon and get to know why an investor would take the risk of helping out someone with a nice idea.

Throughout the last months, I got into the world of enthusiastic entrepreneurs, platform owners and others interested in this new form of investing. I found out that the crowdfunding-community is full of ideas, developing constantly and always searching for ways to improve. Everyone I got to talk to during drinks, presentations and events showed interest in my research and inspired me with different insights, ideas and concerns regarding the fast changes that are happening in crowdfunding today. Therefore, I was able to learn so much more than just the findings described in this research.

I would like to thank the people from the CrowdfundingHub, especially Peter Nelissen, for giving me ideas and putting me into contact with several people that were able to help me out with the questions I had about the world of crowdfunding. I would also like to thank Kapitaal Op Maat, especially Pim van de Velde, for providing me with data that enabled me to do this research.

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# **Chapter 1. Introduction**

In this chapter, an introduction to the topic is given. Also, the problem statement will be explained and the research questions can be found in this chapter. In the last part, the relevance of the topic and this research will be made clear and an outline is given on how this research is structured.

## **1.1 Introduction to the topic**

'The basic idea is always the same: instead of raising the money from a very small group of sophisticated investors, entrepreneurs try to obtain it from a large audience, where each individual will provide a very small amount. As a "crowd" of investors is tapped, the term "crowdfunding" has been coined to describe this new source of finance' (Belleflamme et al., 2010).

This thesis is about crowdfunding. The last decades, mediums like the internet have had a major influence on society. Not only have these mediums influenced the ways of communication between people, but it also affected how money is spent. Because it became easy to reach large groups of people at low cost or without spending a lot of time, entrepreneurs started to ask for financial investments in their projects through other channels than the traditional way, such as banks, friends and family. According to Belleflamme et al. (2013), *'existing empirical analyses report an impressive growing volume of money collected through crowdfunding worldwide'*.

Crowdfunding has changed the way of getting financial resources for an entrepreneur. Where in a traditional set-up it was required to write a solid business plan to convince banks to provide financial resources, reaching out to a large group of investors requires a different approach. Also, each investor might react differently to the information that is given by the entrepreneur, potential risks that are involved and the benefits of investing a project. Therefore, the entrepreneur faces many choices in the process of attracting potential investors.

## **1.2 Problem statement**

For an entrepreneur, it is usually not easy to find investors to fund his project or company so that he can bring an idea into reality. Getting support through traditional financial methods like bank loans, business angels or Venture Capital is usually out of reach for smaller companies (Schwienbacher et al., 2010). Crowdfunding can be a suitable option for these entrepreneurs, because each individual funder provides a small amount of money instead of a small number of investors investing a large sum. Most likely having a solid business plan will not be enough to convince this large group of potential investors. Even though the amount invested is smaller, which means that less risk is involved for a crowdfunder, more knowledge about the investment decision is needed to understand why crowdfunders are willing to put their money in a project and bear the risk of investor can be helpful for an entrepreneur.

# **1.3 Research questions**

By researching the described problem, the following research question is raised:

- How does the risk of an online crowdfunding project influence the investor while deciding if and how much to invest?

As a factor such as risk is not directly observable while making an investment decision, sub-questions for this research question are:

- 1. How does the indicated risk of a crowdfunding project influence the likeliness and amount of money that a person is willing to invest?
- 2. How does the amount of information that is provided about a crowdfunding project influence the likeliness and amount of money that a person is willing to invest?
- 3. Does the distance between the investor and entrepreneur influence the investment decision?
- 4. Do longer distances between the entrepreneur and the investor cause the need for more information to convince the investor?
- 5. Do longer distances between the entrepreneur and the investor make the investor less willing to take risks?

## 1.4 Theoretical and practical relevance of the topic

According to the research of crowdfunding consultants Douw and Koren, 23 million euro was raised through crowdfunding in The Netherlands in the first six months of 2014. Over 900 projects and enterprises were funded successfully and crowdfunding still appears to be growing substantially.<sup>1</sup> As the amount of money invested is growing, it would be useful to get more insights on this topic. The importance of researching crowdfunding is supported by Gerber et al (2012): 'Understanding crowdfunding is critical as small individual contributions from creators and funders can lead to the formation of new companies, the realization of new professional identities, and fundamentally impact how we function economically and socially as it changes how, why, and which products and services are brought into existence.' There has been done research about investment decisions in general, but little research is done about crowdfunding projects in particular. Most research that has been done before about crowdfunding explores the success factors from the side of the entrepreneur (Agrawal et al., 2011; Schwienbacher et al., 2010; Ward et al., 2010) and motivations of investors are usually studied through interviews (Gerber et al., 2012). The role of risk in deciding whether or not to invest in a crowdfunding project is not being explored so far and also the usage of observations instead of motivations is an approach that is not often used while doing research about investors of crowdfunding. The results of this research can help to specify factors investors react to, give an insight on the response to risk and might reveal underlying signals of investors.

<sup>&</sup>lt;sup>1</sup> <u>http://www.douwenkoren.nl/persbericht-crowdfunding-op-weg-naar-mainstream/</u>

Initiatives like the CrowdfundingHub in Amsterdam acknowledge the rising importance of crowdfunding. They provide experienced and inexperienced entrepreneurs in The Netherlands



with training and education about crowdfunding, because they believe it is important to do research and share knowledge on this topic to make sure that all types of initiatives will be able to get their financial resources and be successful. The growing number of members of the CrowdfundingHub shows that more people have become interested in crowdfunding and are eager to learn from each other, in order to improve their own business. The CrowdfundingHub researches topics that are related to crowdfunding and publishes the results on their website, as will be done with the results of this research. In May 2014, the CrowdfundingHub organized a meeting where people that are involved in crowdfunding on a daily basis discussed the following topic: 'Is crowdfunding irresponsible finance?'. Currently, there is a lot of concern among the crowdfunding-community regarding the risk the investor takes while investing in crowdfunding projects, especially since projects are usually not monitored as is the case for projects that get their money from banks. The concern that crowdfunders are subject to an unusually high degree of risk is found in recent literature as well (Agrawal et al., 2013). Also, investors seem to have a lack of knowledge about risk and even though crowdfunding relies on the 'power of the crowd', the question remains whether or not a crowdfunder has a realistic view of the risks that are taken while investing in a project.

This research explores the influence of multiple factors, including the risk rating and amount of information of crowdfunding projects. Therefore, this research will bring more information and insights for entrepreneurs that are busy attracting their own funding audience, as well as insights for the platform owner that would benefit from knowing what factors influence the decision of investing in a crowdfunding project. Knowing how risk and other variables influence investors may help to build a more optimal design of projects and attract more potential investors, so that crowdfunding will continue to grow and realize new projects and enterprises.

### **1.5 Structure of the thesis**

In the second chapter, a more general introduction will be given on the concept of crowdfunding and the drivers of the investment decision. A conceptual framework for the research is presented in the third chapter. The fourth chapter will give more details on the variables and used methods. In chapter five, the results of this research are given. Finally, a general discussion will be described in the sixth chapter.

In the literature used for this thesis, multiple terms can be found to describe the same phenomena. People that invest in crowdfunding are either called investors or funders, while people who seek for investors are entrepreneurs or project starters.

# **Chapter 2. Background**

This chapter first gives more general information on crowdfunding with information about the origin and a description of the concept itself. In order to find out how risk and project attributes influence investors, a couple of theories and concepts will be described. Underlying ideas of how choices are made by investors will be discussed to explain effects that occur according to literature.

### 2.1 The concept of crowdfunding

Crowdfunding is a relatively new concept that *'is rooted in the broader concept of crowdsourcing, which refers to using the crowd to obtain ideas, feedback, and solutions to develop corporate activities'* (Belleflamme et al., 2013). This phenomenon is just under a decade old; crowdsourcing was first described in a more way extensive by Jeff How and Mark Robinson in June 2006 in an issue of Wired Magazine (Howe, 2008). Ever since, the concept of crowdsourcing has become more known by the general audience, if not by the term crowdsourcing itself, then most probably by the many successful examples like the website Wikipedia and the web browser Mozilla Firefox.

The first few articles that are specifically about crowdfunding can be found around 2010. There are several causes to the upcoming popularity of crowdfunding, of which one is probably the global financial crisis that started in 2007. Because several banks collapsed and investors became more cautious, it became more difficult for entrepreneurs to gain financial capital to start a company or a project. They had to look for other ways to get their financial resources and many of them found their solution in crowdfunding. Others deliberately choose this form of financing. Schwienbacher et al. (2010) state that 'crowdfunding may potentially be a mean to raise funds, not only for small projects but also for high-growth startups that are typically financed by business angels and even venture capital funds'. Another development that has contributed to the growth of crowdfunding is what Kleeman et al. (2008), Brabham (2008) and Schwienbacher et al. (2010) describe as *Web 2.0.*, which refers to a term in the article of Lee et al. (2008). In this article, three main characteristics of Web 2.0 are defined, which are collaboration, participation and openness. Because the internet has enabled people to make it easier to work together (collaboration), contribute freely (participation) and easily access computers and the internet (openness), it has become easier for small companies to broaden their financial horizon and reach out to crowdfunding as an alternative way for financing their projects.

'In simple terms, crowdfunding is the financing of a project or a venture by a group of individuals instead of professional parties (like, for instance, banks, venture capitalists or business angels)' (Schwienbacher et al., 2010, p.4). As there are differences in the ability of a firm or entrepreneur to obtain financial resources (Cosh et al., 2009; Schwienbacher et al., 2010), not all entrepreneurs are able to get the resources they need through traditional ways of financing. When professional parties are not able or not willing to provide the money needed, the entrepreneur faces an *equity gap*. This means that there is a difference between the (expected) expenses or costs and the funding of a project or company. Therefore, entrepreneurs who face an equity gap need to look for other options that enable them to set up their project and get the money that is needed. Instead of getting money from a small group of large investors, entrepreneurs reach out to a large group of small investors to

get the financial resources that are needed. Crowdfunding can be found in several industries, but in some industries more entrepreneurs rely on crowdfunding as a financial resource than in others. As being stated by Spelier, a senior online marketer at ABN Amro: '*Especially for innovative and creative ideas, it is difficult to get the required financial resources*' (Bogaard, 2011). The article of Gerber et al. (2012) describes that ideas for crowdfunding projects span across fields and vary in scope and finds that fast-growing crowdfunding platforms usually host a variety of different projects.

Another definition of crowdfunding that can be found in recent literature is the following: 'Crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes' (Belleflamme et al., 2013, p.8). An open call refers to the fact that anyone who is interested in investing in the project can do so. The use of the term open call in this definition contradicts with the finding that on some crowdfunding platforms the investor has to register and sometimes even has to sign a statement of confidentiality before being able to see all available information and to be able to participate (Schwienbacher et al., 2010). Also, local regulations may limit the funders. An example of a local regulation is that in The Netherlands, an investor is not allowed to invest more than  $\in$  40.000 per year. What the above definition of Belleflamme et al. also describes is the fact that usually, some form of reward is exchanged to the investor. This reward can be a form of preordering or receiving a product, getting voting rights or receiving financial compensation for taking the risk of investing in a project.

As indicated by Belleflamme et al. (2013), numerous initiatives can be found online, either on individual websites or on crowdfunding platforms. This seems logical because going online to look for more information or make a donation involves a low threshold for an investor compared to going through a similar process in an offline environment. Therefore, it can be said that Web 2.0 changed the way of how investors seek information and how they invest their money. Schwienbacher et al. (2010) state that more advantage should be taken of Web 2.0 in order to make shareholders knowledge-sharers as well and therefore, a participative platform should be built. These platforms provide opportunities for anyone with Internet access to pitch an idea to their social network and beyond and to gather funding to realize their work' (Gerber et al., 2012). Platforms get to pick their own donation method, so that on some platforms, the money invested is a loan that will be repaid after a predetermined time period, while on other platforms shares are given to the investor. Also, it is important for an entrepreneur to pick a platform that suits the project in the best way possible, so that the right target audience will be reached. Each decision that is being made has its own limitations, advantages and qualities, since different types of crowdfunding will most probably influence the perspective that potential investors will have on a project. According to Gerber et al. (2012), 'a handful of marketing and communication scholars find [that] strategies (...) influence project funding success, defined as reaching the funding goal'.

On a project page of a platform are usually details as the financial goal of the project, information about the project starter and information on what the aims for the project or company are once the financial goal has been reached. This is usually done in a standard format provided by the platform, so that the page is organized and clear to a potential investor. As a project does not solely rely on publicity through their website, Facebook page or mouth-to-mouth, an entrepreneur should aim to gain the best exposure possible on the project page. Presenting a project on a platform is therefore a good way to draw attention to a project, as it is a place where people are already searching for interesting projects and where the visitors are interested to invest money. Also, the entrepreneur is able to free ride on the reputation of the platform. Posting a project on a platform brings several advantages to an entrepreneur as platforms usually provide services like handling payments and hosting costs for the webpage. Multiple platforms also do a screening for all the projects before they decide if the project goes online, while others also give a risk rating to each project. For providing these services, a platform usually asks a small fee. When the funding goal is not achieved, some platforms refund the money to the crowd, while others still pay out the collected money to the project starter.

As it is expected that the factors that influence the investment decision will probably be slightly dissimilar between financial and social crowdfunding, a specific type of crowdfunding is chosen to be further explored. This research is mainly focused on *financial* crowdfunding, which is also referred to as crowdfinancing. The difference between social and financial crowdfunding is that *social* or *philanthropic* crowdfunding is usually incentive based; the investor is sponsoring the initiative and sometimes receives a tangible reward when the project has been realized. *Financial* or *investment* crowdfunding is usually equity based and the investors' main motivation is gaining financial benefits (Bogaard, 2011). This can be achieved through a loan or equity purchase. According to a recent article on a Dutch crowdfunding blog, a shift from funding to financing can be observed in The Netherlands<sup>2</sup>, which indicates the growing importance of this type of crowdfunding and therefore the relevance of this research.

## 2.2 Drivers of the investment decision in crowdfunding

The number of crowdfunding initiatives has expended rapidly in recent years and many entrepreneurs nowadays seem to be busy searching for a way to make crowdfunding work (Belleflamme et al., 2013). While starting a project or even a company, an entrepreneur faces a lot of choices that have to be made regarding to what form of crowdfunding is being used, what information is being shared with the crowd and how much money can be raised through crowdfunding. As all these factors might influence the decisions that are being made by investors, it is important to find out more about the drivers of the investment decision in crowdfunding.

Crowdfunding offers several advantages for both the investor and the entrepreneur compared to traditional investing. For an investor, there is less risk involved as funding a crowdfunding project usually involves a relatively small amount of money. Also, crowdfunders seem to enjoy some additional utility over other regular investors (Belleflamme et al., 2013), because they like participating in a project that speaks to them personally. Very important are '*the extra private benefits that funders* (...) *enjoy by participating in the crowdfunding mechanism*' (Belleflamme et al., 2013). There seem to

<sup>&</sup>lt;sup>2</sup> <u>https://www.graydon.nl/blog/article/2014/06/16/crowdfunding-wordt-crowdfinanciering</u>

be several aspects why investors chose to participate in crowdfunding over traditional investing or donating to charity, because this form of spending money enjoys them and provides them with personal and community benefits (Belleflamme et al., 2013). For an entrepreneur, there are multiple advantages why crowdfunding is chosen over traditional funding, such as cost reduction and generating hype as a marketing campaign (Kleeman et al., 2008; Schwienbacher et al., 2010).

When a funder makes an investment, he might expect to receive some sort of reward, either monetary or non-monetary (Gerber et al., 2012) for the risk and effort that is taken. The money invested returns in a monetary form or, for example, a physical product or a service done by the project starter. According to Lambert et al. (2010), an investment can be either active or passive. A loan is assumed to be a passive investment, because the funders lent out their money and do not expect anything in return but some form of interest for the money that is being lent out. It is also common that at the end of the duration of the loan, the borrowed money is paid back. An investment is considered to be active when the crowd is not only getting something in return for the money invested, but is also directly involved in some strategic decisions (Belleflamme et al., 2013). These decisions can be about design or taste of a product, but also about the next steps the entrepreneur should take in the process of realizing a sustainable organization. It seems like a good approach to let the crowd decide on certain things, because 'the wisdom of the crowd' may be critical in the survival of a company or project. The crowd provides feedback on a large scale and for an entrepreneur it is informative to hear multiple opinions. On the other hand, Schwienbacher and Larralde (2010) point out that the investors are not always the customers and Belleflamme et al. (2010) recognize that investors might have other motivations than profit maximization. Therefore, investors might not always be able to make the most optimal decision.

It is too simplistic to assume that crowdfunders will only consider the rewards while looking at investing in a crowdfunding project, since other considerations, not just financial ones, also seem to be important to crowdfunders (Schwienbacher et al., 2010). Participants in crowdfunding projects either have intrinsic or extrinsic motivations for funding a project (Kleeman et al., 2008). Intrinsic motivations, such as being able to say 'I did it!', are motivations that are driven by the enjoyment of doing the task itself while obtaining recognition and personal satisfaction (Kleeman et al., 2008; Schwienbacher et al., 2010). Extrinsic motivations are driven by external rewards as interest money, goods, learning and recognition. Another well-recognized idea that is to be found in literature is that preferences of consumers are heterogeneous (Belleflamme et al., 2013; Wang et al., 2003). This means that each person will rate risks on an individual level, based on different motivations. Therefore, some people are willing to take more risk than others. A theory in economics that is often used is the theory of expected utility. Its goal is to explain choices that have to be made under uncertainty and it is assumed that each person will make a choice in order to maximize utility. According to Agrawal et al. (2013), 'funders face three primary disincentives: creator incompetence, fraud, and project risk'. This article states that even though funders incorporate risk in investment decisions, information asymmetry may cause that the investor takes risks he does not know about.

Risk indicators provide signals to the investor and influence the investor while maximizing utility. Furthermore, a person can be risk-averse, risk-neutral or risk-seeking. Risk-aversion means that the highest utility will be achieved by taking the least amount of risk and the person will go for the safest option, while risk-neutral people will try to balance between risk and rewards. Risk-seeking persons will take risks, despite being able to suffer a possible loss. Usually, the bigger the risk of an investment, the higher the interest rate will be because investors expect a premium fee for the risk that they are willing to take. As each person has different motivations and preferences for investing in crowdfunding, rewards and risks will be perceived differently by each person as well.

# **Chapter 3. Conceptual Framework**

## 3.1 Two-step model of the crowdfunding investment decision

There are a number of factors that influence an investor in deciding to provide an entrepreneur with financial resources. Either a reward, the feeling of joy or personal preferences may lead the crowdfunder to the eventual investment decision. The framework in figure 3.1 displays a two-step approach that displays the two phases an investor goes through in the process of participating in a crowdfunding project. In order to find out what is important to a potential investor, it is first useful to know which factors influence the initial decision whether to invest or not. Then, the model researches which factors are influential when it comes to the decision how much money will be invested in a project. The two analyses are performed independently from each other, as different factors might influence the initial decision of the investor whether or not to provide the entrepreneur with money and has the probability that will be invested as the outcome. After deciding that an investment will be made, the funder will proceed to the stage where the amount of money that will be invested in project j is determined. The second step of the model takes investors into account that have already decided they want to make a donation and researches what factors have an influence on the amount of money the funder is willing to invest in a crowdfunding project.



FIGURE 3.1

Obviously there are multiple factors to a crowdfunding project that influence the investment decision. Information that is given about a project will be interpreted differently by each potential investor, since consumer preferences are heterogeneous (Belleflamme et al., 2013, Bauer & Hein, 2006) and therefore it is useful to know how an investor will react. As this research focusses on risk, this factor is considered to be one of the most important factors of a crowdfunding project that plays a role in the investment decision. Furthermore, it is not always clear how investors are influenced by information that is given on a project page of a crowdfunding platform. Therefore, this is the second factor that will be examined. A project consists of several characteristics that can be distinguished by the investors. Therefore, the factors risk and information are considered to be project factors. The third factor is the distance between the entrepreneur and the investor. A larger distance might cause a feeling of more

insecurity for the investor as the chances are smaller that he will know the entrepreneur personally or feels a personal connection. As distance contains information of both the project and the individual investor, this is considered to be influenced by both project and individual factors. The conceptual framework in figure 3.2 displays this view of the investment decision.



# FIGURE 3.2 Conceptual Framework

# **3.2 Hypotheses**

In the model described in chapter 3.1 and displayed in figure 3.2, multiple factors are included that influence the two steps of the investment decision.

Based on the sub-questions and the discussed literature, the following hypotheses are being formulated:

**Hypothesis 1:** An indicated low risk of a crowdfunding project influences the likeliness and amount of money that a person is willing to invest positively.

For crowdfunders, it is easy to find more information about the entrepreneur on the internet and have more human contact with the entrepreneur than in any other form of financing (Schwienbacher et al., 2010). Still, funders take a certain risk when they decide to invest in a project. They usually need less information than traditional investors, but this causes investors to rely on the trustworthiness of the person whose project they are about to fund (Schwienbacher et al., 2010). Even though the 'power of the crowd' is one of the strengths of crowdfunding, several online platforms will rate the projects that are on their website. A third-party intermediary like a platform provides quality signals and facilitates trust between marketplace participants (Agrawal et al., 2013) by providing information about the risk of the project. Both buyers and sellers trust the rating as it is in the financial interest of the platform to provide honest ratings (Agrawal et al., 2013). The rating indicates whether the investor takes a small, big or average risk while investing in a particular project. As '*funders face three primary disincentives: creator incompetence, fraud, and project risk'* (Agrawal et al., 2013), a risk rating allows potential investors to get more knowledge on the chance that the project will succeed. They will know that the project and the entrepreneur are evaluated on credibility and feasibility, because the risk rating of a project indicates the platforms insight on the experience and in the future plans of an entrepreneur.

A low indicated risk will strengthen the financial identity of the entrepreneur since this indicates that he has a solid foundation for his plans, which probably leads to a bigger chance that the investor is willing to invest. It is also expected that a low indicated risk will influence the amount that will be invested positively, as credible signals strengthen the financial identity of the entrepreneur which most probably convinces the investor that the money will be used in a good way.

**Hypothesis 2:** The amount of information that is provided about a crowdfunding project positively influences the likeliness and amount of money that a person is willing to invest.

Cosh et al. (2009) state that 'an inherent problem that entrepreneurs face at the very beginning of their entrepreneurial initiative is to attract outside capital, given the lack of collateral and sufficient cash flows and the presence of significant information asymmetry with investors'. Belleflamme et al. (2013) state that entrepreneurs obviously are better aware of the product quality than investors and therefore, there is a form of information asymmetry. This is a risk that the investor has to consider while investing in a project. Another form of information asymmetry is present because the entrepreneur also does not know who the high-utility users or funders are (Belleflamme et al., 2013). Therefore, usually not all details of a project are published. This decision is understandable because if entrepreneurs disclose too much information, for example about costs, their ideas might be stolen. Also, while participating in crowdfunding, the number of potential investors and their lack of professionalism might be a barrier to publish these numbers (Schwienbacher et al., 2010).

Since potential investors might feel they do not have enough information about a project, it can be hard to convince them to participate. From an investor viewpoint, the more information that is provided by an entrepreneur to the crowd, the better. Ahlers et al. (2012) present evidence for this

statement as this article finds that initiatives need to provide credible signals, start-up quality and sound information in order to be successful. One way to convince potential investors that a project is credible is providing more information about the entrepreneur, because according to Gerber et al. (2012) soft information leads to a more positive perception of the project starter. Soft information contains qualitative facts and is not formally presented. The information can be provided in the form of some personal information or a career overview. Either way, sound information should be made clear by usage of clear and understandable language with a deliberate sentence structure (Mitra et al., 2014) and visuals such as photos or a short movie. This is what is usually done in a standardized format on the project page on a crowdfunding platform, where information can be found about the project, company and entrepreneur. At the project page, the minimum amount of information will consist of how much money is needed, possible rewards and a business plan that describes at least how the collected money will be spend. This is the most critical and valuable information shared with the aim to convince as many potential investors as possible. Compared to traditional ways of funding, more sensible information needs to be shared by crowdfunding entrepreneurs since a wider audience needs to be reached and convinced to invest money (Schwienbacher et al., 2010). After convincing the investors that they should invest in the first place, the amount of information is also important to convince investors about the importance of reaching the goal, so that they might be more likely to donate more money. As Belleflamme et al. (2010) state: 'Crowdfunding is not just about funding; it is also about information. Crowdfunding seems thus to have implications that go beyond the financial sphere of an organization: it also affects the flow of information between the organization and its customers'.

**Hypothesis 3:** The distance between the investor and the entrepreneur negatively influences the likeliness and amount of money that a person is willing to invest.

With the emerge of Web 2.0 (Lee et al., 2008), it has become easier to communicate across large distances at low cost (Agrawal et al., 2011). But, as mentioned earlier, an entrepreneur usually relies on his network of friends and family to reach potential investors. They usually live not far off. The question that remains is that, when the location of an entrepreneur is relatively far away, the investor is willing to get involved in the project and help out financially. Distance here is how far apart the entrepreneur and investor are from each other in kilometers. The distance between the entrepreneur and the investor can be perceived as a risk, as being familiar and being located relatively near the entrepreneur can help to build trust (Gefen, 2000).

Mollick (2013) suggests that 'geography may play an important role in the success of crowdfunding efforts', as there seems to be a connection between an investor and an entrepreneur because of the underlying cultural factors in a geographic area. This means that potential investors most likely find it easier to relate to products that come from a place that is not far from their own location. Examples are country music in Nashville or vegetables from The Westland in Zuid-Holland. On the other hand, Agrawal et al. (2011) conclude that investment patterns turn out to be independent of geographic

distance. They mention that even though this is contrasting with existing literature that refers to economic frictions that are associated with long-distance early-stage projects, other theories on online activity have already confirmed that these frictions are reduced in the online setting. Therefore, this article states that distance between the entrepreneur and the investor has become less important since the development of Web 2.0.

To see if interaction exists between the factors risk, information and distance, interaction variables are created. When combining the factors of distance between the entrepreneur and the amount of information that is provided to an investor, the following is expected:

**Hypothesis 4:** As the distance between the investor and the entrepreneur increases, more information about a crowdfunding project is needed to positively influence the likeliness and amount of money that a person is willing to invest.

As a further distance can make it harder to be familiar with an entrepreneur and to be able to build trust (Gefen, 2000), it seems a logical consequence that people that live further away from the entrepreneur will need more information to be convinced about the project as the information gap at the side of the investor needs to be filled. As it might be harder to relate to a product or entrepreneur that comes from another location, an entrepreneur should provide sound information to show that he is reliable and trustworthy (Mitra et al., 2014). An interaction variable for distance and amount of information is created to see if for different distances, the effect of amount of information will be different.

**Hypothesis 5:** As the distance between the investor and the entrepreneur increases, a lower indicated risk is needed to positively influence the likeliness and amount of money that a person is willing to invest.

The above theory that people that live further away will need more evidence of the entrepreneur being trustworthy and reliable also applies for the combination of the factors risk and the distance between the entrepreneur and the investor, where a low risk indication can help to build trust between the two parties when the distance between them is large. A low risk indication might improve the likeliness that the entrepreneur is willing to invest, as well as the amount of money that will be invested, also when a large distance exists between them, since trust is needed to convince an investor to participate in a crowdfunding project. An interaction variable for distance and risk is created to see if for different distances, the effect of the indicated risk will be different to an investor in the investment decision.

# **Chapter 4. Method**

This chapter describes how the research is performed and what choices are made during this process. A description of the research method, data collection and data analysis is given.

### 4.1 Description of research method

To examine the conceptual model presented in the previous chapter, secondary data is used to find out if the hypotheses can be accepted or rejected. To search for what influences the initial decision to invest and see what happens during the first step of the model, a binominal regression will be done, where the dependent variable is the choice of the investor to invest (Y=1) or not to invest (Y=0). As displayed in figure 4.1, there are two possible outcomes for an investor.



The probability that a potential backer is actually going to invest then is:

Likeliness to invest (Yes = 1) = 
$$F(X_1, X_2, X_3...X_{ij})$$

where X stands for each variable that influences the investment decision of the crowdfunder. To find what factors influence a crowdfunder in the second step of the model, namely the decision how much a crowdfunder is willing to invest, a linear regression will be performed with the amount of money invested as the dependent variable. The same independent variables as in the binary regression will be used in order to find out the preferences of the investor. The formula that displays this regression is:

The independent variables that are being used in this research are both factors of the investor, the projects itself or an interaction effect of two factors. This type of research is used to reveal the preferences of an investor.

### 4.2 Data collection

In this thesis, data is gained from the Dutch crowdfinancing platform 'Kapitaal Op Maat' ('Capital Customized'). This platform, that can be found online at <u>www.kapitaalopmaat.nl</u>, has the slogan 'the platform for entrepreneurs and investors' and is focused on financial crowdfunding for both private

and corporate investors. When investors at Kapitaal Op Maat decide to fund a project on the platform, the entrepreneur borrows the money from the investor. After a predetermined period of time, the entrepreneur will pay back the loan while during the loaning, the entrepreneur pays an interest rate to the investor that is predetermined and shown on the project page. The unique selling point of Kapitaal Op Maat (KOM) is the aim to be as transparent, reliable and simple



as possible. To reduce risk for the investor, KOM handles the investment money through a third party fund. They also rate the projects and provide transparency for both investor and entrepreneur, which makes the projects on the platform reliable and trustworthy. After starting in February 2014, there have been several projects on the platform KOM, of which multiple reached their funding goal.

The total database of investors consists of 440 registered users at the time the data was retrieved; however, a number of users did not invest in a project. There are 127 people who invested in one or multiple projects on KOM and therefore, their preferences can be measured. The data of nine projects is provided by KOM to use for this research. For each project, the list of investors is provided, most of them also with the amount of money that is invested by each person. Of these registered users, there are 48 persons that invested in two or multiple projects.

The data is confidential and therefore, any detail that could point to a particular person that has invested money in one or multiple projects has been removed, so that all investors will stay anonymous. Also, with entrepreneurs who have not achieved their funding goal was agreed to bring the project page offline. Therefore, less detail will be provided about these projects. In Appendix 1, more details about the nine projects that were used for this research can be found. Due to the fact that KOM only facilitates projects that can be categorized as crowdfinancing or crowdinvestment, test results do not apply for crowdfunding projects that are social or philanthropic.

### 4.3 Use of variables

Multiple variables were obtained from the crowdfunding platform Kapitaal Op Maat. First, a personal identifier number is given to each investor as names are not to be used. In the dataset is incorporated which investors have decided to fund which project and the amount of money they decided to invest. The project details are translated into useable variables. For the investors information about gender, age and residence is available. The variables are used in this research are described in table 4.2.

### Rating and interest rate

As investors bear risk when they decide to invest in a crowdfunding project, they want be compensated and rewarded for the risk taken. This reward can be given in the form of interest on the loan. Financial experts from Kapitaal Op Maat give a risk rating between A+ and C- to each project while focusing on the repayment capacity and the risk class of the project. After that, a bandwidth rate for interest is given to the entrepreneur to indicate the percentage of interest that should be given for a specific rating. This is specified in table 4.3. Instead of five categories that are used by KOM, in the dataset these categories are simplified to three categories, namely A, B and C. Therefore, in the data

the risk is low, average or high. For interest rate, the percentage number is used (so for an interest rate of 7,5%, the value is 7,5).

Conceptual Variable	Notation	Measured Variable	Hypothesis			
Independent Variables			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Rating	Ratingj	Rating of project j, on a scale from a (highest) to c (lowest)	$H_1, H_5$			
Description Project	Descrj	Number of words that is used to describe the project on the platform page	H <sub>2</sub> , H <sub>4</sub>			
Interest Rate	Interestj	Interest rate of project j in whole numbers	H <sub>1</sub>			
Distance	Distance <sub>i,j</sub>	Distance in kilometer between project j and investor i	$H_3, H_4, H_5$			
Dependent Variables						
Likeliness to invest	Inv <sub>i,j</sub>	Binary number that indicates if investor i invested in project j (0 = no investment, 1 = investment was made)				
Amount invested	Amount <sub>i,j</sub>	$unt_{i,j}$ Amount of money in euro donated to project j by investor i				
Control Variables						
Movie	Moviej	Binary number that indicates if project j has a short movie on the platform page (0 = no movie, 1 = movie on project page)				
Age	Age <sub>i</sub>	Age of investor i in years				
Gender	Gender <sub>i</sub>	Binary number that indicates if investor i is male or female (0 = female, 1 = male)				

# TABLE 4.2

### Measures

### Information on project page

The project page is the first place were potential investors look for more information about a particular project. On KOM, information and specifications of a project, such as what will be done with the money and why the decision was made to get financial resources for the project through crowdfunding, are found on the project page. Besides from information about the loan, other aspects such as the presence of a movie with more information, a project description and a photo album can be found. For the presence of a movie, a dummy is created, while for *Description Project* the number of words is counted. Examples of the project pages can be found in Appendix 1, where available screenshots of the project pages of Kapitaal Op Maat are shown.

### Location

For each entrepreneur and each investor, Kapitaal Op Maat provided information about the location. Therefore, the distance between the location of the project and the residence of the investor is calculated on the website <u>www.afstand-berekenen.com</u>, where the distance in a straight line from one city to the other is used to measure the distance in kilometers between the entrepreneur and the

investor. All the investors and entrepreneurs are located in The Netherlands. It should be noted that information about the location of the entrepreneur is not always mentioned on the project page.

### Demographics of the investor

Several details are known about the investors at Kapitaal Op Maat, such as gender, date of birth and residence. For users that did not complete their profile on the website, first names are also used to determine gender. Even though date of birth is a mandatory field while subscribing on the website, many dates contained incorrect values such as having 2014 as year of birth. For available dates, the year of birth is used to determine age in years. For gender, a dummy is created where the value of 1 indicates that the investor is a male. Gender and age are used as control variables in the analysis to see if the investment decision is different for males, females or people from different ages.

### Dependent variables

The variable *Likeliness to invest* is binary; it displays whether or not one of the 127 users that invested in at least one project, did invest in a particular project. For multiple projects, there was also data available on the amount of money that the investor decided to lend to the entrepreneur. These numbers are used to create the variable *Amount invested*. When the amount invested is unknown, the amount is considered to be a missing value.

Risk category	Rating	Bandwidth rate interest
Risk category 1: Very low	A+	5,5 - 6,0 %
Risk category 2: Low	A	6,0 - 6,5 %
Risk category 3: Average	В	6,5 - 7,5 %
Risk category 4: High	С	7,5 - 8,5 %
Risk category 5: Very High	C-	8,5 - 9,5 %

# TABLE 4.3 Quantitative project check table Kapitaal Op Maat<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> <u>https://www.kapitaalopmaat.nl/Lenen/Crowdfunding-accepatiebeleid</u>

# **Chapter 5. Results**

In this chapter, the results of the data analysis will be presented. Each factor that has been researched will be described, discussed and the impact of each factor will be examined.

### **5.1 Descriptives**

In table 5.1, the number of observations for each variable is described, as well as the mean, standard deviation, minimum and maximum. Here follows a more detailed explanation. There are 127 people who invested in one or multiple of the nine projects provided by Kapitaal Op Maat, which gives a number of 1143 observations that are used to analyze. In 204 observations, the investor decided to invest in a project and in 190 of these observations the amount of money invested is also known. The total amount invested is 349.500 euro. The frequency table that displays the invested amounts can be found in Appendix 2. For 89 investors, the date of birth is known, which gives 801 observations where the age of the investor is known. For 117 investors information about gender is available, either based on what they filled in on their platform profile or based on their first name. In this dataset, the majority of 85 % of the investors is male. Since the locations are known for both investors and entrepreneurs, the distance between them is calculated. When the investors' residence is the same city as the location of the entrepreneur, the calculated distance is 0.

	Ν	Mean	S.D.	Min	Мах
Ratingj	1143	1,111	0,737	0	2
Interest <sub>j</sub>	1143	7,5000	0,91327	6,00	9,00
Descrj	889	633,00	192,409	385	928
Age <sub>i</sub>	801	44,28	13,461	19	82
Gender <sub>i</sub>	1053	0,85	0,353	0	1
Distance <sub>i,j</sub>	1143	68,57	48,069	0	216
Inv <sub>i,j</sub>	1143	0,18	0,383	0	1
Amount <sub>i,j</sub>	190	1695,26	3305,60	100	30700

TABLE 5.1 Descriptive statistics

Notes: As some variables are missing, N  $\neq$  1143 for every variable.

The correlation between the independent variables is measured with a Pearson correlation coefficient. Multiple variables turn out to be correlated. A Pearson correlation is considered high when the value is between 0,5 and 1 or -0,5 and -1, medium while in between 0,3 and 0,5 or -0,3 and -0,5 and considered low when the value is between -0,3 and 0,3. The Pearson correlation that stands out is the correlation between *Interest rate* and *Rating*, which is -0,743 and has a p-value of 0,00. This means that these two values have significantly high negative correlation. A consequence of this is that one of the variables should be excluded from the regression analysis, since a high correlation shows that there is a strong linear connection between *Interest rate* and *Rating*. This connection seems logical

since Kapitaal Op Maat advices the entrepreneurs on the interest rate, based on the rating they give to a project, which leads to bidirectional causation. Also, an investor should be compensated while taking a higher risk. Multiple other correlations between variables also turn out to be significant, but vary between 0,139 (between *Description project* and *Distance*) and -0,141 (between *Description project* and *Interest rate*) which means that they are considered to be low correlations. Therefore, they are not considered to be a problem for this analysis. All correlations are displayed in Appendix 3.

To find out whether *Interest rate* or *Rating* should be removed, multicollinearity between all variables is tested. In the performed test, *Tolerance* is calculated using the formula 1 – R-squared for each variable. A variable with a *Tolerance* that is below 0,20 is considered to be a concern since this means that at least 80% of the variance of this variable is shared with another independent variable. In the same test, also the *Variance Influence Factor* (VIF) is calculated by 1 divided by *Tolerance*. This value should ideally not be greater than 5. *Interest rate* has a Tolerance of 0,147 and a VIF of 6,8, where *Rating* has a Tolerance of 0,264 and VIF of 3,781. Therefore, *Interest rate* will be left out of the regression. Other variables did not show multicollinearity. In Appendix 4, the table with all the values for *Tolerance* and *VIF* can be found.

### 5.2 Data analysis

In this research, two regression analyses are performed that use the same independent variables, but different dependent variables. Since the outcome of the dependent variable *Likeliness to invest* is either yes or no, a binary regression is used to perform this analysis. The other regression analysis is linear, since the dependent *Amount investment* is a value in euros. For both regressions, a significance level of 5 % is used. For each regression, three models are created. First, model 1 contains only the constant and control variables. The second model also contains the independent variables and the third model also includes the interaction variables. The nine projects that are included were not put on the platform at the same period of time; however, the group of investors is considered to be equally divided which neutralizes different effects for different time periods.

The binary regression analysis can be found in table 5.2. In the first model, two variables, namely the *constant* (p=0,00) and *Movie* (p=0,047) are found to be statistically significant. In the second model, where the independent variables are included, this is also the case (p=0,047 and p=0,00). Furthermore, the variables *Rating* and *Description project* also show a significant value in the second model (p=0,000 and p=0,000). In the third model, where the interaction variables are also included, *Short movie* is a significant value, as well as *Rating* (p=0,013) and *Description project* (p=0,047), but the *constant* does not show significance anymore (p=0,222).

The numbers that are found to be significant need to be interpreted. By using B-values, the following equation can be made:

$$Ln(Odds) = Constant + F(X_1, X_2, X_3..., X_{ij})$$

### TABLE 5.2

# Step 1: Binary regression analysis with dependent variable $\mbox{Inv}_{i,j}$

	Model 1					Model 2				Model 3					
	Control variables				Control & Independent Variables				Control, indep. & interaction variables				ables		
	В	S.E.	Wald	Sig.	Exp(B)	В	S.E.	Wald	Sig.	Exp(B)	В	S.E.	Wald	Sig.	Exp(B)
(Constant)	-1.842	0.424	18.838	0.000	0.158	-1.342	0.676	3.942	0.047	0.261	-1.257	1.028	1.494	0.222	0.285
Moviej	0.401	0.202	3.932	0.047	1.494	1.823	0.274	44.256	0.000	6.190	1.836	0.286	41.257	0.000	6.270
Agei	0.003	0.007	0.193	0.660	1.003	0.003	0.008	0.105	0.746	1.003	0.003	0.008	0.095	0.758	1.003
Genderi	-0.262	0.261	1.012	0.314	0.769	-0.363	0.296	1.505	0.220	0.696	-0.353	0.297	1.417	0.234	0.702
Rating <sub>j</sub>						0.910	0.151	36.103	0.000	2.484	0.636	0.257	6.120	0.013	1.889
Descrj						-0.003	0.001	16.026	0.000	0.997	-0.003	0.001	3.935	0.047	0.997
Distance <sub>i,j</sub>						-0.001	0.002	0.079	0.779	0.999	-0.002	0.010	0.034	0.855	0.998
Descr <sub>j</sub> *											0.000	0 000	0.270	0 507	1 000
Distance <sub>i,j</sub>											0.000	0.000	0.279	0.597	1.000
Rating <sub>j</sub> *											0.004	0 002	1 770	0 1 0 0	1 005
Distance <sub>i,j</sub>											0.004	0.003	1.778	0.182	1.005

This leads to the conclusion that positive values of B will influence the odds or likeliness of an investor going to invest in a positive way and vice versa. Another way of finding out what the effect of each variable is, is by looking at the value Exp(B) in table 5.2, which is the *Odd ratio* for each predictor. The odd ratio predicts for each time that the value of a variable goes up with 1, how many times higher the odds are that the crowdfunder will invest in the project.

When looking at model 2 of the binary regression, the formula that follows from the table is:

This formula indicates that the presence of a short movie on the project page significantly influences the odds of the crowdfunder going to invest positively. Also, the higher the rating of the project, which indicates a lower indicated risk, the significantly higher the odds are that an crowdfunder is willing to invest in the project. *Description project* turns out to have a significantly negative effect. These results correspond to the odds ratios that indicate an odds ratio of 6,19 for *Movie*, 2,484 for *Rating* and 0,997 for *Description project*. For example, if *Rating* goes up from C to B, the odds of a crowdfunder deciding to invest in the project will become 2,484 times higher. The numbers for *Description project* seem rather small, but for each word that is added to the description, the odds of deciding to invest in the crowdfunding project become smaller. By adding or removing a large amount of words, the influence on the odds of investing in the project will become larger as well. It should be noted here that this effect is not infinite, as that would mean that no words at all would give the highest odds that the crowdfunder is willing to invest.

The third model gives the same three variables that are significant, only the constant does not have a significant value anymore. By using the significant B-values from this model, the following formula is created:

Ln(Odds) = (1,836 \* Movie) + (0,636\* Rating) – (0,003 \* Description project)

The signs of the variables are the same as in the second model, which indicates the same effects of the variables on the dependent variable which is the likeliness that people will invest in a crowdfunding project. The odds ratios are 6,27 for *Movie*, 1,889 for *Rating* and 0,997 for *Description project*. These results do not differ that much from the second model, but what should be noted is that the effect of *Rating* has become smaller after adding the interaction. This is probably caused by multicollinearity that is created by adding an interaction that is strongly correlated to the original variable. The significant value of the constant in the second formula indicates that there was still variance left unexplained by the variables in the model. After adding interaction, the insignificant value of the constant indicates that the odds do not differ significantly from zero anymore.

						-	-				,				
		Мо	del 1				Mode	el 2				Мос	del 3		
	Control variables					Co	ontrol & Indeper	ndent Varia	ables		Con	itrol, indep. & ir	nteraction v	rariables	
	В	S.E.	Beta	t	Sig.	В	S.E.	Beta	t	Sig.	В	S.E.	Beta	t	Sig.
(Constant)	-182.850	253.117		-0.722	0.470	-830.241	2,381.758		-0.349	0.728	855.119	616.405		1.387	0.166
Moviej	-40.170	116.477	-0.012	-0.345	0.730	-1,398.626	971.495	-0.176	-1.440	0.153	355.062	174.993	0.095	2.029	0.043
Agei	9.165	4.308	0.076	2.127	0.034	54.552	26.887	0.187	2.029	0.045	11.005	5.494	0.080	2.003	0.046
Genderi	93.181	163.148	0.020	0.571	0.568	1,277.664	933.560	0.127	1.369	0.174	117.888	207.510	0.023	0.568	0.570
Ratingj						-121.440	579.834	-0.020	-0.209	0.834	163.798	161.898	0.074	1.012	0.312
Descrj						1.344	2.776	0.060	0.484	0.629	-2.114	0.810	-0.221	-2.608	0.009
Distance <sub>i,j</sub>						-9.172	7.311	-0.118	-1.255	0.212	-13.026	5.891	-0.342	-2.211	0.027
Descr <sub>j</sub> *											0.019	0.000	0.250	2 000	0 0 2 7
Distance <sub>i,j</sub>											0.016	0.008	0.359	2.090	0.037
Rating <sub>j</sub> *											0 220	1 005	0.011	0 1 1 0	0.012
Distance <sub>i,j</sub>											0.220	1.990	0.011	0.110	0.912

# TABLE 5.3

### Step 2: Linear regression analysis with dependent variable Amount<sub>i</sub>,

For the linear regression, the dependent variable is the amount of money in euro that the crowdfunder decides to invest in a project. The results of this analysis can be found in table 5.3. In the first model, only *Age* (p=0,034) is found to be significant and in the second model, the variable *Age* (p=0,045) shows a significant influence again. However, in the third model *Age* (p=0,046) is not the only variable that shows significance anymore. In this model, also the variables *Description* (p=0,009) and *Distance* (p=0,027) are significant, as well as the control variable *Movie* (p=0,043). Also, the interaction effect *Description project* \* *Distance* (p=0,037) shows a statistically significant effect in the third model on how much money will be invested in a crowdfunding project.

By using B-values, the following equation can be made based on the second model:

The positive number of *Age* indicates that, the older the investor, the more money he or she is willing to invest in a crowdfunding project. This formula indicates that if *Age* goes up with, for example, ten years, the crowdfunder should be willing to invest 545,52 euro more.

By using the significant B-values from the third model, the following formula is created:

Amount of money invested = (355,062 \* Movie) + (11,005 \* Age) - (2,114 \* Description project) - (13,026 \* Distance) + (0,018 \* Description project \* Distance)

What is noteworthy about this formula is that both independent variables that are included in the significant interaction effect are also significant. This is most likely due to the effect that when an interaction variable is created, the independent variable describes the effect that occurs when the other variable included in the interaction effect is zero. Description project has a negative value, which indicates that for each extra word that is used to describe a project, 2,11 euro will be invested less when Distance is zero. Also here should be noted that this effect is not infinite. Another outcome of this model is that Distance has a significant negative effect on the amount of money invested. This means that for each kilometer that the investor and the entrepreneur are further apart, the investor is willing to invest 13,03 euro less. Since the values of both Description project and Distance cannot be negative, the interaction variable indicates a significant positive effect on the amount of money invested. However, the outcome of the formula depends on the values of both Description project and Distance. Without considering the variables Movie and Age, figure 5.4 illustrates the slopes for two different distances. The amount of money invested is calculated for an investor with a Distance of 10 kilometer and for an investor with a Distance of 100 kilometer. On the x-axis, the amount of words can be found and on the y-axis, the amount of money invested is displayed. The figure shows that the slopes for these two distances are different from each other, so that for 800 words the amount of money invested will be higher for the investor that is 100 kilometer away from the entrepreneur, while for 500 words the investor that lives 10 kilometer away from the entrepreneur will be higher.

The control variables *Movie* and *Age* also turn out to have a significant effect on the amount of money invested in a crowdfunding project. When a short clip is displayed on the project page, the amount of

money invested in the crowdfunding project will be 355,06 euro more. In all the models in table 5.3, *Age* shows a significant positive effect which indicates that if age goes up with, for example, ten years, the investor should be willing to invest 110,05 euro more.



FIGURE 5.4 Example of model 3 for linear regression

### **5.3 Model outcomes**

In this sub-chapter will be reviewed whether or not the hypotheses that are formed in the chapter 3.2 apply for the data that is used in this research. Therefore, the two regression analyses about the investment decision will be reviewed to see if the hypotheses will be either reject or supported.

**Hypothesis 1:** An indicated low risk of a crowdfunding project influences the likeliness and amount of money that a person is willing to invest positively.

Result: Supported for likeliness to invest

With the dependent likeliness to invest, the model without interaction effects showed a significant positive effect for *Rating*, which supports the first hypothesis. After adding interaction effects, the effect of rating becomes a bit smaller but is still showing a significant positive effect. The conclusion that can be drawn from these results is that an indicated low risk is important while deciding to invest in a crowdfunding project. In the model that has the amount invested as the dependent variable, there were no significant effects for *Rating* or any significant interaction effects related to *Rating*, which indicates that a change in the indicated risk does not significantly influence the amount of money a crowdfunder is willing to invest.

**Hypothesis 2:** The amount of information that is provided about a crowdfunding project positively influences the likeliness and amount of money that a person is willing to invest.

### Result: Rejected

A significant negative effect is found for *Description Project* for the likeliness to invest. For the second step, the amount of money the crowdfunder is willing to invest, *Description Project* also has a negative significant effect after including interaction effects. Either way, the effect of the amount of information turns out to be negative instead of the positive effect that was expected.

**Hypothesis 3:** The distance between the investor and the entrepreneur negatively influences the likeliness and amount of money that a person is willing to invest.

Result: Supported for amount of money invested

The variable *Distance* did not show a significant effect in the binary regression model researching the likeliness that will be invested, but it did show a significant negative effect on how much money the crowdfunder is willing to invest in the model that includes interaction effects. So, the investor is more likely to put a higher amount of money into projects that are closer to home, but the interaction effect shows that this effect is limited to a certain amount of words.

**Hypothesis 4:** As the distance between the investor and the entrepreneur increases, more information about a crowdfunding project is needed to positively influence the likeliness and amount of money that a person is willing to invest.

Result: Partly supported for amount of money invested

The interaction variable *Description project* \* *Distance* does not significantly influence the likeliness to invest, but there is a significant negative effect of the variable *Description project* on the likeliness to

invest. The regression analysis for amount invested indicates that there indeed is an interaction effect between *Description project* and *Distance*. Also, the independent variables *Description project* and *Distance* have a significant influence on the amount of money the investor is willing to invest. The independent variables have a significantly negative effect and the interaction effect is positive, but it cannot be concluded that an investor at a bigger distance always requires more information. For different distances, the formula gives a different slope as illustrated in figure 5.4

**Hypothesis 5:** As the distance between the investor and the entrepreneur increases, a lower indicated risk is needed to positively influence the likeliness and amount of money that a person is willing to invest.

### Result: Rejected

The binary regression that researches the likeliness to invest does not indicate that the variables *Distance* or *Distance* \* *Rating* influence this decision. In the linear model, *Distance* has a statistically negative influence, but the interaction variable *Distance* \* *Rating* is not significant, so there is no indication that an investor is willing to take more or less risk when the distance between him and the entrepreneur gets larger and he has to decide about the amount of money that is going to be invested.

# **Chapter 6. General discussion**

In this chapter, the research questions will be answered with the results that are found in the previous chapter. After that, academic and managerial implications for these results will be discussed. This chapter ends with a description of the limitations of this research and suggestions for further research.

# 6.1 Answering research questions

In a realistic situation, multiple variables influence the investment decision. In this research, the focus is on risk and the influence of factors that may indicate potential risks. In order to find out what is important to a potential investor, two steps of the investment decision are reviewed, namely the initial decision whether to invest or not and what factors are influential when it comes to the decision how much money will be invested in a project.

By using the data and the results of the hypotheses, first the five sub-questions will be answered.

1. How does the indicated risk of a crowdfunding project influence the likeliness and amount of money that a person is willing to invest?

Due to differences in preference and heterogeneity of perceived risk, each investor reacts differently to risk. According to the literature, a person is either risk-averse, risk-neutral or risk-seeking. A risk rating is a clear indication that displays the potential risk an investor is taking while investing in a crowdfunding project. Therefore, knowing if and how investors allow themselves to be influenced by a rating is important for the entrepreneur, as he might try to get a low indicated risk as a rating and be perceived as reliable and trustworthy by the investor.

In the first step of the investment decision where an investor decides whether or not to invest, the indicated risk seems to be important to the investor. The odd ratio of rating is positive (2,484 in the second model, 1,889 in the third model), which indicates that, as the rating gets higher (or the indicated risk gets lower), the odds that a person is going to invest will also be higher. Therefore, in this decision the users of Kapitaal Op Maat seem to be risk-averse and do rather invest in projects with higher ratings and lower indicated risks. In the second decision, a risk rating did not show a significant influence on the amount of money that the crowdfunders are willing to invest in the project. This indicates that, as soon as the initial decision is made that an investment will be made, the funder is no longer guided by the indicated risk.

2. How does the amount of information that is provided about a crowdfunding project influence the likeliness and amount of money that a person is willing to invest?

As crowdfunding is an open call to invest (Belleflamme et al., 2013), it requires information from the entrepreneur to convince the crowd to invest in his project. According to Belleflamme et al. (2013), in crowdfunding there is a form of information asymmetry between the entrepreneur and the potential investor as the entrepreneur is better aware of the product quality than the investor. This risk has to be considered by the investor and as the entrepreneur knows that this asymmetry exists, he should

provide credible signals, start-up quality and sound information in order to be successful (Ahlers et al., 2012). To see if this also applies for the data used for this research, the number of words is counted for each project to see if the amount of information has an influence on the decision whether or not to invest, as well as on the amount of money invested. Also, the control variable for the presence of a movie with extra information is added to both models to see if this extra information would influence the decision of an investor.

The data analysis in this research shows significant negative effects for the amount of words for both steps of the investment decision. The influence on the amount of money invested is remarkable, as the significant interaction with distance and amount of information shows that the effects of the amount of information might differ per investor as they live closer or further away from the entrepreneur. Though, it should be noted that the negative influence of amount of words for both steps of the investment decision are not infinite, as that would mean that no words at all would be the best option to provide credible signals. The presence of a movie shows a positive significant effect on both steps of the investment decision as well. These results imply that it is not the amount of words or information that is important to a potential investor, but how credible signals and quality are provided as indications of the entrepreneur being reliable and trustworthy. This is a factor that cannot be measured in amount of words or by the presence of a movie. As Belleflamme et al. (2010) state: *'Crowdfunding is not just about funding; it is also about information. Crowdfunding seems thus to have implications that go beyond the financial sphere of an organization: it also affects the flow of information between the organization and its customers'.* 

#### 3. Does the distance between the investor and entrepreneur influence the investment decision?

An entrepreneur usually relies on this own network of friends and family to get the funding he needs for his project. It is expected that their location is near the entrepreneur. If the entrepreneur and the investor are not related, being located near the entrepreneur can help to build trust between an entrepreneur and an investor as geographic distance may play an important role in the success in crowdfunding (Mollick, 2013), but on the other hand, the article of Agrawal et al. (2011) concludes that investment patterns should be independent of geographic distance, especially since the development of Web 2.0 where economic frictions associated with long-distance are reduced. The latter appears to be true for the likeliness to invest, as this does not seem to be influenced by the distance between the entrepreneur and the investor. However, distance does have a significant influence on the amount of money that is invested. As this is a negative number, the closer the entrepreneur is located to the crowdfunder, the amount of money that will be invested increase. This seems logical as Mollick (2013) finds that potential investors find it easier to relate to products that come from a near place. So, distance plays a role, but only after deciding that the investment will be made.

4. Do longer distances between the entrepreneur and the investor cause the need for more information to convince the investor?

The distance between the entrepreneur and the crowdfunder does not have a significant influence on likeliness to invest in a project, as well as the interaction effect of distance with information. The amount of information does have a significant influence on the likeliness to invest. However, it cannot be said that investors from different locations react differently on the amount of information when it comes to the initial decision whether to invest or not.

Distance does have an influence on the amount of money invested as after adding an interaction effect with amount of information, a longer distance between entrepreneur and investor turns out to have a negative effect on the amount money invested. This means that investors are willing to invest less in a project that is further away from the place that they are living. Also, amount of information shows an influence on the amount of money that will be invested. This effect is negative though, which indicates that more information lowers the amount of money that will be invested. The interaction effect shows that these negative effects can be turned into another direction by changing the amount of words that are used to describe a project, as this effect is positive. The slopes for different locations of the crowdfunders turn out to be different, so it can be said that investors from different locations will react differently on the amount of information that is provided by the entrepreneur on the crowdfunding platform.

5. Do longer distances between the entrepreneur and the investor make the investor less willing to take risks?

The article of Mitra et al. (2014) indicates that it might be harder to relate to products or entrepreneurs that come from other locations. Therefore, a low risk indication can help to increase trust between the entrepreneur and the investor, especially when the distance between them is relatively large. In this research, none of the two steps in the model indicate an existing relation between the factors distance and risk rating. Even though rating influences the initial decision of investing and distance influences the amount of money, none of the interaction effects is statistically significant. Therefore, investors from different locations with different distances do not respond differently to risk ratings.

The research question that is described in chapter 1 is the following:

# How does the risk of an online crowdfunding project influence the investor while deciding if and how much to invest?

The article of Gerber et al. (2012) indicates that investors expect to receive some sort of reward, either monetary or non-monetary, for the risk and effort that is taken while investing in the project. However, it is too simplistic that they will only consider rewards as other considerations also seem to be important to crowdfunders (Schwienbacher et al., 2010). From this research, it turns out that investors do look for indications of risk, are in need of information and that investors do care about the distance between them and the entrepreneur. As funders face three primary disincentives, namely creator incompetence, fraud and project risk (Agrawal et al., 2013) while making a decision about investing, they look for signs that indicate that the creator has competence, does not commit fraud

and the project has a real chance of success. However, each individual will rate risk on a personal level as consumer preferences are considered to be heterogeneous (Belleflamme et al., 2013; Wang et al., 2003) and investors are either risk-averse, risk-neutral or risk-seeking.

In chapter 3.1, a two-step approach of the investment decision is presented. With the results that are retrieved from the data, the formulas for each step are presented in figure 6.1. In the first step of the investment decision, risk and information turn out to be the most important factors, while in the second step, information and distance appear to influence the investor. This is interesting to see as it turns out that the two steps of the model show different outcomes and therefore, it is important to consider the different phases an investor goes through while making the investment decision. In the first step, an investor seems to look for credible signals to make the decision to invest in the first place, such as the indicated risk and the provided information. In the second step, more factors play a role as by already knowing that the investment will be made, being familiar with the entrepreneur, for example because of living near the location of the entrepreneur, becomes of significant influence. The influence of the three factors risk, information and distance is discussed below.

### FIGURE 6.1

### Two-step model of the investment decision with accompanying formulas

Step 1	Does investor i invest in project j?							
	Likeliness to invest =							
(1,836 * Short movie) + (0,636* Rating) – (0,003 * Description project)								
Step 2	How much does investor i invest in project j?							
Amount of money invested =								
(355,062 * Movie) + (11,005 * Age) - (2,114 * Description project) – (13,026 * Distance) +(0,018 *								
Description project * Distance)								

A risk rating is considered to be of highly importance for the platform Kapitaal Op Maat, as they strive to be as transparent and reliable as possible. This also includes rating the projects on their page and making the investor aware of a certain risk that they take by investing. The data provides evidence that a risk rating indeed is important for the likeliness that will be invested, but does not show significant effects for investors from different distances. For the amount of money invested, the indicated risk did not have a significant influence on the investor. The amount of provided information can also be considered to influence risk as information asymmetry indicates that not all information is provided and that there can be a risk for a potential investor. The information that is given about a project is important, but that does not mean that more information is always better. In fact, the results of this research imply that too much information misses its target and causes a negative effect in both steps of the investment decision. While deciding how much to invest in a project, information and distance show an interaction that indicates that for different distances, the overall outcome of the model can be either positive or negative as the slopes differ from each other. This is remarkable in a country that is as small as The Netherlands, where distances are not further than approximately 250 kilometer.

The control variable for the presence of a movie appears to have a positive significant effect in both steps of the investment decision. As this is extra information for the investor, this is probably received as an indication of sound information that helps to provide signals of credibility to the investor. The control variable age of the investor is found to have a significant positive influence on the amount of money invested. The positive number indicates that older investors are willing to invest more money.

Concluding, an indicator that is as clear as a risk rating seems to be important while taking the first decision whether or not to invest, as well as the amount of information that is given about the project as information affects the credibility of a project. For the decision on the amount of money that will be invested, the amount of information and distance become significantly important to the investor. Risk does have an influence on the decision whether or not to invest in a crowdfunding project, as well as it has an influence on the decision how much to invest in a project, even though this is not by a factor that is as clear as a rating. The factors that indicate the risk are different, but show that the investor does not recklessly invest in a crowdfunding project and considers signals of credibility and trustworthiness.

### 6.2 Academic and managerial implications

In the literature studied in this thesis, most articles look at the initial decision whether to invest or not, but do not look for factors that influence the amount of money that will be invested in a crowdfunding project. Therefore, the two-step approach used in this research might help to realize that there are two decisions that are being made by the investor and that they are both driven by different factors. Another academic implication that can be drawn from this research is that risk indicators such as a risk rating might not be the only indication for potential risk, as amount of information also is related to a risk that an investor is willing to take. Also, the distance influences the investment decision, not in the initial decision whether to invest or not, but in deciding on how much money will be invested.

As mentioned in the first chapter, there seems to be a concern among the crowdfunding community regarding the risk that the investor takes while investing in crowdfunding projects. From this research can be retrieved that in the first decision whether or not to invest, crowdfunders are influenced by the risk rating that is given to a project. This gives a certain reassurance that investors are not recklessly investing their money in projects, but do care about risk and want to have information about the projects they are about to invest in. For entrepreneurs, it is useful to know how better decisions can be made to create a more positive outcome. It seems clear that the outcomes of this model can be used by an entrepreneur to see how he can increase the probability of an investor funding his project and raise the amount of money that will be invested. The CrowdfundingHub can use these insights to

help entrepreneurs, provide them with starting up their project and searching for the best solution to solve problems with attracting investors.

The goal of Kapitaal Op Maat is to provide a transparent and reliable platform for entrepreneurs and investors to do business and help each other with realizing projects. The importance of rating showed that giving out risk ratings is actually useful to build trust between the two parties, but it should be taken into account that the rating does not influence the decision of the amount of money that will be invested. Also, providing clear and understandable information about the projects is important for Kapitaal Op Maat to build a strong reputation and expand their platform, as putting a big amount of information negatively influences the investment decision. As being a nationwide platform, it is useful to know for KOM if there is an influence of distance between the entrepreneur and the investor on the investment decision. It is nice to know that in the initial decision whether to invest or not, distance does not play a role which indicates that it is important to try to reach a nationwide audience for each project. However, distance does play a role when it comes to the amount of money invested in a project.

### 6.3 Limitations and further research

The first limitation of this research is that the data came from one particular platform and not from several different platforms. Therefore, the data might show effects that apply to the particular users of Kapitaal Op Maat, but may not apply for users of other platforms. Also, the amount of projects that were used for this research is rather small, since the platform started just recently. It is hard to generalize the results of one single platform for a whole industry or even a country. Another limitation is that the amount of words might not be the best indicator for the amount of information that is provided to the investors. What the information includes, the language that is used and the readability of the text are also important factors that make information appealing and clear to understand.

Further research should be done with a bigger dataset and more platforms, but as it was hard to convince multiple platforms to cooperate in academic research, this might not be feasible. With more data it also becomes possible to research more project characteristics that are available. Also, this research is based on observed behavior and not on motivations that investors might have while taking the decision to invest in a project and deciding how much money they want to invest. This two-step model also might not be as clear in the mind of the investor, as these decisions might be made at the same time and not in a two-step process. Doing a more extensive research that includes a combination of motivations and observations would be a valuable addition to already existing research.

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# Appendix

# Appendix 1. Projects

### FIGURE A1.1

# Impression of Project A: Heel Bewust

INVESTEREN LENEN PROJECTEN HOE WERKT HET?	Inloggen   Home	Contact <b>f t in</b>	
Investering in nieuwe gezondhe	sidsbevorderende op	lossingen.	
Het project	A 6% 36 maa	nden	
HeelBewust (onderdeel van De Helende Wereld) verkoopt krachtige natuurgeneeskundige oplossingen en ondersteunende natural lifestyle producten. Wij bieden uitsluitend de best beschikbare oplossingen en producten. Kenmerken: Hoge kwaliteit, snelle levering, gratis betrouwbaar, deskundig en zeer gewaardeerd advies inzake persoonlijke uitdagingen. Hiermee hebben al vele mensen een serieuze gezondheidswinst behadd. Het advies is gratis vanwege het grote maatschappelijke belang ervan.	Gewenste investering: € 26.000 Reeds geinvesteerd:		
Missie Het is onze taak om mensen te helpen bij het behalen van serieuze en blijvende gezondheidswinst. Dit doen wij niet alleen door de meest krachtige en effectieve natuurlijke oplosisingen aan te reiken, maar ook door het dolen van waardevolle informatie en deskundig en integer te reageren op hulpvragen. Belangrijke actuelke kennis en in zizchten die daadwerkelijk helpen om het verschil te maken, vinden via HeelBewust hun weg naar steeds meer mensen!	€ 26.000 Doel van financiering: Financiering werkkapitaal		
HeelBewust van symptoombestrijding naar heling! Het mooie aan natuurgeneeskunde is dat er vele wegen naar Rome leiden. Het lastige eraan is dat het moeite kost om nét die aanpak te ontmoeten die je wei verder brengt. De aanpak die past bij de persoon, zijn geschiedenis, levensfase en natuurlijk de ziekte of de klachten. HeelBewust doorziet dat en bijkt telkens weer in staat om mensen de goede kant op talaen bewegen, met plezing stømmende resultanten!	VOLLEDIG GEFI Dit project is reeds volledig gefin geen verdere investeringen.	NANCIERD!	
"Met al helgeen HeelBewust aanreikt, dagen wij het geholpen, zelfgenezend vermogen van mens en dier uit. Wij geloven in de kracht van geintegreerde holistische geneeskunde!".	Investeerder Anonieme investeerder	Bedrag € 6.300	
Wat onderscheidt HeelBewust van andere vergelijkbare aanbieders? Er zijn geen andere vergelijkbare aanbieders. HeelBewust combineert een zeer selectief aanbod van hoee kwaliteit	Anonieme investeerder Anonieme investeerder	€ 1.000 € 100	

# TABLE A1.2 Details of Project A: Heel Bewust

Title	HeelBewust 2014
Translated title	Very consciously 2014
Company	HeelBewust
Rating	A
Interest per year	6 %
Funding period	36 months
Desired investment	€ 26.000,-
Category	Social entrepreneurship
Funding goal	Financing operating capital
Investment goal reached?	Yes
Location	Tolkamer, Gelderland
Short movie available	No
Description project	928 words

### FIGURE A1.3

### Impression of Project B: Elektrisch vervoer voor in de stad



### TABLE A1.4

### Details of Project B: Elektrisch vervoer voor in de stad

Elektrisch vervoer voor in de stad
Electrical transport in the city
Trikke Europe
В-
7,5 %
36 months
€ 75.000,-
Transport
Financing inventory
Yes
Den Haag, Zuid-Holland
Yes
853 words

# FIGURE A1.5 Impression of Project C: Factoringsbedrijf DBS2



# TABLE A1.6 Details of Project C: Factoringsbedrijf DBS2

Title	Factoringsbedrijf DBS2
Translated title	Factoring firm DBS2
Company	DBS2
Rating	A
Interest per year	8 %
Funding period	48 months
Desired investment	€ 100.000
Category	Business services
Funding goal	Financing operating capital
Investment goal reached?	Yes
Location	Katwijk, Zuid-Holland
Short movie available	Yes
Description project	610 words

### FIGURE A1.7

### Impression of Project D: LED-lampen van Econled



### TABLE A1.8

### Details of Project D: LED-lampen van Econled

Title	LED-lampen van Econled
Translated title	LED lamps Econled
Company	Econled
Rating	A-
Interest per year	6%
Funding period	36 months
Desired investment	€ 50.000,-
Category	Wholesale
Funding goal	Financing inventory
Investment goal reached?	Yes
Location	Soest, Utrecht
Short movie available	No
Description project	416 words

### **FIGURE A1.9**

### Impression of Project E: 'Novus Orva', een nieuw begin



### TABLE A1.10

### Details of Project E: 'Novus Orva', een nieuw begin

Title	'Novus Orva', een nieuw begin
Translated title	'Novus Orva', a new beginning
Company	Unknown
Rating	В
Interest per year	8 %
Funding period	60 months
Desired investment	€ 70.000,-
Category	Social entrepreneurship
Funding goal	Balance sheet restructuring
Investment goal reached?	Yes
Location	Naaldwijk, Zuid-Holland
Short movie available	No
Description project	385 words

# FIGURE A1.11 Impression of Project F: Foodtworks



TABLE A1.12 Details of Project F: Foodtworks

Foodtworks
Foodtworks
Foodtworks
С
9%
60 months
€ 86.000,-
Wholesale
Financing operating capital
Not yet available
Wateringen, Zuid-Holland
Yes
703 words

# TABLE A1.13Details of Project G: De hefmobiel

Title	Dehofmohiol
Tille	De heimobiei
Translated title	Lifting device
Rating	В+
Interest per year	7,5 %
Funding period	48 months
Desired investment	€ 150.000,-
Category	Transport
Funding goal	Financing operating capital
Investment goal reached?	No
Location	Den Haag, Zuid-Holland
Short movie available	Yes
Description project	Not available
<b>1 1 1 1</b>	

## TABLE A1.14

# Details of Project H: The Shopping Wall

The Shopping Wall
The Shopping Wall
С
8 %
60 months
€ 150.000,-
Retail
Financing operating capital
No
Haarlem, Noord-Holland
No
Not available

## TABLE A1.15

# Details of Project I: Urinoir met een boodschap

Title	Urinoir met een boodschap
Translated title	Urinal with a message
Rating	В
Interest per year	7,5 %
Funding period	60 months
Desired investment	€ 155.000,-
Category	Other
Funding goal	Financing operating capital
Investment goal reached?	No
Location	Haarlem, Noord-Holland
Short movie available	No
Description project	536 words

# Appendix 2. Frequency table

Amount invested*	Frequency	Percent	Cumulative Percent		
0	953	83.4	83.4		
100	36	3.1	86.5		
200	17	1.5	88.0		
300	11	1.0	89.0		
400	4	.3	89.3		
500	30	2.6	92.0		
600	2	.2	92.1		
700	2	.2	92.3		
800	1	.1	92.4		
900	1	.1	92.5		
1000	29	2.5	95.0		
1100	2	.2	95.2		
1200	2	.2	95.4		
1300	2	.2	95.5		
1500	8	.7	96.2		
1800	1	.1	96.3		
2000	6	.5	96.9		
2100	2	.2	97.0		
2200	1	.1	97.1		
2500	5	.4	97.6		
2600	1	.1	97.6		
3000	1	.1	97.7		
4100	2	.2	97.9		
4500	1	.1	98.0		
5000	12	1.0	99.0		
6000	3	.3	99.3		
10000	4	.3	99.7		
11300	1	.1	99.7		
12700	1	.1	99.8		
19000	1	.1	99.9		
30700	1	.1	100.0		
Total	1143	100.0			

Frequency table for invested amounts

\*Amount invested is in euro.

# **Appendix 3. Correlation**

TABLE /	A3.1
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## Correlations between the independent variables

		Rating <sub>j</sub>	Interest <sub>j</sub>	Distance <sub>i,j</sub>	Age <sub>i</sub>	Gender <sub>i</sub>	Descr <sub>j</sub>
	Pearson Correlation	1	743**	.072 <sup>*</sup>	,000	,000	.073 <sup>*</sup>
Ratingj	Sig. (2-tailed)		,000	,015	1,000	1,000	,029
	Ν	1143	1143	1143	801	1053	889
Interest	Pearson Correlation	743**	1	110**	0,000	,000	141**
Interestj	Sig. (2-tailed)	,000		,000	1,000	1,000	,000,
	Ν	1143	1143	1143	801	1053	889
	Pearson Correlation	.072 <sup>*</sup>	110**	1	074 <sup>*</sup>	-,023	.139**
Distance <sub>i,j</sub>	Sig. (2-tailed)	,015	,000		,037	,457	,000,
	Ν	1143	1143	1143	801	1053	889
	Pearson Correlation	,000	0,000	074 <sup>*</sup>	1	-,020	,000
Agei	Sig. (2-tailed)	1,000	1,000	,037		,568	1,000
	Ν	801	801	801	801	792	623
Condor	Pearson Correlation	,000	,000	-,023	-,020	1	,000
Genderi	Sig. (2-tailed)	1,000	1,000	,457	,568		1,000
	Ν	1053	1053	1053	792	1053	819
	Pearson Correlation	.073 <sup>*</sup>	141 <sup>**</sup>	.139**	,000,	,000	1
Descij	Sig. (2-tailed)	,029	,000	,000	1,000	1,000	
	Ν	889	889	889	623	819	889

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

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

Notes: As some variables are missing, N  $\neq$  1143 for every variable.

# Appendix 4. Multicollinearity

						Collinearity Statistics <sup>a</sup>	
	В	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-,145	,346		-,419	,675		
Distance <sub>i,j</sub>	,000	,000,	-,016	-,406	,685	,936	1,069
Age <sub>i</sub>	,000	,001	,012	,315	,753	,996	1,005
Descrj	,000	,000	-,182	-3,391	,001	,484	2,066
Movie <sub>j</sub>	,213	,058	,265	3,659	,000	,266	3,760
Rating <sub>j</sub>	,173	,035	,362	4,984	,000	,264	3,781
Interestj	,044	,038	,114	1,172	,242	,147	6,812
Gender <sub>i</sub>	-,051	,042	-,045	-1,217	,224	1,000	1,000

TABLE A4.1 Multicollinearity

Dependent variable: Investment

<sup>a</sup>This column reports the descriptive variables of each variable regarding multicollinearity.