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Universitat Autònoma de Barcelona

International Doctorate in Entrepreneurship and Management

Department of Business

DOCTORAL THESIS

**THE INVESTOR-ENTREPRENEUR RELATIONSHIP IN
EQUITY CROWDFUNDING: A COMBINED TRUST-
AGENCY BASED APPROACH**

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ABSTRACT

Crowdfunding is considered a new source of funding and it is becoming an increasingly employed tool by entrepreneurs who seek financing for their venture and by investors who search for non-traditional alternatives of investment. The crowdfunding phenomenon, in theory and practice, has developed and spread significantly in recent years. Equity crowdfunding promises to transform the private funding landscape for start-ups and early stage projects allowing non-experience investors to participate in funding a project. However, these type of investors have limited tools to identify cases of fraud and misconduct, evaluate the value proposition of projects or sell their participation in a liquid secondary market. This doctoral dissertation has the purpose to advance knowledge and understanding on the investors' decision-making assessment when investing in equity crowdfunding. This study was structured and design through three independent essays. Each essay intends to explore one characteristic of the equity crowdfunding phenomenon and includes its own methodology, analysis and empirical results.

The objective of the first essay is to study *the characteristics of the investors willing to fund start-ups through crowdfunding platforms*. We found and identified as significant factors to categorize the investors both their expertise in equity crowdfunding and their risk diversification strategy. The objective of the second essay is to *evaluate the investors' development of trust based on their beliefs about the competence, integrity and benevolence of the entrepreneur seeking financing through the equity crowdfunding model*. The novelty of this research was to analyze "trust" in the equity crowdfunding ecosystem. We use a structural equation modelling technique to predict the relationship among our trust latent variables and the trust intention to invest in equity crowdfunding projects. Essay three focuses on *analyzing the combined effect of trust and agency relations among investors, entrepreneurs and crowdfunding platforms*. In this essay we add the agency constructs to the trust constructs commented for the second essay objective. The agency constructs are built on the research of agency dynamics for start-up financing in business angel, venture capitalist investment and crowdfunding models, and comprise a combination of ex-ante and ex-post investment factors. We tested our hypothesis using a partial least square-structural equation modeling. We found that there is an innate characteristic of the investor to trust in the equity crowdfunding ecosystem and that the investors have found mechanisms that allow them to identify potential flaws and cases of fraud present in certain equity crowdfunding projects.

Based on the research findings, this dissertation contributes to knowledge in different ways: First, a better description of the investor characteristics; second, we embrace the conclusion that the variable *collective trust* represented through the equity crowdfunding platforms performs an important part in explaining the trust intentions of the investors; third, we combine two very well-known theories, trust and agency, that even though they are complementary they have not been utilized in research together sufficiently.

Keywords: Equity crowdfunding, investor-entrepreneur relations, trust-agency analysis, entrepreneurial finance crowdfunding, trust crowdfunding platforms.

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1. INTRODUCTION

1.1. CROWDFUNDING AND PROBLEM STATEMENT

Crowdfunding can be considered a new source of funding that has today become increasingly available for entrepreneurs looking to finance their venture through equity. As a concept, the crowdfunding phenomenon is quite new (Howe, 2006) but has developed and spread significantly in the past years (Agrawal, Catalini, & Goldfarb, 2015; Assadi, 2015; Harrison, 2013; K. Kim & Viswanathan, 2014; McKnight, Cummings, & Chervany, 1998; Moritz & Block, 2016).

Belleflamme, Lambert, & Schwienbacher (2014, p.4) argued that “the concept of crowdfunding comes from a broader concept of crowdsourcing, which involves using the crowd to obtain ideas, feedback, and solutions to develop corporate activities”. According to Kleemann et al. (2008, p.6) “crowdsourcing is when a profit-oriented organization outsources specific tasks for making or selling its products to the general public in the form of an open call over the Internet”. The idea behind the concept of crowdsourcing is that individuals make a voluntary free or small contribution to the firm’s objectives.

Crowdfunding is defined by Schwienbacher & Larralde (2010, p.4) as “an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes”. Mollick (2014) suggests, though, that these definitions are incomplete and there are two aspects not addressed in their formulation: the goal of the founders and the goal of the funders. Belleflamme et al. (2014) added that crowdfunding differs from other methods of start-up funding because the relationship between founders and funders varies by context and nature of the funding effort. The goal of the founder could, among others, be to raise capital, to demonstrate the demand for a proposed product and to fulfill a marketing purpose. Mollick (2014) identifies four main goals in which individuals fund projects, but also clarifies that these goals often overlap as projects may allow funders to achieve several different goals simultaneously. These four goals are based on four different models, which are: donations, lending, reward-based and equity.

The donation model places funders in the position of philanthropists who expect no direct return from their donation. Examples of these projects prevail in arts or humanitarian projects. In the lending model, the fund is provided as a loan with an interest to be charged for the use of the funding. The reward-based model offers the funder some reward for backing the project. Mollick (2014) identified different rewards, including being credited in a movie, having creative input

into a product under development, treating funders as early customers with discounts, better price or some other similar benefit. The equity model treats the funder as an investor, giving them a participation in the project and financial returns for their funding.

The line of research for the proposed topic of investigation lies in the field of entrepreneurial finance. Even though crowdfunding as a new fund-raising system can benefit the creation of new companies through easier access to financing, it also raises some concerns that are a direct consequence of the principal-agent relationship that exists in the crowdfunding system. The principal (investor) is largely without any influence on how his/her investment is used by the agent (entrepreneur). Despite the fact of potential flaws might appear in the investment process, investors are evaluating not only economic and financial indicators of the crowdfunded project but also some less observable and behavioral factors of entrepreneurs and crowdfunding platforms. The proposed topic will research the characteristics of this relation further. This research aims to answer two questions to address the problem stated above: What characterize the profile of the investor who is interested in funding a start-up venture presented on a crowdfunding platform? How does the investor's perception of opportunistic behavior about the entrepreneur and the crowdfunding platforms affect the investor-entrepreneur relationship?

1.2. RESEARCH OBJECTIVES

1.2.1. General objective

GO1 To evaluate the trust and agency relationships among investors and entrepreneurs in the equity crowdfunding model.

1.2.2. Specific objectives

In order to understand the investor's willingness to fund entrepreneurs' projects through equity crowdfunding, it is useful to know certain aspects of the investor profile. A better description of the investor characteristics can benefit the entrepreneurs, the crowdfunding platforms and the government. Following, the first specific objective (SO) is:

SO1 To determine the characteristics of the investors willing to fund start-ups through crowdfunding platforms.

According to Nahapiet & Ghoshal, (1998), trust is considered social capital embedded within networks of mutual acquaintance and recognitions providing the basis for cooperation and collective action. This is very representative in the crowdfunding model: An entrepreneur with an idea who lacks financial resources to make it real, signs up in a crowdfunding platform

to create awareness of his/her project. The crowdfunding platform promotes the entrepreneur among the diverse and varied network of crowdfunding investors. The investor, after evaluating the viability of the project, decides to fund the project, many times without knowing the entrepreneur but trusting the crowdfunding platform, the ecosystem, the entrepreneur or the advice of other investors. The pool of money of one or more investors will complete the total funding needed by the entrepreneur, resulting in a collective successful cooperation. According to Cuevas-Rodríguez et al. (2012), numerous studies have been made of trusts and its repercussions in the management of organizations: cases of inter-organizational cooperation, alliances in governing structures, and compromise of foreign subsidiary companies with large multinationals. However, in the literature review little is said about the trust relationships among the investors and entrepreneurs in the equity crowdfunding model. Thus, the second specific objective of this research is:

SO2. To evaluate the investors' development of trust based on their beliefs about the competence, integrity and benevolence of the entrepreneur seeking financing through the equity crowdfunding model.

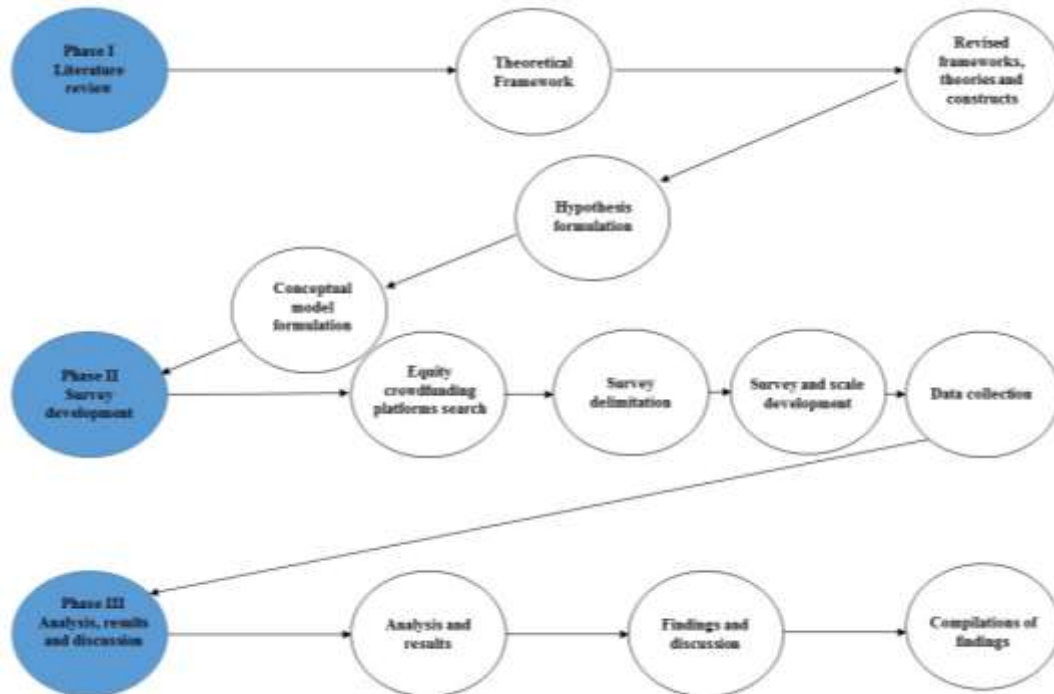
In this research project it is stated that both theories, trust and agency are complementary. Theory of agency (Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976): assumes that the investor's and entrepreneur's objectives are established outside the agency relationship and are formalized in their respective utility functions; focuses on designing efficient contracts that reduce agency costs; and bases the control mechanisms on the application of a reward-punishment relationships. Theory of trust (Bottazzi, Rin, & Hellmann, 2016; Cuevas-Rodríguez et al., 2012; Welter, 2012): recognizes that prior interactions can reduce and even eliminate conflict of interest between investor and entrepreneur; suggests that even when the reduction of governance costs is an important objective, the essential and critical goal is to create an adequate environment of constructive relationships that can reduce the need for control and lower the agency costs; and states that the application of mechanisms based on a reward-punishment relationship could widen differences between parties increasing the possibility of opportunistic behavior by the entrepreneur. Based on the above, the third specific objective of this research is:

SO3. To analyze the trust and agency relations among the investors, entrepreneurs and crowdfunding platforms.

1.3. RESEARCH METHODOLOGY

This study is based on a mixed method approach, employing both qualitative and quantitative methods in four different phases. The research design and sequence is illustrated in Figure 1.1 and is explained in the following paragraphs of this section.

Figure 1.1 Research design and sequence



1.3.1. Phase I: Literature review

In the first phase of this study, in **Chapter 2**, we explored the literature according to the needs to achieve each of the SO. Initially, we reviewed the literature on crowdfunding to determine whether and to what extent our research topic related to SO1 (investors' characteristics on equity crowdfunding), SO2 (trust analysis on equity crowdfunding) and SO3 (trust and agency analysis on equity crowdfunding) was researched by previous scholars. The majority of the research on crowdfunding was made on three out of the four-crowdfunding models: donation, reward-based and lending. Only one article, Mäschle (2012), used equity-crowdfunding model to formulate recommendations to improve disclosure requirement. After detecting a gap on research on equity-crowdfunding, we search and found no articles analyzing the investors' characteristics on equity crowdfunding. Continuing with the search on investors' characteristics, we found that it was researched extensively for business angels and venture capital under two frameworks: personal investment literacy (Volpe, Chen, & Liu, 2006) and household portfolios (Guiso, Haliassos, & Jappelli, 2002). Even though, business angels and venture capitalist are considered professional investors (Freear, Sohl, & Wetzel, 1994), it provided a good starting point to understand some characteristics of the professionals and also the non-professional investors. The literature and

frameworks were used then to formulate the hypothesis and conceptualize our model to achieve SO1.

To achieve SO2 we searched for theoretical articles dealing with the concept of trust in order to provide a clear definition. We found that trust has been widely researched in different disciplines such as psychology, sociology or economy and that some authors made various attempt to measure different level of trust (McAllister, 1995; Rempel, Holmes, & Zanna, 1985; Rotter, 1967). Then, we continued with the search of trust research on crowdfunding and found that trust had been only analyzed for lending crowdfunding model (Duarte, Siegel, & Young, 2012; Greiner & Wang, 2010). This opened an opportunity to use the concept of trust on equity crowdfunding. Mayer, Davis, & Schoorman (1995) provided to our research a model of trust which integrates research form multiple disciplines and differentiates trust from similar constructs. McKnight, Choudhury, & Kacmar (2002) provided to our research the literature grounded construct measures comprised in the model of trust. We adapted the integrative model of Mayer et al. (1995) and the construct measures of McKnight et al. (2002) to our research in equity crowdfunding to formulate the hypothesis and conceptualize our trust model.

SO3 dealt with both theory of trust and theory of agency. We complemented the literature review described for SO2 with the literature review of the agency theory. In order to accomplish SO3 we needed to review the definitions, concepts and assumptions of the agency theory. After we developed the theory of agency framework for our study, we searched whether crowdfunding was analyzed under this theory. One article was found to deal with crowdfunding under theory of agency context (Ley & Weaven, 2011), however this article applied a qualitative approach and described the perception of venture capitalists about equity crowdfunding ecosystem. We search if business angel and venture capitals were analyzed under theory of agency assumptions and found that it was a bit more developed than crowdfunding (Arthurs & Busenitz, 2003; Bitler & Moskowitz, 2005; Kelly & Hay, 2003; Mason & Stark, 2004; Randøy, Jenssen, & Goel, 2003; van Osnabrugge, 2000). We used the ex-ante and ex-post classification of the agency factors for crowdfunding (Ley & Weaven, 2011), and business angels and venture capitalists (Mason & Stark, 2004; van Osnabrugge, 2000) to formulate hypothesis and conceptualize the agency model in equity crowdfunding.

1.3.2. Phase II: Survey development

In this second phase, we developed a web-based survey that was sent to equity crowdfunding investors. First, we searched for on line for information about equity crowdfunding, we visit the many equity crowdfunding platforms in order to get information about their process, the investors' and entrepreneurs' characteristics and the types of projects being finance trough their

platforms in order to learn about this new phenomenon. Second, we delimited the countries where the survey was taken place. Third, we developed the questionnaire considering the variables of the personal investment literacy and household frameworks, and the relevant constructs of the theories of trust and agency in equity crowdfunding. Fourth, we collected the data using an online web-survey provider. Each of the sections in this second phase is explained in the paragraphs below.

a. Crowdfunding platform search

Crowdfunding platforms are predominantly profit businesses. Most employ a revenue model based on a transaction fee for successful projects, typically 4-5% of the total funding amount. As such, their objective is to maximize the number and size of successful projects (Agrawal, Catalan, & Goldfarb, 2013). This requires attracting a large community of investors and entrepreneurs as well as designing the market to attract high-quality projects, reduce fraud, and facilitate efficient matching between ideas and capital e.g., by increasing the degree of disclosure by the entrepreneurs and allowing for effective search on the side of the funders.

Crowdfunding platforms also have an incentive to attract projects that can generate a disproportionate share of media attention, because they both expand the existing community of funders and allow the platform to expand into new categories (Kain, 2012). Being the Internet and social media the main channels through that the crowdfunding platforms can increase the numbers of members of the community, investors or entrepreneurs, these crowdfunding platforms need to be open to public and disclose some information.

At the end of 2015 the top ten equity crowdfunding platforms in Europe were (Capati, 2015): Companisto, Crowdcube, FundedByMe, Invesdor, MyMicroInvest, Seedmatch, Seedrs, Symbid, SyndicateRoom and Wiseed.

Companisto is an equity crowdfunding platform based in Berlin. It allows individual crowd investors to endow a given firm for as low as €5 and up to €500.000. There is no limitation for companies on how much funds they want to raise. Companisto had funded companies and startups from various industries such as real estate -*Weissenhaus* has raised €7.5 million-, food, toys, digital tech, among others. Up to 2016, it has received more than €36 million in investments from more than 65.000 investors and funded more than 51 projects.

Crowdcube is a UK-based equity crowdfunding platform that allows entrepreneurs and Small Medium Enterprises (SMEs) to raise capital in various industries such as art and design, consumer electronics, film and television, professional businesses and services. Among others, the capital

can be raised via equity, debt, and investment fund options. On this platform, the investor can be a private-crowd-investor where he/she can receive shares from the companies' released shares the investor have supported. As of writing, Crowdcube has successfully funded more than £212 million with more than 481 successful projects and 339.600 members registered. Companies need to be a UK Ltd company to get started and the investors can start with £10 investment.

FundedByMe is a Swedish-based early entrant crowdfunding platform that offers a combination of reward- and equity-based crowdfunding "for intelligent growth", allowing the investors to allocate money in products and services that they are passionate about. With a large market in Scandinavia, FundedByMe bagged the Top 100 Startup at Wired UK 2013 and received more than €30 million investment and funded 463 as of this writing. FundedByMe claimed to have more than 74.000 members in 180 countries.

Invesdor is a Helsinki-based equity crowdfunding platform, the first to operate and provide financial alternative services in Northern Europe. It serves as a matchmaker between investors and businesses since 2013. The Nordic platform tackles on a diverse group of companies and services, whether in real estate, food chains, or digital platforms. Invesdor has raised more than €10 million euros with 47 successful rounds and 111 companies listed.

MyMicroInvest is a Belgium-based crowdfunding platform that allows individuals to invest alongside with professional investors in Europe for as low as €100 on startups and SMEs. The company has received investments of more than €31 million and funded 57 companies from their 36.163 members.

Seedmatch is known as Germany's crowdfunding platform for startups, it is also a matchmaker between investors and startups, allowing the investors to get their equity shares starting from €250 for an individual portfolio. On the flipside, startups can raise funds as minimum as €100,000. As of this time, the company has received investments of more than €29 million with 95 funded projects and 50.623 registered investors.

Seedrs is the first equity crowdfunding platform that has received a regulatory approval from Financial Conduct Authority in 2012, supporting early stage and established businesses to raise funds via equity, debt and convertible campaigns. The company is based in London and allows to invest for as low as £10 or €10. Seedrs focus in different sectors whether in technology, wine and brewery or digital tech. Seedrs has raised more than £109 million with more than 340 funded projects till date.

Symbid is a Netherlands-based equity crowdfunding that provides traditional and new ways of financial alternatives for entrepreneurs. Investor can invest for as low as €20 to jumpstart any investments on promising startups. The platform boasts of a solid community of 44.663 registered private investors, 51 professional investors and has received over €16 million investment.

SyndicateRoom operates according to the “investor led model” where it has a syndicate of investors around professional investors, whilst allowing a crowd of online investors to invest in British companies, both in the early and late stages. As the name speaks for itself, it builds a syndicate of investors via equity. In a nutshell, you can invest with the “Angels” and have the opportunity to learn how they play around on shares. SyndicateRoom bagged the Alternative Finance Platform of the Year in UK at the AIFi Awards 2015. Since its founding in 2013, it has raised more than £62 million with. The investor can register as an introducer to leverage the network of investors or as an entrepreneur that can start with a minimum equity funding round of £150.000. From the investors’ side, they can start investing for as low as £1000.

Wised is a French-based equity crowdfunding platform in real estate that allows to invest collectively for as low as €1.000. The investor can allocate its investment on a variety of properties such as commercial properties, farms, residential blocks, etc. Wised comes with three options: invest on startups (invest for as low as €100), on real estate properties or get funds via cooperatives. As of writing, Wised has raised more than €69 million investment, funded 149 projects and have more than 77.800 members.

Summarizing, two German platforms (Companisto, Seedmatch), three UK platforms (Crowdcube, Seedrs and SyndicateRoom), one Netherlands (Symbid), one Belgium (MyMicroInvest), one Finland (Invesdor), one Swedish (FundedByMe), one French (Wised). Table 1.1 comprises the most relevant information for every crowdfunding platform including the country of origin, funds raised, number of project funded per each platform and number of invertors registered in the platforms.

Table 1.1 Crowdfunding platforms in Europe

Companies	Countries	Year launched	Funds raised (million)	Number projects	Investors reg.
Companisto	Germany	2012	€ 36	51	65,000
Crowdcube	UK ^a	2011	£ 212	481	339,600
FundedByMe	Sweden	2011	€30	463	74,000
Invesdor	Finland	2012	€ 10	47	N.D.
MyMicroInvest	Belgium	2011	€ 31	57	36,163
Seedmatch	Germany	2009	€ 29	95	50.623
Seedrs	UK	2012	£ 109	340	N.D.
Symbid	Netherlands	2011	€ 16	N.D.	44,663
SyndicateRoom	UK	2013	£ 62	N.D.	N.D.
Wised	France	2008	€ 69	149	77,800

^a Includes Crowdcube subsidiary in Spain

b. Survey delimitation

Mollick (2014) and Agrawal et al. (2015) agreed that success of crowdfunding efforts is related to country where the crowdfunding platform is located. Investors are generally willing to fund entrepreneurial projects that are located regionally or nationally. This statement is in line with the ranking showed in the previous section for the top ten equity crowdfunding platforms in Europe (Capati, 2015) where out of the ten crowdfunding platforms that belong to seven different countries. Due to personal networking process with investors in Germany and Netherlands and due to proximity to investors in Spain (Crowdcube subsidiary) we decided to focalize our study in these three countries.

Previati, Galloppo, & Salustri, (2015) proposed a methodology to determine if our selection was appropriate. They developed an index that measures the attractiveness of the different European countries to develop the crowdfunding ecosystem. The crowdfunding attractiveness index should be interpreted as a fundamental indicator of the criteria that affects this activity. According to Lieser & Groh (2011), the capacity of the countries to attract enterprise activity depends on different factors but mainly those related to their socioeconomic characteristics. The attractiveness index is composed by five sections with information relevant to the crowdfunding ecosystem: Enterprise, innovation environment, legal framework, household and Internet competencies, and loan market.

Lieser & Groh (2011) added for each of the sections that the enterprise section search for the relationship among companies and the Internet dimension with the potential to discover business opportunities and hardware equipment. The innovation environment part incorporates the potential of the crowdfunding ecosystem to create new products, services and systems that fit the best with the social and environmental needs. The legal framework sub-section includes the variables associated to the presence of solid legal structures, the protection of property rights and business bureaucracy. The household and Internet competencies contain components that describe what is needed in order to perform any activity using computational applications and skills. Finally, the sub-section under loan market refers to the conditions and trends about the demand and supply of home and non-financial enterprise loans.

The attractiveness index (Previati et al., 2015) analyzed twelve European countries: Austria, Germany, Belgium, Spain, Finland, France, Ireland, Italy, Luxemburg, Netherlands, Portugal, and United Kingdom. After analyzing the data, the authors made a global ranking of countries using a weighting average technique. The ranking was developed on a 10 points scale, being 10 the maximum grade to get and 0 the lowest. United Kingdom was the country with the highest score 7.5, followed by the Netherlands and Finland with 7.1, and Germany with 7. Four countries were

ranked top four of the five sections for attractiveness: Enterprise, innovation environment, household and Internet competencies, and loan market. Spain got the best result in the last factor, legal framework. Countries like Italy (4), Portugal (4.3) and Spain (5) share the lowest position in the ranking due to the household's lack of skills to interact with technology and the scarce competencies of local business to make business through the Internet. The other countries occupying the intermediate positions in the ranking are: Luxemburg (6.9); and Austria, France and Ireland (6). The findings raised by Previati et al. (2015) are in the line with the ones offered by Massolutions (2015) that locate United Kingdom, the Netherlands and Germany at the top tier by the number of agents in the market. Spain occupies the fifth position in the market of operative platforms.

Our country selection regarding Germany, Netherlands and Spain seems to be appropriate according to Previati, Galloppo, & Salustri, (2015) as these countries appear in the index of attractiveness of the different European countries crowdfunding ecosystem development.

c. Survey and scale development

We decided to divide the questionnaire in six sections using a five point-based Likert scale where 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. The sections were divided as follows: i) Demographic, ii) Crowdfunding and the issue of trust, iii) Entrepreneurs and the issue of trust, iv) Due diligence, v) Monitoring and control, and vi) Crowdfunding platform and the issue of trust.

Demographic questions are designed to help the researchers determine what factors may influence a respondent's answers, interests, and opinions. Collecting demographic information will enable the research to cross-tabulate and compare subgroups to see how responses vary between these groups. We based the demographic questions on the personal investment literacy (Volpe, Chen, & Pavlicko, 1996) and the household portfolios frameworks (Guiso, Haliassos, & Japelli, 2002).

Questions concerning crowdfunding, entrepreneurs and crowdfunding platforms, as well as the issue of trust are built on the integrative model of trust between individuals proposed by Mayer et al. (1995) and modified by Mcknight, Cummings, & Chervany (1998) in the context of new organizational relationships.

Due Diligence is an investigation of a business or person prior to signing a contract, or an act with a certain standard of care. A common example of due diligence in various industries is the process through which a potential acquirer evaluates a target company or its assets for an acquisition.

Investment control and monitoring is a function within the asset management, portfolio management or investment management. We build our questions regarding due diligence (ex-ante), and control and monitoring (ex-post) criteria discussed by (Ley & Weaven, 2011; Mason & Stark, 2004; van Osnabrugge, 2000).

We conducted a pilot survey with a small sample of ten equity crowdfunding investors in order to gain information and improve the efficiency of the main survey. After getting the investors' feedback the questionnaire was adjusted to improve understandability. The survey questions conducted for this research can be seen in Appendix 1.

d. Data collection

The use of the Internet as an evolving technology has made the data collection less costly, allowing not only researchers but also professionals in different disciplines to get information more quickly and easier than before (McDonald & Adam, 2003). However, the information actually gathered could be of low quality or high quality (Couper, 2000).

The most common survey contact methods are: mail, telephone, personal interviews and electronic networks. Mail, telephone and personal interviews are considered traditional data collection methods that are suffering from falling participant rates, rising costs, respondents fears concerning misuse of personal information and managerial issues resulting from the time taken to conduct the surveys (Evans & Mathur, 2005; McDonald & Adam, 2003).

Opposite to traditional survey contact methods, there are many advantages to use online data collection methods in survey research: it reduces response time; lowers cost; eases data entry; promotes flexibility and control over format; recipient acceptance of the format; obtains additional response-set information; higher response levels; broader stimuli potential through the inclusion of color; and even greater enjoyment (Bell, 1999; Granello & Wheaton, 2004; Jackson & DeCormier, 1999; McDonald & Adam, 2003). Weible & Wallace (1998) referred to these advantages as the efficiency of online data collection method.

Previous research showed that it was difficult to identify investors (Harrison & Mason, 1992; Landström, 1993; Wetzel, 1983) and that investors tend to be reluctant to participate in a study because they prefer to remain anonymous (Erikson, Sørheim, & Reitan, 2003). Harrison & Mason (1992) described three methods of identifying investors: (a) sending questionnaires to a large number of individuals assumed to have made equity crowdfunding investments, (b) contacting the investors through the companies in which they have made investments, and (c) using the "snowball method" to identify the investors. The snowball method consist in identifying one

investor who knows another one who may also be contacted (Erikson et al., 2003; Harrison & Mason, 1992). In order to obtain the responses a large-scale distribution of questionnaires to individuals assumed to be investors was used through four different groups in LinkedIn.

LinkedIn is the largest professional matchmaker site in the world and personalize the public staging of one's identity (van Dijck, 2013). This professional online platform resembles a formatted CV containing the most relevant facts on education, current and past positions, and former experience. The investors' responses were taken from using different groups and forum in LinkedIn related to crowdfunding. We found four relevant groups of crowdfunding in LinkedIn. The largest group found is "CrowdSourcing & CrowdFunding for Entrepreneurs & Investors" with 42.887 members. Another relevant group is "INVESTOR CIRCLE- Startup Specialists (Investors VC Angels Funds PE Crowdfunding Experts Mentors)" with 1.286 members. The third group looked up was "Equity Crowdfunding" with 598 member, and finally the fourth group is "Symbid Investor Community" with 241 members. Knowing that not all the participants of any of the four crowdfunding groups in LinkedIn are investors and that across the group members could be found entrepreneurs, professionals, and crowdfunding enthusiasts, the use of a profiling method could improve the risk of having a very low sample representativeness.

The online survey under research was populated in each of the four equity crowdfunding LinkedIn groups in different times in order to control the responses received from each group and not create any time overlap. The online survey was opened within a range of 7 to 15 days depending on the size of the group, applying the rule the largest the group the largest the number of days to let the post for the survey be opened on the LinkedIn group. The idea of having the post from a week to a maximum of 10 days was to intend to reduce the problem of lower response rates and allow the participants to realize that there was a research being conducted. Crawford & Lamias (2001), Kittleson (1997) and Solomon (2001) found that it was possible to increase the response rate by sending reminders. Also, in order to decrease the risk of lower response rate the group's participant were sent a reminder of the post, there are many articles and comments written daily and the survey post could be let below the range of reading for many participants, this technique would allow to engage the participants with the survey.

First, a Premium LinkedIn account was needed in order to have access to the members profile and the possibility to send them an InMail¹. Second, three different countries were selected to start with the data collection process: Germany, the Netherlands and Spain. The reason of choosing Germany and Spain is because previous contact with investors of these crowdfunding platforms

¹ InMail messages are sent directly to another LinkedIn member who is not connected to you. If you have a Basic (free) account, you must upgrade to a Premium account to use InMail.

in those countries were made. The reasoning behind the Dutch crowdfunding platform was that an existing LinkedIn group having already 241 members was much more convenient in terms of sample representativeness than focusing efforts in a group of 42.887 members with different interest, affiliations, carriers and locations. Third, after receiving the survey responses from the German, Spanish and Dutch investors, some referrals that matched with the sample requirement (being equity crowdfunding investors and being located in Germany, Spain or the Netherlands) were requested. Fourth, it was requested to the survey respondent to invite some other known investors to connect with LinkedIn with the researcher in order to establish a more fluid communication. Fifth, a LinkedIn profile review was made in order to check if the referrals matched with the sample requirement. Sixth, the survey was sent to the referral with a brief explanation of the research objective. Five rounds of referrals were concluded getting access to 242 investors in equity crowdfunding.

1.3.3. Phase III: Analysis and discussion

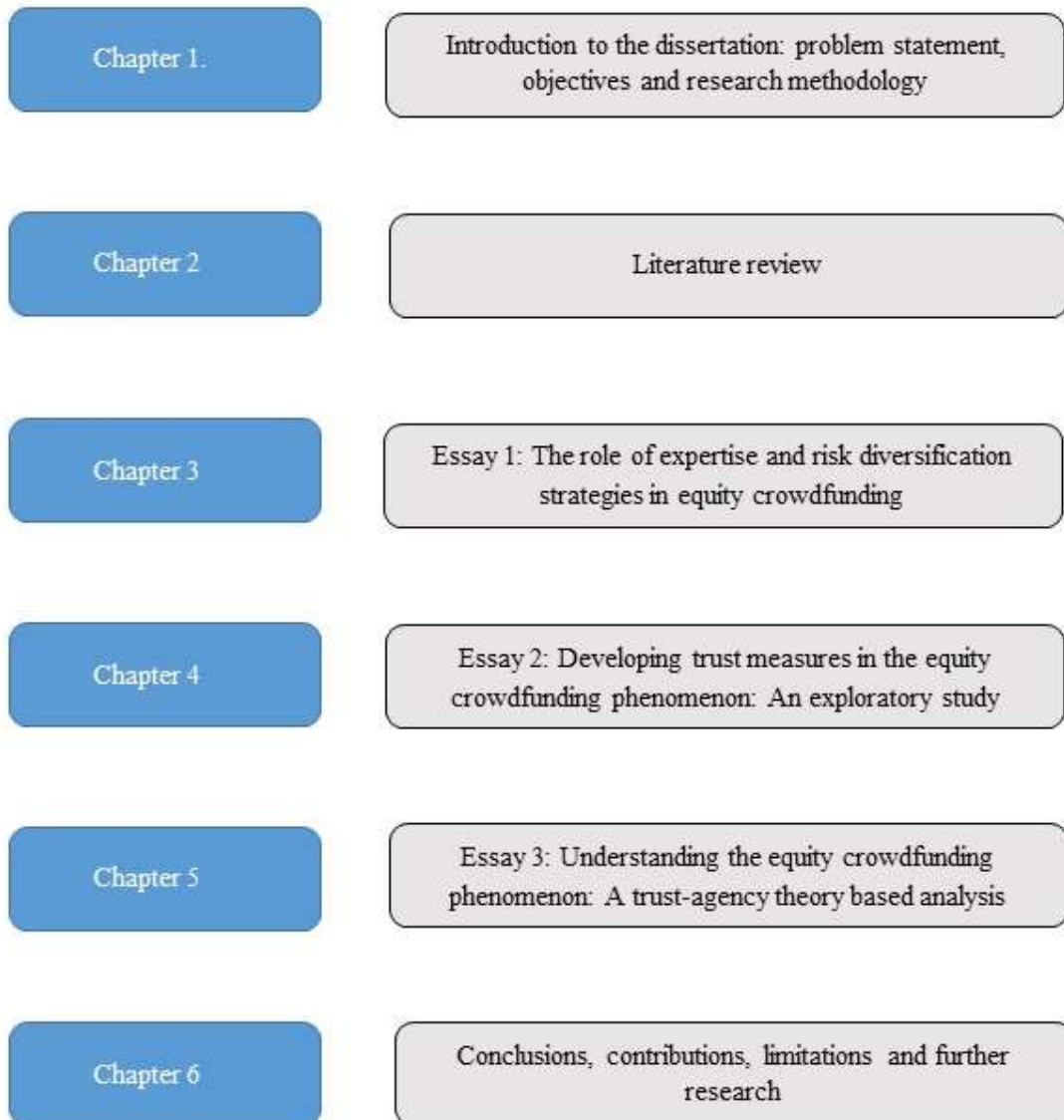
We processed and analyzed the data using a different methodology approach for each of the essays. In essay one, we run several standard tests to ensure the suitability of the approach, followed by principal component analysis (PCA) to reduce the dimension of the number of dependent variables initially considered, and finally used multivariate regression analysis for hypotheses testing. In essay two, we applied the structural equation modeling (SEM) technique to explore and test causal relationships in our trust model. In the essay three, we used partial least squares path modeling (PLS-SEM) to estimate the magnitude and significance of our hypothesized causal connection between the trust and agency observed variables, latent variables and items. Each essay includes its own section of analysis and discussion. **Chapter 6** compiles all the finding, conclusions, contributions, limitation and further research of this dissertation.

1.4. STRUCTURE OF THE STUDY

This study is organized into six chapters (Figure 1.2). This introductory chapter identifies and explains the research areas of the study including the research questions, objectives of the study, contribution to the knowledge and the research methodology. The second chapter presents a literature review about the relatively new phenomenon of crowdfunding that delimitates our field of action in the equity crowdfunding model. Chapter three determines the characteristics of the investors willing to fund start-ups through crowdfunding platforms. Chapter four evaluates the investors' development of trust based on their beliefs about the competence, integrity and benevolence of the entrepreneur seeking financing through the equity crowdfunding model. Chapter five analyzes the trust and agency relations among the investors, entrepreneurs and

crowdfunding platforms. Finally, chapter sixth includes the discussion and conclusions of this study.

Figure 1.2 Structure of the study



2. LITERATURE REVIEW

2.1. CROWDFUNDING LITERATURE REVIEW

The academic literature on crowdfunding has evolved in parallel to the crowdfunding phenomenon. Initially, the academic literature was focused on how crowdfunding was mainly used to finance artists from different sectors through the donation model (Agrawal et al., 2013). Later on, other artistic and creative areas such as film or journalism adopted the idea (Moritz & Block, 2016). Subsequently, many entrepreneurs offered a reward in exchange for participating as company backers to promote and develop a product or service prototype through a reward-based model (Belleflamme et al., 2014; Giudici, Guerini, & Rossi-Lamastra, 2013; Kuppusswamy & Bayus, 2013). In recent years, crowdfunding is seen as a tool to reduce the funding gap in early stages of new venture through lending or equity models (Agrawal et al., 2013; Ahlers, Cumming, Günther, & Schweizer, 2015; Hervé, Manthé, Sannajust, & Schwienbacher, 2016; Moritz & Block, 2016).

Three literature reviews were already identified on crowdfunding. Bachmann et al. (2011) discussed the main results of 43 scientific articles on peer-to-peer (P2P) lending. Feller, Gleasure, & Treacy (2013) structured research on crowdfunding quantitatively according to different forms of crowdfunding without considering specific contents of the articles. Moritz & Block (2016) structured the articles according to the main crowdfunding actors: capital seekers (entrepreneurs), capital providers (investors) and intermediaries (crowdfunding platforms). They considered scientific articles and working papers with a focus on economic research found a total of 127 scientific articles, many of which were included in the two previous literature reviews on crowdfunding.

Initially, the scientific discussion mentioning *crowdfunding* were focused on legal issues under the U.S. law. (Stemler, 2013). The legal restrictions of crowdfunding under the Securities Law from 1933 were analyzed (Bradford, 2012; Hazen, 2011; Hemingway, 2012; Stemler, 2013) and its implication in the JOBS Act (Cohn, 2012; Hazen, 2011; T. A. Martin, 2012; Stemler, 2013) as seen in Table 2.1.

Table 2.1 Crowdfunding legal analysis adapted from Moritz & Block (2016)

Author(s)	Content	Method	Source
Bradford (2012)	Exemption proposals from the Securities Act for smaller companies through equity-based crowdfunding.	Legal analysis	Securities Act
Cohn, (2012)	Critical consideration of the provisions of the JOBS Act.	Legal analysis	JOBS Act
Hazen (2011)		Legal analysis	Securities Act, Jobs Act

	Disclosure obligation under the JOBS Act under consideration of investor protection.		
Hemingway (2012)	Theoretical and practical analysis of crowdfunding as an alternative to early-stage financing of start-ups.	Legal analysis	Securities Act
Heminway (2013)	Proposal for the reformation of U.S. financial market regulations; regulation of risks.	Legal analysis	Securities Act
Martin (2012)	Analysis of the JOBS Act and its key provisions; motives for crowdfunding from a business perspective and its possible consequences for a company.	Legal analysis	JOBS Act
Stemler (2013)	Equity-based crowdfunding before and after the JOBS Act.	Legal analysis	Securities Act, JOBS Act

Venture financing discussion through crowdfunding began with Belleflamme, Lambert, & Schwienbacher (2010) and Schwienbacher & Larralde (2010). Belleflamme et al. (2010) used industrial organizational theory to build two models: in the first model, they studied the conditions under which crowdfunding is preferred to traditional forms of external funding; and in the second model, they provided some theoretical underpinning for empirical findings where they stated that non-profit organizations tend to be more successful in using crowdfunding. Schwienbacher & Larralde (2010) described the factors affecting the entrepreneurial preferences for crowdfunding as a source of finance using a case study in the French market they elaborated different business models used to raise money from the crowd. Table 2.2 summarizes the initial articles of the authors that they worked together in the crowdfunding phenomenon.

Table 2.2 Initial articles discussing venture financing in crowdfunding

Author(s)	Title	Content
Belleflamme et al. (2010)	Crowdfunding: An Industrial Organization Perspective.	Propose a definition of crowdfunding and medialization of crowdfunding in non-profit organization.
Schwiebacher & Larralde (2010)	Crowdfunding of small entrepreneurial ventures.	Elaborate different business models used to raise money from the crowd using a French company as a case study.

Later on, a number of scientific contributions emerged, following a descriptive, explanatory or concept-based approach that used a case study methodology in the respective national context of residence from the authors (A. Bachmann et al., 2011; Feller et al., 2013; Moritz & Block, 2016). Table 2.3 provides a summary of those studies.

Table 2.3 Descriptive, explanatory and concept-based literature on crowdfunding

Author(s)	Title	Content
Hemer (2011)	A Snapshot on Crowdfunding.	Describes the principle characteristics, range of players and the different business models in crowdfunding.
Giudici, Nava, Lamastra, & Verecondo (2012)	Crowdfunding: The new frontier for financing entrepreneurship?	Adopting a phenomenon-based approach compare crowdfunding with other forms of

		entrepreneurial finance in Italian targeting crowdfunding platforms
(Martínez-cañas, Ruíz-Palomino, & del Pozo-Rubio (2012)	Crowdfunding and social networks in the music industry: Implications for entrepreneurship	Analyzing the case of a Spanish crowdfunding platform, the authors examine the origins, concept and models in the crowdfunding music industry.
Mitra (2012)	The role of crowdfunding in entrepreneurial finance.	This study focused on how crowdfunding works, examining the global market for crowdfunding and its rationale of business to crowdfund given the challenges of capital access for fledging enterprises.
Tomczak & Brem (2013)	A conceptualized investment model of crowdfunding.	Drawing on an in-depth review of current literature on crowdfunding, this article creates an investment model of crowdfunding with various reward models available to investor and investee, providing a detailed examination of the current landscape of crowdfunding based on available literary sources.
Vitale (2013)	Crowdfunding: Recent international developments and analysis of its compatibility with Australia's existing regulatory framework.	This article considers the emergence of crowdfunding through the convergence of the two distinct concepts of crowdsourcing and microfinance. An assessment of whether Australia's current regulatory framework is compatible with crowdfunding has been made, with recommendations for regulatory action.
Wheat, Wang, Byrnes, & Ranganathan (2013)	Raising money for scientific research through crowdfunding.	This article discussed the utility of crowdfunding from the perspective of individual scientists or laboratory groups looking to fund research. It addressed some of the main factors determining the success of crowdfunding campaigns, and compared this approach with the use of traditional funding sources.
Ingram, Teigland, & Vaast, (2014)	Solving the puzzle of crowdfunding: Where technology affordances and institutional entrepreneurship collide.	Based on two complementary literature review: institutional entrepreneurship and technology affordances, the article examines existing institutional logics around start-up investment before turning to the features of crowdfunding in Sweden.

The first empirical studies were qualitative in nature, describing the crowdfunding phenomenon. Initial market data were analyzed and enhanced with findings mainly from interviews (A. Bachmann et al., 2011; Feller et al., 2013; Moritz & Block, 2016). Table 2.4 summarizes those initial qualitative-empirical studies in crowdfunding.

Table 2.4 Literature with qualitative analysis on crowdfunding

Author(s)	Title	Content
Aitamurto (2011)	The impact of crowdfunding on journalism.	This study examines the motivation for backing a USA platform community-funded reporting project through a case study about Spot.U.s. The study concludes that reader donations build a strong connection from the reporters to the donors.
Ley & Weaven (2011)	Exploring agency dynamics of crowdfunding in start-up capital financing.	This article provides an initial investigation into crowdfunding identifying how it may be appropriately adopted within the start-up equity-financing context with data drawn from interviews to 11 venture capitalists.
Röthler & Wenzlaff (2011)	Crowdfunding Schemes in Europe.	This report provides a synthesis of use of crowdfunding, identify issues arising from the use of crowdfunding within the European Union (EU) and provides recommendations concerning

		the potential regulation of crowdfunding schemes at EU and national level.
Gerber, Hui, & Kuo (2012)	Crowdfunding: Why people are motivated to post and fund projects on crowdfunding platforms.	This study reports findings on the motivations to post and fund projects using qualitative exploratory study of creators and funders on three crowdfunding platforms

When crowdfunding transactions grew in volume, both in number of projects and number of investors, and crowdfunding platforms established themselves as intermediaries, it also made possible to gather enough data to conduct quantitative research. Many researchers conducted their own survey in order to implement a quantitative research (A. Bachmann et al., 2011; Feller et al., 2013; Moritz & Block, 2016). Table 2.5 summarizes the initial quantitative-empirical studies in crowdfunding.

In this study we are interested in the analysis of trust issues and agency dynamics in the equity crowdfunding model. Agency dynamics has been researched in five of the ten articles selected, Table 2.6 summarizes the content of this articles. Trust literature on crowdfunding is summarized on Table 2.7.

Literature in equity-based crowdfunding has not been extensively developed yet as the literature found in P2P lending markets. Additional to the articles already commented in Table 2.6 (Ley & Weaven, 2011; Moritz, Block, & Lutz, 2015), we found one additional article that analyzed the crowdfunding phenomenon using equity-based crowdfunding. Table 2.8 summarizes the content of the additional literature in equity-based crowdfunding.

However, most of the literature reviewed focuses on the three first models: donations, lending and reward-based (A. Bachmann et al., 2011; Feller et al., 2013; Moritz & Block, 2016). Little has been done regarding the equity-based crowdfunding model. We have found only three articles tapping it, and they all used qualitative research through interviews and literature review. Furthermore, trust topics on crowdfunding are marginally researched in two articles related to P2P lending markets. Agency dynamics has been researched more deeply than trust topics on crowdfunding. However we could not find a single article were both theories, trust and agency, are used together. This opens a window of opportunity to research the equity crowdfunding phenomenon under the theory of trust and the theory of agency in the equity-based crowdfunding model.

Table 2.5 Literature with quantitative analysis on crowdfunding

Author(s)	Title	Content
Belleflamme et al. (2013)	Individual crowdfunding practices.	Investigates characteristics of individual crowdfunding practices and drivers of fundraising success for equity based and non-profit projects highlighting some important aspects of crowdfunding with special attention to the role and behavior of crowdfunding platforms in the Belgian market.
Burtch, Ghose, & Wattal (2013)	An empirical examination of the antecedents and consequences of contribution patterns in crowd-funded markets.	This study empirically examines social influence in a crowd-funded marketplace for online journalism projects, employing a dataset that incorporates contribution events and web traffic statistics for approximately 100 story pitches. The dataset allows to examine both the antecedents and consequences of the contribution process in crowdfunding.
Harrison (2013)	Crowdfunding and the revitalization of the early stage risk capital market: catalyst or chimera?	This article suggests that crowdfunding represents the disintermediation of the finance market and the emergence of new institutional forms. The founder and funders are connected directly with the interaction of the crowdfunding platforms that are increasing their role in the equity model, some years ago the equity crowdfunding model was non-existing and now it is calculated to contribute to raising approximately 5% of all funds.
Kuppuswamy & Bayus (2013)	Crowdfunding creative ideas: The dynamics of project backers in Kickstarter.	The study analyzes two years of publicly available panel data on successfully and unsuccessfully funded projects listed on Kickstarter. The data is used to study the role of social information in the dynamic behavior of project backers.
Pierrakis & Collins (2013)	Crowdfunding: a new innovative model of providing funding to projects and businesses.	This report examines an innovative new model of providing funding to projects and businesses, the crowdfunding model.
A. Agrawal, Catalan, & Goldfarb (2014)	Some simple economics of crowdfunding.	The article discusses how crowdfunding platforms might generate challenges and opportunities for geographically separated funders and founders using the crowdfunding platform Sellaband where the average distance between an artist and a funder is approximately 5.000 km. The findings suggest that there are many crowdfunding investment opportunities despite the large distance among the start-up project location and the investors.
Belleflamme & Lambert (2014)	Crowdfunding: some empirical findings and microeconomic underpinnings.	The authors provide insights into information asymmetries between entrepreneurs and crowd funders, analyzing reward-based and equity crowdfunding models. In the reward-based crowdfunding, entrepreneurs invite consumers to pre-order the product with the purpose of collecting the necessary capital for initiating production. In the second form, equity crowdfunding, entrepreneurs request funders to provide money in exchange for a share of future profits.
Belleflamme et al. (2014)	Crowdfunding: Tapping the right crowd.	The authors suggest that when initial capital requirement is relatively small, entrepreneurs prefer the pre-ordering mechanism but they prefer the profit-sharing mechanism when the funding capital is large. Building a community that supports the entrepreneur is a critical ingredient for crowdfunding to be more profitable than traditional funding.
Mollick (2014)	The dynamics of crowdfunding: An exploratory study.	The article develops an exploratory empirical research using the universe of projects on Kickstarter from its beginning in 2009 until July 2012, basing his research on the donation and the reward-based models. It concludes that project quality, geography, network and preparedness are important variables for the crowdfunding success.
Mollick & Kuppuswamy (2014)	After the campaign: Outcomes of crowdfunding.	A survey of large design, technology, and video games projects that attempted to raise money using Kickstarter before mid-2012 was made. The authors found that reward-based crowdfunding can support more traditional entrepreneurship. The survey also suggested that crowdfunding provided many potential benefits beyond the crowdfunded money itself, including helping provide access to customers, press, employees, and outside funders.
Ahlers et al. (2015)	Signaling in equity crowdfunding.	This study presents an initial empirical examination of which start-ups are most likely to induce small investors to fund an entrepreneur through equity crowdfunding. Using Australian data, it presents evidence that successful crowdfunding initiatives rely on credible signals like financial roadmaps (such as preplanned IPO or acquisition exit strategies) and risk factors (such as amount of equity offered and whether financial forecasts are provided), as well as board experience, measured by education level (e.g., percentage with MBA degrees), and number of board members.

Table 2.6 Agency dynamics literature on crowdfunding

Author(s)	Title	Content
Freedman & Jin (2008)	Do social networks solve information problems for Peer-to-Peer lending? Evidence from Prosper.com.	This study examined what information problem exist on Prosper.com a peer-to-peer (P2P) lending platform on the Internet and whether the social network help alleviate the information problems. Three information problems were identified using transaction data: adverse selection, loan selection and increase in the interest rate.
Freedman & Jin (2014)	The information value of online social networks: lessons from peer-to-peer lending.	This study examined if social networks reduces information asymmetries in P2P lending markets and its effect on loan performance.
Ley & Weaven (2011)	Exploring agency dynamics of crowdfunding in start-up capital financing.	This article provides an initial investigation into crowdfunding identifying how it may be appropriately adopted within the start-up equity financing context with data drawn from interviews to 11 venture capitalists.
Kortleben & Vollmar (2012)	Crowd investing, an Innovative Option for Start-up Financing?	Based on an overview of German crowdfunding platforms, crowdfunding is analyzed from the principal-agent perspective. This is a preliminary work to be followed by a more extensive qualitative or quantitative empirical study.
Everett (2015)	Group membership, relationship banking and loan default risk: The case of online social lending.	This paper intends to find the impact that borrower-lender information asymmetries of the P2P have on adverse selection, moral hazard and the hold-up problem. It is quantitative in nature using data from Prosper.com lending platform.
Moritz, Block, & Lutz, (2015)	Investor communication in equity-based crowdfunding: a qualitative-empirical study.	This study investigates the role of investor communication in equity-based crowdfunding to reduce information asymmetries between crowd investors and new ventures using an exploratory qualitative research based on semi-structured interviews with 23 markets participants: 12 investors, 6 new ventures and 5 third parties.

Table 2.7 Trust literature on crowdfunding

Author(s)	Title	Content
Greiner & Wang (2010)	Building consumer-to-consumer trust in e-finance marketplaces: An empirical analysis.	The article analyzes and empirically testes the trust-building mechanisms of crowdfunding platforms for P2P lending marketplaces. The study uses data collected from Prosper.com.
Duarte, Siegel, & Young (2012)	Trust and credit: The role of appearance in peer-to-peer lending.	This article examined whether appearance-based judgments about individual borrowers' trustworthiness affect investors' decision in P2P lending markets using data form Prosper.com.

Table 2.8 Equity-based Literature on Crowdfunding

Author(s)	Title	Content
Mäschle (2012)	Which information should entrepreneurs on German crowd investing-platforms disclose?	Using a model based approach this article formulates recommendations for practical implementation to improve disclosure requirement. The authors stated that the increase of equity-based crowdfunding platforms would impact on the competition thus on disclosure requirements for companies.

2.2. PERSONAL INVESTMENT LITERACY AND HOUSEHOLD PORTFOLIO FRAMEWORK LITERATURE REVIEW

Poor investment knowledge is one of the reasons many investors have failed to manage their personal finances (Volpe et al., 1996) and inadequate knowledge is caused by lack of a sound financial education (Lusardi & Mitchell, 2007; Lyons, Palmer, Jayaratne, & Scherpf, 2006). The personal investment literacy framework examines whether individuals enhance certain level of investment literacy analyzing demographic variables such as gender, age academic discipline, and experience. According to Volpe et al. (1996), the importance of personal investment decisions cannot be overemphasized because they have a direct impact on people's quality of life. Such decisions include accumulating funds for a down payment for a home or an automobile, a child's education, personal goals/dreams, and retirement.

Theoretical analysis of household portfolios has emphasized mostly the choice between risk-free and risky financial assets (Guiso, Haliassos, & Jappelli, 2002). Initially household portfolio framework contributed significantly to the understanding of how risk aversion influences the propensity of households to take financial risk (Flavin & Yamashita, 2002; Polkovnichenko, 2005). Later, the framework dealt with the way in which uninsurable income risk influences the portfolio share of risky assets (Flavin & Yamashita, 2002; Guiso, Haliassos, & Jappelli, 2002; Polkovnichenko, 2005). Finally, the household portfolio framework introduced estimation on the effect of time-varying characteristics, such as wealth, income and age on the decision to invest in risky assets (Guiso, Haliassos, & Jappelli, 2002).

Investors' characteristics for business angels and venture capitalists have been researched extensively in different countries including the United States (Aram, 1989; Freear et al., 1994; Sørensen, 2007), the United Kingdom (van Osnabrugge, 2000), Sweden (Avdeitchikova, 2008), Canada (Black & Gilson, 1998; D. J. Cumming & MacIntosh, 2006; Duxbury, Haines, & Riding, 1996), Finland (Lumme, Mason, & Suomi, 1996), Japan (Tashiro, 1999), Australia (Hindle & Wenban, 1999), Norway (Reitan & Sørheim, 2000) and Singapore (Hindle & Lee, 2002). These studies have also frequently profiled a typical angel and venture capital investor as a high-worth middle-aged male with entrepreneurial experience. The investors' characteristics literature for business angels and venture capitalists is summarized on Table 2.9.

Table 2.9 Investors' characteristic for business angels and venture capitalist

Author(s)	Title	Content
Aram (1989)	Attitudes and behaviors of informal investors toward early-stage investments, technology-based ventures, and co-investors.	Fifty-five informal investors participated in a mail questionnaire where respondents differentiated themselves on a scale of very-early- stage (start-up) versus later-stage risk venture investments and on a scale of technology-oriented versus nontechnology-oriented investments. Informal investors in this sample also differed on the average number of co-investors (including institutions) per investment.
Freear et al. (1994)	Angels and non-angels: Are there differences?	This study examined the characteristics of high net worth individuals regardless of their investment history or their interest in venture investing.
Duxbury et al. (1996)	A personality profile of Canadian informal investors.	This article outlined the findings of a cross-sectional study that seeks to identify psychological characteristics of informal investors (angels) and to compare these characteristics to those of a control group of non-investors.
Lumme et al. (1996)	The returns from informal venture capital investments: An exploratory study.	This exploratory study was based on a survey of 38 active business angels in Finland who had made a total of 155 investments; 20 of these investors had made 49 exits. Two aspects are addressed. First, evidence is presented on investment performance and the timing and method of exit. Second, the paper explores differences between those investors with a successful track-record of exits and those with an unsuccessful track-record.
Black & Gilson (1998)	Venture capital and the structure of capital markets: banks versus stock markets.	This study offered an explanation for two central characteristics of the U.S. venture capital market: relatively rapid exit by venture capital providers from investments in portfolio companies; and the common practice of exit through an initial public offering.
Hindle & Wenban (1999)	Australia's informal venture capitalists: An exploratory profile.	Analysis of answers resulting from a survey of 36 respondents produced a descriptive profile of Australian Angels' identifying characteristics, patterns of investment behavior and investment criteria. This study generated and evaluated data resulting from an investigation of Australian business Angels which focused upon three primary research questions: (i) Who are Australia's Informal Venture Capitalists (Business Angels)? (ii) How do they behave? (iii) What are their investment criteria?
Tashiro (1999)	Business angels in Japan.	This paper examined business angels' characteristics and evaluated their potential to spark the development of new venture businesses. The paper concluded by comparing Japanese business angels with their counterparts in North America and Western Europe.
Reitan & Sørheim (2000)	The informal venture capital market in Norway? Investor characteristics, behavior and investment preferences.	With responses from 425 informal investors, this paper described the Norwegian informal investors in terms of their demographics, investment activity, and behavior and investment preferences. A comparison was made between the results from the Norwegian survey and findings from the UK and Sweden.
van Osnabrugge (2000)	A comparison of business angel and venture capitalist investment procedures: An agency theory-based analysis.	Utilizing data from 40 personal interviews and 262 questionnaire responses, this paper provides a detailed comparison of the investment criteria and procedures of business angels (BAs) and venture capitalists (VCs) across the full investment process.
Hindle & Lee (2002)	An exploratory investigation of informal venture capitalists in Singapore.	This paper presented an exploratory profile of Singapore's informal venture capitalists (business angels). It examined three issues: (i) investors' characteristic, comparing descriptive data on Singapore angels; (ii) the investee attractiveness issue, classifying the characteristics of an opportunity most likely to result in an actual investment; and (iii) relationship issues, describing key behaviors essential to the investor/investee relationship.
D. J. Cumming & MacIntosh (2006)	Crowding out private equity: Canadian evidence.	Empirical analysis of data from 1977-2001 in Canada suggested that "Labor Sponsored Venture Capital Corporation" has higher agency costs and lower profitability than private venture capital funds.
Avdeitchikova (2008)	On the structure of the informal venture capital market in Sweden: developing investment roles.	Based on quantitative data on 278 informal venture capital investors and 422 investments, this paper provides an estimation of the size of the informal venture capital market in Sweden and an analysis of its structure by making a categorization of informal investors' investment roles.

When considering “non-professional” investors, however, two different and complementary approaches may be of interest. On the one hand, the personal investment literacy framework (Volpe, Kotel, & Chen, 2002), focusing on individuals facing important decisions that will impact their (future) economic wealth. On the other hand, the household portfolios framework (Guiso, Haliassos, & Jappelli, 2002) attempts to explain the determinants of the demand of risky assets by the household portfolios investors. Table.2.10 summarizes the content of both frameworks.

Table.2.10 Personal investment literacy and household portfolio frameworks

Author(s)	Title	Content
Volpe et al. (2002)	A survey of investment literacy among online investors.	This study surveyed 530 online investors to examine their investment literacy and the relationship between the literacy and online investor characteristics.
Guiso et al. (2002)	Household Portfolios: An International Comparison.	This paper presents an overview of the main findings of an international project on household portfolios coordinated by the authors. Contributions to the project dealt with the state of the art in analytical, computational, and econometric methods of analysis of household portfolio choice, identify stylized facts and trends observed in five major countries, and discuss issues relating to the portfolios of two important population groups, namely the elderly and the rich.

2.3. TRUST THEORY LITERATURE REVIEW

McAllister (1995, p.25) defines trust as “the extent to which a person is confident in, and willing to act on the basis of, the words, actions and decisions of another”. In that sense, the concept of trust involves risk mainly because the principal is exposed to opportunistic behavior when he places trust in the agent (Zand, 1972). This exposure to risk is variable and the principal does not possess complete information regarding individual behavior, competence or attitudes that change across people (Cuevas-Rodríguez et al., 2012). Bottazzi et al. (2016) summarized trust as a subjective belief about likelihood that a potential trading partner will act honestly.

Fehr & Falk (2002) argued that certain non-monetary rewards and motives exist that shape human behavior. These include the desire to reciprocate, the desire to gain social approval or the simple enjoyment of developing a task. Furthermore, Hendry (2002) suggested that it is not possible for an organization to function effectively and delegate authority to agents without relying to some extent on their loyalty, honesty and goodwill. Cuevas-Rodríguez et al. (2012) state that where agents find utility in fulfilling their responsibilities, trust becomes the most efficient mechanism for maximizing the principal’s utility.

In management, trust is a subjective concept considered noise in the rational decision-making process, noise that should be avoided in order to assess the most appropriate decision (Cuevas-Rodríguez et al., 2012). However, complete avoidance of this noise is an unrealistic ideal. Business people cannot engage at all times in rational decision-making because information is not complete or objective and therefore subjective evaluations of other people's attitudes, obligations and future behavior are used as criteria for decisions (Becerra & Gupta, 2003). The business world is characterized by continued situations of uncertainty, and therefore it is necessary to understand the role played by trust and its consequences on business relationships.

The theory of trust addressed three points in order to better understand the relation between the trustor (investor) and trustee (entrepreneur). First, Granovetter (1985) recognized that prior interactions, previous encounters or meetings, can reduce and even eliminate conflict of interest between investor and entrepreneur. Second, Zaheer et al. (1998) suggested that is essential and critical is to build a business environment where there is no need for control, lowering in this way the agency costs.. Finally, Lee & Whitford (2008) and Perrow (1972) argued that the application of mechanisms based on a reward-punishment relationship could be counterproductive and widen differences between parties increasing the possibility of opportunistic behavior by the agent.

Trust has been widely researched in different disciplines such as psychology, sociology or economy. Psychologists regularly frame their assessment of trust in terms of attributes of trustors and trustees (Rotter, 1967). Sociologists often find trust in socially embedded properties of relationships among people (Granovetter, 1985) or institutions (Zucker, 1986). Economists tend to view trust as either calculative (Williamson, 2008a) or institutional (North, 1990). Rousseau, Sitkin, Burt, & Camerer (1998, p.402) argued that despite the common concern regarding these different disciplinary lenses, there is a "considerable overlap and synthesis in contemporary scholarship on trust". Table 2.11 summarizes the literature review based on trust theory.

Table 2.11 Trust theory literature review

Author(s)	Title	Content
Rotter (1967)	A new scale for the measurement of interpersonal trust.	This paper measures interpersonal trust and defined as an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon.
Kee & Knox (1970)	Conceptual and methodological considerations in the study of trust and suspicion.	This paper examined of both the theoretical and the methodological considerations relevant to the empirical study of trust and suspicion.
Zand (1972)	Trust and managerial problem solving.	This paper presented a model of trust and its interaction with information flow, influence, and control, and reported on an experiment based on the model to test several hypotheses about problem-solving effectiveness.
Granovetter (1985)	Economic action and social structure: The problem of embeddedness.	This paper concerned the extent to which economic action is embedded in structures of social relations, in modern industrial society
Rempel et al. (1985)	Trust in close relationships.	This study tested a theoretical model of interpersonal trust in close relationships with 47 dating, cohabiting, or married couples. The validity of the model's 3 dimensions of trust (predictability, dependability, and faith) was examined
Zucker (1986)	Production of trust: Institutional sources of economic structure, 1840–1920.	This study discussed 3 central modes of trust production, each with associated measures: (i) process-based, tied to past or expected exchange; (ii) characteristic-based, tied to person, based on social characteristics; and (iii) institutional-based, tied to formal societal structures, based on individual or firm-specific attributes or on intermediary mechanisms.
Mayer et al. (1995)	An integrative model of organizational trust.	This study included the characteristics of trustor, the trustee, and the role of risk. It is also presented a definition and a model of trust which integrate research from multiple disciplines and differentiate trust form similar constructs.
McAllister (1995)	Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations	This study addressed the nature and functioning of relationships of interpersonal trust among managers and professionals in organizations, the factors influencing trust's development, and the implications of trust for behavior and performance. Theoretical foundations were drawn from the sociological literature on trust and the social-psychological literature on trust in close relationships.
Knack & Keefer (1997)	Does social capital have an economic pay off? A cross-country investigation	This paper presented evidence that social capital matters for measurable economic performance, using indicators of trust and civic norms from the World Values Surveys for a sample of 29 market economies.
Humphrey & Schmitz (1998)	Trust and inter-firm relations in developing and transition economies	This article examined how extended trust grows or can be made to grow in industrial supply chains and clusters in developing countries.
Rousseau et al. (1998)	Not so different after all: A cross-discipline view of trust.	The article discusses trust theory, multidisciplinary research, and trust between organizations.
Zaheer et al. (1998)	Does trust matter? Exploring the effects of inter organizational and interpersonal trust on performance	It was investigated the role of trust in interfirm exchange at two levels of analysis and assess its effects on negotiation costs, conflict, and ultimately performance. Propositions were tested with data from a sample of 107 buyer-supplier interfirm relationships in the electrical equipment manufacturing industry using a structural equation model.

Fehr & Falk (2002)	Psychological foundations of incentives	The purpose of this paper was to show that this narrow view of human motivation might severely limit understanding the determinants and effects of incentives. Economists may fail to understand the levels and the changes in behavior if they neglect motives like the desire to reciprocate or the desire to avoid social disapproval.
McKnight et al. (2002)	Developing and validating trust measures for E-commerce: An integrative typology	This paper contributed by proposing and validating measures for a multidisciplinary, multidimensional model of trust in e-commerce. The model includes four high-level constructs--disposition to trust, institution-based trust, trusting beliefs, and trusting intentions--which are further delineated into 16 measurable, literature-grounded sub-constructs.
Ridings, Gefen, & Arinze (2002)	Some antecedents and effects of trust in virtual communities	This study explored several downstream effects of trust in virtual communities and the antecedents of trust. The data, applying an existing scale to measure two dimensions of trust (ability and benevolence/integrity).
Höhmman & Malieva (2005)	The concept of trust: Some notes on definitions, forms and sources	This article theoretically comprised the trust analysis in the past two decades related to progress of modernity, change in values and convictions, globalization and the process of transition in Eastern Europe.
Friederike Welter & Smallbone (2006)	Exploring the role of trust in entrepreneurial activity	This paper aimed to contribute to a discussion of the role of trust in the field of entrepreneurship, both conceptually and empirically.
Williamson (2008)	Calculativeness, trust, and economic organization	The article defined and delimited the elusive notion of trust taking in consideration the many meanings the literature on trust reveals.
Guiso, Sapienza, & Zingales (2009)	Cultural biases in economic exchange	Using data on bilateral trust between European countries, this study analyzed how much cultural biases affect economic exchange. It is documented that trust is affected not only by the characteristics of the country being trusted, but also by cultural aspects of the match between trusting country and trusted country.
Cuevas-Rodríguez et al. (2012)	Has agency theory run its course?: Making the theory more flexible to inform the management of reward systems	This study explored the boundary conditions of traditional agency theory in the hope of extending agency theory outside its current contextual boundaries.
Welter (2012)	All you need is trust? A critical review of the trust and entrepreneurship literature	This article critically reviewed the literature pertaining to trust and entrepreneurship, highlighting the diversity and complexity of this construct. In addition, the interdependency of trust with context, as well as its dual nature in relation to control and as a sanctioning mechanism, is explored.
Bottazzi et al. (2016)	The importance of trust for investment: Evidence from venture capital	Using hand-collected data on European venture capital, this paper showed that the Eurobarometer measure of trust among nations significantly affects investment decisions.

2.4. THEORY OF AGENCY LITERATURE REVIEW

The agency relationship is one of the oldest and most common codified modes of social interaction (Ross, 1973). According to Eisenhardt (1989, p.58), “agency theory ideas on risk, outcome uncertainty, incentives, and information systems are novel contributions to organizational thinking”. The theory of agency involves two parties in a potential conflict dilemma: the principal and the agent. The principal delegates responsibilities and tasks to the other party, the agent, who performs those tasks on the principal’s behalf (Jensen & Meckling, 1976).

Theory of agency is concerned with resolving some problems that can occur in the principal-agent relationships (Eisenhardt, 1989). The first problem occurs when the parties, principal and agent, have different objectives. The agent is in charge of the real work on a day-to-day basis and he/she has more information about the business than the principal does. The agent could use this information in his/her own benefit without acknowledging and giving consideration to the benefits that the principal seeks from the relation. Due to lack of proximity to the daily activities, the principal does not know if the agent is using the information properly in his favor or if the agent is using it primarily or solely to his/her own benefit. This issue may lead to many problems in managing the firm, because the principal has already paid for a share in the company.

The second problem occurs when it is difficult or expensive for the principal to verify and control what the agent is doing. The principal is not always around to keep an eye on the agent, thus it becomes difficult or expensive for the principal to verify and control the agent. Either the principal has to work in the company in order to control the agent or hire a manager that controls the agent. Both scenarios could reduce the principal’s return on investment due to the extra expenses incurred to verify and control the agent. In order to control that the principal’s and the agent’s objectives are met for the benefit of the business, the parties can sign a contract where they commit to a collaborative effort. The contract’s objective is to delimit responsibilities and establish punishment in case that any of the parties does not achieve what was agreed when the cooperation started. Therefore, a contract could be the instrument that limits potential costs arising from each of the parties taking advantage of the other. However, it could be unpractical to include all potential responsibilities and punishments in such a contract.

The third problem is that the principal may prefer different courses of action than the ones decided by the agent, often as a result of different risk preferences. On the one hand, the principal will seek to keep his/her investments and gain a return. On the other hand, the agent will try to obtain the results required by the principal and obtain a compensation for delivering the work done and obtaining results.

The theory of agency has developed along two approaches: a positivist approach and a principal-agent approach (Jensen, 1983). Both approaches share a common unit of analysis: the contract between the principal and the agent. However, they also have common assumptions about people, organizations, and information (Eisenhardt, 1989; Fama, 1980; Harris & Raviv, 1979). Positivist researchers have focused on identifying situations in which the principal and agent are likely to have conflicting goals and then describing the governance mechanisms that limit the agent's self-serving behavior (Demski & Feltham, 1978; Eisenhardt, 1989). The positivist theory of agency includes research on the ownership structure of the corporation (Jensen & Meckling, 1976); the discussion on role of efficient capital and labor markets as information mechanism that are used to control the self-serving behavior of top executives (Fama, 1980); and the role of the board of directors as an information system that the shareholders within large corporations could use to monitor the opportunism of top executives (Fama, 1980; Jensen, 1983).

Principal-agent researchers are more concerned with a general and broad theory and understanding of the principal-agent relationship (Eisenhardt, 1989). This approach of the theory can be applied to employer-employee, lawyer-client, buyer-supplier, and other agency relationships (Harris & Raviv, 1979) or investor-entrepreneur in our study.

The agency problem arises because the principal and the agent have different goals, and the principal cannot establish if the agent has behaved adequately. Two aspects of the agency problems are cited in the formal literature: Moral hazard and adverse selection (Eisenhardt, 1989). The assumption under the moral hazard is that the agent is not performing as he or she should be, showing lack of effort in detriment of the principal. For example, moral hazard occurs when the owner of an entrepreneurial start-up funded with an investor's capital is using the money for personal reasons (i.e. buying a car, a house, paying his/her personal credit cards, etc.) and the investor cannot detect what the entrepreneur is doing with the money invested. Adverse selection refers to the misrepresentation of ability by the agent. The agent could claim certain abilities that actually he/she does not have. For example, a crowdfunded owner could claim to have a solid business or product and the investor cannot prove whether this is truly the case.

In the case that moral hazard and adverse selection behavior appears the principal has two options. The first option is to invest in information systems in order to determine the agent's behavior. The principal should invest in budgeting systems, reporting procedures, board of directors, and additional layers of management (Demski & Feltham, 1978; Eisenhardt, 1989; Harris & Raviv, 1979; Jensen & Meckling, 1976). The second option the investor has when confronted with moral hazard or adverse selection is to make a contract based on the outcomes of the agent's behavior

(Eisenhardt, 1989). The idea of this contract is to align the agent's objectives with those of the principal and transferring the risk to the agent. The business environment with potential changes in policies, rivalry in the industry, bargain power of customers or suppliers, and threats of new entrants results in uncertain outcomes.

Theory of agency has been widely used by researchers studying business angels (Kelly, 2007) and venture capitalists (Arthurs et al., 2003) to explain the investor-entrepreneur relationship, but little has been developed regarding this relation in crowdfunding since it is a new system that just appeared a few years ago. First of all, one of the aspects analyzed in literature about business angels and venture capitalists is the agency risk. A risk exists as it is very difficult for the investors to fully assess the intentions and competence of the entrepreneur (van Osnabrugge, 2000). Second, the researchers argued that the notion of the contracts among the investors in business angels and venture capitalists does not give a complete picture (Kelly and Hay, 2003) and concluded that there is something more that could explain that investor-entrepreneur relationship. Third, Arthurs et al. (2003) suggested that future work consider the entrepreneurs as much more than partial owners after the business angels and venture capitalists invest. It is also important to account for their psychological ownership because they often think and act like owners beyond their financial equity position. Table 2.12 summarizes the articles reviewed under the theory of agency.

Table 2.12 Theory of agency literature review

Author(s)	Title	Content
(Ross, 1973)	The economic theory of agency: The principal's problem	This article discussed the agency relations in the utility function under uncertainty circumstances.
(Jensen & Meckling, 1976)	Theory of the firm: Managerial behavior, agency costs and ownership structure	This paper integrates elements from the theory of agency, the theory of property rights and the theory of finance to develop a theory of the ownership structure of the firm.
(Demski & Feltham, 1978)	Economic incentives in budgetary control systems	This article explored conventional questions of why and how budgets should be employed for motivation purposes in an economic setting. The authors suggested that market incompleteness is a necessary condition for use of budgets in the employment contract.
(Harris & Raviv, 1979)	Optimal incentive contracts with imperfect information	The purpose of this paper is to develop a theory of contracts in situations characterized by a divergence of incentives between the two parties and asymmetric information (i.e., moral hazard) with special emphasis on how the possibilities for acquiring information affect the structure of the contract.
(Fama, 1980)	Agency problems and the theory of the firm	This paper attempted to explain how the separation of security ownership and control, typical of large corporations, can be an efficient form of economic organization. This article stated that individual participants in the firm, and in particular its managers, face both the discipline and opportunities provided by the

		markets for their services, both within and outside the firm.
(Jensen, 1983)	Organization theory and methodology	This article analyzed two literature theories, theory of organizations and theory of accounting, to explain why organizations take the form they do, why they behave as they do, and why accounting practices take the form they do.
(Eisenhardt, 1989)	Agency theory: An assessment and review.	This paper reviews agency theory, its contributions to organization theory, and the extant empirical work and develops testable propositions.
(van Osnabrugge, 2000)	A comparison of business angel and venture capitalist investment procedures: An agency theory-based analysis.	Utilizing data from 40 personal interviews and 262 questionnaire responses, this paper provides a detailed comparison of the investment criteria and procedures of business angels (BAs) and venture capitalists (VCs) across the full investment process.
(Arthurs & Busenitz, 2003)	The boundaries and limitations of agency theory and stewardship theory in the venture capitalist/entrepreneur relationship	This article examined the limitations of agency theory and then stewardship theory in explaining the behaviors of individuals in the VC-E relationship.
(Kelly & Hay, 2003)	Business angel contracts: the influence of context	This article examined the influence that various attributes of the contracting parties and of the deal itself can have on the form of the contract adopted between business angels and entrepreneurs relying on agency theory for guidance
(Randøy et al., 2003)	Family firms and good corporate governance: Altruism and agency considerations	This article used agency theory and the theory of altruism considerations to develop testable propositions in order to argue that both economic incentives and positive altruism drive the behavior of descendant Chairs.
(Mason & Stark, 2004)	What do investors look for in a business plan?: A comparison of the investment criteria of bankers, venture capitalists and business angels	This paper discussed the emphasis of bankers, business angels and venture capitalists when analyze a business plan as a first step in deciding whether or not to invest.
(Bitler & Moskowitz, 2005)	Testing agency theory with entrepreneur effort and wealth	The authors developed a principal-agent model in an entrepreneurial setting and test the model's predictions using data on entrepreneurial effort and wealth in privately held firm.
(Ley & Weaven, 2011)	Exploring agency dynamics of crowdfunding in start-up capital financing	This article provides an initial investigation into crowdfunding identifying how it may be appropriately adopted within the start-up equity financing context with data drawn from interviews to 11 venture capitalists.

3. THE ROLE OF EXPERTISE AND RISK DIVERSIFICATION STRATEGIES IN EQUITY CROWDFUNDING

3.1. INTRODUCTION

E-finance has been defined as “the provision of financial services and markets using electronic communications and computation” (Franklin, James & Philip, 2002, p. 5). As such, it is not a new concept, since, e.g., the electronic communication system through Fedwire began in 1918, and the NASDAQ market, involving the electronic trading of stocks, started in 1971. The only difference with what is happening today is the widespread use of information and communication technologies owing to the cheap accessibility provided to its users, whether individuals or organizations. This development leads the e-finance concept to a new and creative source of funding that has become increasingly available for entrepreneurs looking to finance their ventures: the equity crowdfunding. As a concept, the crowdfunding phenomenon is quite new but has developed and spread significantly in the past years. This is for instance evident in the fact that the United States government passed in 2012 the JOBS Act (Stemler, 2013), in order to regulate this completely new market for fund raising.

The Internet has made it possible to create a much easier access to traditional financial services such as mortgage processing, credit card payments or checking and saving accounts. It has also boosted online investing opportunities like the ones offered by the equity crowdfunding platforms. Online investing has significantly impacted the investor's decision-making process by providing instant access to a large amount of financial information, lower transaction costs, and quick order execution (Volpe et al., 2002). Even though the benefits brought by the Internet in online investing, there are also some disadvantages, including the increase in the numbers of corporate fraud and accounting misinformation cases (Neisius & Clayton, 2014). Researchers suggest that only informed decisions based on a solid understanding of investment concepts and tools will offer investors a better chance of success (Volpe et al., 2002).

Many researchers have investigated the crowdfunding phenomenon since the pioneer work of Howe in 2006, providing new insights into this research field and elaborating different views in theory and practice (Gierczank, Bretschneider, Hass, Blohm, & Leimeister, 2015). Equity crowdfunding is possible because entrepreneurs can collect the needed investment from a large group of investors, each of them providing a small contribution. Parallel to this entrepreneur-investor process, the crowdfunding scheme can become real just because the crowdfunding platforms act as intermediaries between entrepreneurs or companies and potential investors.

Accordingly, Belleflamme, Lambert, & Schwienbacher (2014) divided the crowdfunding stakeholders in three groups: entrepreneurs seeking funding for their projects, investors willing to invest in a specific project, and the matchmaking crowdfunding platforms acting as intermediaries between entrepreneurs and investors.

Entrepreneurs are usually both private persons (Gerber et al., 2012; Verstein, 2011) and organizations (Belleflamme et al., 2014; Bradford, 2012; Schwienbacher & Larralde, 2010). The adoption of the JOBS Act in the United States and the regulation at European and intra-European national level set out the guidelines not only for the private individual investors but also the organizational type (Hooghiemstra & de Buysere, 2015; Mollick, 2014), including business angels or venture capitals.

Recently, many “new” equity crowdfunding platforms allow entrepreneurs to raise money from whom Gierczank et al. (2015) called “an undefined group of online users”. This present study surveyed equity crowdfunding investors in order to find out whether some common characteristics can be extracted in order to further define this “undefined group of online users”. A set of hypotheses predicting the characteristics of equity crowdfunding investors is developed. These hypotheses can be classified according to the equity crowdfunding investor experience or risk diversification by drawing, respectively, upon the frameworks of personal investment literacy (Chen & Volpe, 1998; Volpe et al., 1996, 2002) and household portfolios (Guiso, Haliassos, & Japelli, 2002).

The paper is structured as follows. We first introduce the two bodies of literature to which this study contributes: personal investment literacy and household portfolio. We then lay out our hypotheses. This is followed by the method section and empirical analyses. Finally, we discuss our findings and conclude.

3.2. LITERATURE REVIEW

Literature has widely studied the main profiles of “professional” investors making investment financial decisions, either considering business angels or venture capital. Previous research has shown that angel investors are mostly successful entrepreneurs providing valuable assistance to young firms in their community (Morrissette, 2007). It is also well known that venture capital firms are typically organized as independent private partnerships, run by a relatively small number of general partners. While some of these partners previously worked in financial institutions, many have prior business experience (Bottazzi, Da Rin, & Hellmann, 2008). Business angels’

and venture capital's investors are involved in investment processes for both financial return and the challenge to support new venture process (Metrick & Yasuda, 2016).

Investors' characteristics have been researched extensively in different countries including the United States (Aram, 1989; Freear et al., 1994; Sørensen, 2007), the United Kingdom (van Osnabrugge, 2000), Sweden (Avdeitchikova, 2008), Canada (Black & Gilson, 1998; D. J. Cumming & MacIntosh, 2006; Duxbury et al., 1996), Finland (Lumme et al., 1996), Japan (Tashiro, 1999), Australia (Hindle & Wenban, 1999), Norway (Reitan & Sørheim, 2000) and Singapore (Hindle & Lee, 2002). These studies have also frequently profiled a typical angel and venture capital investor as a high-worth middle-aged male with entrepreneurial experience.

When considering "non-professional" investors, however, two different and complementary approaches may be of interest. On the one hand, the personal investment literacy framework (Volpe et al., 1996), focusing on individuals facing important decisions that will impact their (future) economic wealth. Such decisions include accumulating funds for a down payment for a house or an automobile, a child's education, personal goals and dreams, and retirement. Research conducted in the past 40 years indicates that such investors have inadequate knowledge about personal finance because this group does not have a personal finance education, knowledge or experience (Remund, 2010). Some authors suggest that providing people with the training to improve their knowledge in personal finance is an urgent issue in some areas of the society and getting the expertise can help reduce the cases of fraud and accounting misinformation in online investing (Chen & Volpe, 1998), particularly in a new phenomenon as equity crowdfunding. The personal financial literacy framework should provide a good basis for explaining the determinants of the investor's experience in equity crowdfunding.

On the other hand, the household portfolios framework (Guiso, Haliassos, & Japelli, 2002) attempts to explain the determinants of the demand of risky assets by the household portfolios investors (Maula et al., 2005). It is pertinent to our research because an investment in a new start-up can be considered as a risky asset (Maula, Autio, & Arenius, 2005). In fact, the majority of investments in equity crowdfunding occur in new start-ups, according to Harrison (2013), Kuppuswamy & Bayus (2013), Ahlers, Cumming, Günther, & Schweizer (2015), Belleflamme et al. (2014) or Mollick (2014). Some of the predictors from the household portfolio framework that were validated by empirical research are age, financial wealth and income, education, attitude towards risk, experience in previous investment, stock market participation and allocation among different type of assets (Guiso, Haliassos, & Japelli, 2003, 2002; Perraudin & Sørensen, 2000; Poterba & Samwick, 2003). The household portfolio framework should therefore provide a good basis for explaining the determinants of risk diversification in equity crowdfunding.

The following subsections discuss some characteristics that have been previously studied and considered relevant, according to at least one of the above-mentioned frameworks, of private equity crowdfunding investors. Alongside, we shall state our main hypotheses.

3.2.1. Types of investor

Prior research suggested that there are considerable differences among different types of investors, particularly in the business angel and venture capital ecosystems. Differences could arise regarding the use of qualifications and experience, or information, channels and networks (Sørheim & Landström, 2000). According to Landström (1992), there are certain groups of investors who are able to identify investment proposals because they have lower search costs than other groups that lack the experience or network to identify these opportunities. Even though an investment proposal has been identified, investors still have to assess it, having to deal with both market and agency risk (Fiet, 1991). Investors can use previous experience in other companies or industries in order to reduce the market risk (Sørheim & Landström, 2000). In order to handle the agency risk, literature review suggests that investors should: (a) make fewer investments, and (b) increase the entry barriers to other potential investors (Landström, 1992).

In the equity crowdfunding scheme, access to investment proposals is open to any investor who is registered on the crowdfunding platform. Such investors could be associated to a business angel or a venture capital fund, but could also be small and private investors. Research on equity crowdfunding investor categorization has been lightly reviewed by Cholakova & Clarysse (2015), Gierczank et al. (2015), Ordanini, Miceli, Pizzetti, & Parasuraman (2011).

Literature on equity crowdfunding suggests that there are some differences in the investors' strategies in the equity crowdfunding ecosystem compared to the strategies of business angels and venture capitalists. According to Ahlers et al. (2015) and Malmendier & Shanthikumar (2007) entrepreneurs usually signal small investors, i.e., those that: (a) invest relatively small amounts of money, and (b) receive a relatively small stake of a company in return. These small investors are likely to lack the financial sophistication and experience of venture capitalists, who are usually knowledgeable about valuing start-ups and assessing founding teams (Freear et al., 1994). Furthermore, the costs for angel investors and venture capitalists of evaluating ideas and teams are fairly small, but they would be prohibitively high for small investors who lack the sophistication, knowledge and experience (Ahlers et al., 2015). Therefore, it is predicted:

Hypothesis 1: Equity crowdfunding investors exhibit different investment strategies, which can be classified using a limited number of dimensions reflecting their prior expertise and level of risk diversification.

3.2.2. Gender

Prior research examining the characteristics of investors has found that business angel and venture capital is a male dominated activity (Maula et al., 2005). In the United Kingdom, Harrison & Mason (1992) found that 99 % of these investors were men. This figure is very similar to the one reported in Australia (Hindle & Wenban, 1999). In other countries, the share of men among business angel and venture capital investors has been found to be as high as 97% in Norway (Reitan & Sørheim, 2000) and Japan (Tashiro, 1999) and 90% in Singapore (Hindle & Lee, 2002). However, when focusing on more broadly defined investors the shares of women investors have been found to reach 30.1% in 29 nations of Global Entrepreneurship Monitor countries, 34.1% in the United States, 32.2% in the United Kingdom, and 24.1% in Germany (Maula et al., 2005). Female investors are nonetheless still greatly under-represented when compared against the prevalence of women in the base population (Bygrave, Hay, Ng, & Reynolds, 2003). Previous research in reward-based and equity crowdfunding has found that 26% of the investors were female (Cholakova & Clarysse, 2015).

Goffee & Scase (1983) and Harrison & Mason (2007) identified three differences between men and women that can affect their investment performance and decision making: (a) women usually have lower stock of both human and financial capital, as a result of occupational segregation in the labor market, (b) women have lower levels of meaningful business experience because women mainly socialize into the caring/nurturing role and not in the business environment, and (c) women have different intentions when investing in a business, in response to labor market or domestic subordination, for work–family balance or as a feminist move. Because of these differences, men have more opportunities to accumulate additional business knowledge and experience than women. In that sense, male investors would have less difficulties in managing their finances than most women (Volpe et al., 2002) and perform better on expected returns than female investors (Bosma, Van Praag, Thurik, & De Wit, 2004). This statement is supported by Barber and Terrance (2001) who found a lesser proportion of women reporting to have good or extensive investment experience, compared to men reporting the same level of experience. Furthermore, some researchers investigating the allocation of portfolio assets have found that gender is significantly related to asset allocation (Finucane, Slovic, Mertz, Flynn, & Satterfield, 2000; Jianakoplos & Bernasek, 1998; Sundén & Surette, 1998); and that women's portfolios are less riskier than men's (Charness & Gneezy, 2012). Therefore, it is predicted:

Hypothesis 2:

H2.a. There is a positive relationship between gender and equity crowdfunding experience, with more male investors using their prior investment expertise.

H2.b. There is a negative relationship between gender and equity crowdfunding risk diversification strategies, with less male investors prioritizing risk diversification strategies.

3.2.3. Age

According to the personal investment literacy older investors are more knowledgeable about investing than younger investors (Chen & Volpe, 1998; Volpe et al., 1996, 2002). Furthermore, the household portfolios framework suggests that very young and very old individuals should have less tendency to invest in start-up companies, and to contribute to the success of such companies (Guiso, Haliassos, & Japelli, 2002; Maula et al., 2005). This expectation is corroborated by findings reported in research on household portfolios, where a curvilinear (inverted-U shaped) relationship has been predicted and empirically demonstrated between age and ownership of risky assets (Guiso et al., 2003; Guiso, Haliassos, & Jappelli, 2002). In line with these predictions, prior research on business angels has found that a typical business angel investor is middle-aged (Freear et al., 1994). The average age of business angels or venture capital investors has been ranged from 40 (median) in Australia (Hindle & Wenban, 1999), 42 or 47 in the United States (Freear et al., 1994), 47 in Norway (Reitan & Sørheim, 2000), 53 in the United Kingdom (Harrison & Mason, 1992), 54 in Sweden (Landström, 1993) to 60 in Japan (Tashiro, 1999). In Finland, Lumme et al. (1996), found that 67% of the investors were between 40 and 60. Therefore, we state that:

Hypothesis 3:

H3.a. There is a positive relationship between the investor's age and the investor's equity crowdfunding experience.

H3.b. There is a curvilinear (inverted-U shaped) relationship between the investor's age and his/her equity crowdfunding risk diversification strategy.

3.2.4. Education

The personal investment literacy framework states that participants with more education usually have greater knowledge or experience in investing than those with less education (Volpe et al., 2002). A household portfolio literature review predicts a positive association between the level of education and investment in risky assets such as stocks (Guiso et al., 2003). Prior descriptive studies on the characteristics of business angels and venture capital investors are in line with these frameworks (Maula et al., 2005). Freear et al. (1994) and Mason & Harrison (2000) state that a typical investor is well educated. Other studies have found that in the United States 82% had at

least undergraduate degree (Aram, 1989), in Canada 30% had a university degree and 39% had a post-graduate degree (D. J. Cumming & MacIntosh, 2006), in the United Kingdom 74% had a university degree (Maula et al., 2005), and in Finland 56% had a master degree and 8% had a doctoral degree (Lumme et al., 1996). Therefore, we similarly expect:

Hypothesis 4:

H4.a. There is a positive relationship between the investor's level of education and his/her investor's equity crowdfunding experience.

H4.b. There is a negative relationship between the investor's level of education and his/her equity crowdfunding risk diversification strategy.

3.2.5. Household income

According to the personal investment literacy research, participants with higher annual income showed more knowledge than those with a lower income (Volpe et al., 2002). In the same line, according to the household portfolio literature, some of the most important determinants of investments in risky assets are financial wealth and income (Gollier, 2002; Guiso et al., 2003; Guiso, Haliassos, & Japelli, 2002). A high level of income allows the investor to spread his/her assets more widely across more companies, and therefore, include vehicle investments such as equity crowdfunding in her portfolio. At smaller levels of income, the downside risk associated with risky investments becomes prohibitive (Maula et al., 2005), thus reducing the investment vehicles, and likely exclude equity crowdfunding. In line with these arguments, prior research on the characteristics of similar investments has found that a business angel or venture capital investor typically have a high net worth and income level (Freear et al., 1994; Harrison & Mason, 1992; Mason & Harrison, 2000). Therefore, it is predicted:

Hypothesis 5:

H5.a. There should be a positive relationship between the investor's wealth and income and his/her equity crowdfunding experience.

H5.b. There should be a negative relationship between the investor's level of income and his/her equity crowdfunding risk diversification strategy.

3.2.6. Working status

Employees at higher levels of working status tend to have better knowledge and expertise in investment decision-making (Volpe et al., 2002). Many organizations train their top executives in order to improve their productivity (Garman, Leech, & Grable, 1996) and knowledge. The literature on household portfolios argues that a secured income is associated with the propensity to make risky but more diversified investments (Gollier, 2002). Not only does a steady income

coming from a higher working status contribute to the household's general wealth, but it is also associated with a diversified portfolio. Furthermore, a steady source of income is associated to the investor's ability to sustain economic losses if the risk in some of the investments in the diversified portfolio materializes (Maula et al., 2005). Therefore, it is predicted:

Hypothesis 6:

H6.a. There should be a positive relationship between higher working status and the investor's equity crowdfunding experience.

H6.b. There should be a positive relationship between the investor's working status and his/her equity crowdfunding risk diversification strategy.

3.2.7. Investor profile

We expect that previous investment experience in equity crowdfunding should be positively related to the investor's previous expertise in other financial instruments. Previous financial investment experience should improve the individual's perception of his/her own ability to select good investment targets and to control these investments for an optimal outcome (Maula et al., 2005). This expectation is corroborated by prior research on business angels that has found that these investors typically have a background as investors in other start-ups (Freear et al., 1994; Mason & Harrison, 2000; Politis & Landström, 2002). Politis and Landström (2002) found that investors have commonly experienced three overall career phases: the corporate career phase; the entrepreneurial learning phase; and the integrated investment career phase. Literature of venture capital states that the share of investors being company-owners are 38% in Norway (Reitan & Sørheim, 2000), 48% in Japan (Tashiro, 1999), 49% in the United Kingdom (Harrison & Mason, 1992) to 69% in Sweden (Landström, 1993). In the same studies, the shares of investors having founding experience have been 46% in Norway, 67% in the United Kingdom, and 96% in Sweden. Potential or novel investors tend to view investing on a smaller scale and are more likely to seek diversification in entrepreneurial ventures than active investors (Freear et al., 1994). Erikson, Sørheim, & Reitan (2003) found that there could also be differences among business angel investors suggesting that family angels expose themselves to a higher firm-specific risk which represents that the family angels are less diversified in the quantity of ventures invested than other informal investors.

We expect previous investment experience to be a particularly important determinant of the investor expertise and risk diversification in equity crowdfunding. Therefore, it is predicted:

Hypothesis 7:

H7.a. There should be a positive relationship between the type of investor and the investor's equity crowdfunding experience.

H7.b. There should be a negative relationship between the type of investor and his/her equity crowdfunding risk diversification strategy.

3.3. METHODOLOGY

3.3.1. Survey and data collection

Previous research showed that it was difficult to identify investors (Harrison & Mason, 1992; Landström, 1993; Wetzel, 1983) and that investors tend to be reluctant to participate in a study because they prefer to remain anonymous (Erikson et al., 2003). Harrison & Mason (1992) described three methods of identifying investors: (a) sending questionnaires to a large number of individuals assumed to have made investments, (b) contacting the investors through the companies in which they have made investments, and (c) using the so-called "snowball method" to identify investors. Our approach used a combination of the two first ones, contacting individuals assumed to be investors through four different forum groups on LinkedIn related to equity crowdfunding. A post with the objectives of the study with a link to the survey was created for each group in LinkedIn. After identifying willing investors, an InMail was sent with a link to the questionnaire.

The survey was conducted through online survey, using cloud-based software. This approach allowed us to reach investors from different geographical regions, thus targeting a much wider collectivity. Indeed, the sample of investors used in this research was gathered across three countries: Germany, Netherlands and Spain. We obtained 242 valid answers, having disregarded all incomplete survey responses. Taking into account that the participants of the four focus groups summed up 45,012 members, the number of answers constitutes a statistically significant sample, with a confidence of 90%, maximum indetermination $p=q=0.5$, and error margin of 6%.

3.3.2. Variables related to the investor's demographics

In this study, we used gender, age, education, working status, income, and type of investor in equity crowdfunding as independent variables to study the differences in investment knowledge and risk diversification among the investors. The following Table 3.1 summarizes the definition of the variables and how they have been constructed.

Table 3.1 Variables related to the investor’s demographic profile

Variable	Description
Gender – GEN	Dummy variable taking value 1 for male investors, and 0 for female investors.
Age – AGE	Age of the respondent at the time he/she answered the survey It was obtained from the online survey, asking for the investors’ <i>Year of birth</i>
Education – EDU	Qualitative variable, categorized 1 for trade-technical or vocational education, 2 for formal university education, and 3 for post-graduate education. Data obtained from the online survey, asking: <i>What is the highest degree or level of school you have completed?</i>
Country of Residence – RES	Qualitative variable, categorized DE for Germany, NL for Netherlands and ES for Spain. Data obtained from the online survey, asking: <i>Country of residence</i>
Household income – HOUINC	Qualitative variable, categorized 1 for income less than €30.000, 2 for income between €30.001 and €50.000, 3 for income between €50.001 and €100.000, and 4 for income of more than €100.000. Data obtained from the online survey through the question: <i>What is your total household income?</i>
Work status – WRKSTA	Qualitative variable categorized 1 for intern or entry level at the organization, 2 for analyst or associates, 3 for manager positions, and 4 for owners or shareholders. Data obtained from the online survey, asking for: <i>Which of the following most closely matches your job title?</i>
Investor profile – INVPROF	Qualitative variable categorized 1 for everyday investor, 2 for sophisticated investor, and 3 for high net worth investor. Obtained from the online survey, asking: <i>Which profile describes you best?</i>

For the purpose of this study, investor profiles have been categorized using the following definitions:

1. *Everyday Investor* not having invested (and will not invest) more than 10% of his/her net assets per year in shares, bonds, fund or other securities that are not listed on a stock exchange. The Financial Conduct Authority in the United Kingdom refers to 'Everyday Investors' as 'Restricted Investors'.
2. *Sophisticated Investor*, when one of the following holds: has invested in more than one unlisted company; is a director of a company with an annual turnover of at least €1 million; has worked in private equity in the last two years; or has been a member of a business angel’s network for at least the last six months.
3. *High Net worth Investor*: earning more than €100,000 per year, or holding net assets of at least €250,000.

3.3.3. Variables related to the investor experience

In order to obtain dependent variables for our study, we have considered a number of characteristics related to the respondents’ previous investment experience, gathered using the above mentioned study. We have taken into account both characteristics related to the investments made by our respondents using crowdfunding platforms (number of companies invested in; amount of money invested in each one) and related to their experience in other markets (stock market, bond market, private equity, ETF). The particulars of each of these variables can be found in Table 3.2.

Table 3.2 Variables related to investors' experience

Investor's experience	Description
Number of equity crowdfunding companies invested in – #COMINV	Qualitative variable categorized 1 for investment in one company; 2 for investments in between 2 and 5 companies, 3 for investments in more than five companies. Obtained from the online survey, asking: <i>In how many companies have you invested using a crowdfunding platform?</i>
Amount of money invested per campaign – #INVCAM	Qualitative variable categorized 1 for investments less than €500, 2 for investments between €500 and €1.000, 3 for investments between €1.001 and €5.000, and 4 for investments of more than €5.000. Obtained from the online survey, asking: <i>What is the average amount of money invested per company using a crowdfunding platform?</i>
Experience in stock market – STOCKMARK	Dummy variable taking value 1 if the investor has allocated money in shares at companies listed on the stock exchange; 0 otherwise. Obtained from the online survey, asking: <i>Before investing in equity crowdfunding, did you invest in company shares listed at any stock exchange?</i>
Experience in bond market – BONDMARK	Dummy variable taking value 1 if the investor has allocated money in bonds or any other fixed income financial instruments; 0 otherwise. Obtained from the online survey, asking: <i>Before investing in equity crowdfunding, did you invest in bonds or other fixed income financial instruments?</i>
Experience in private equity – PRIVEQU	Dummy variable taking value 1 if the investor has allocated money in private equity or non-stock exchange listed company; 0 otherwise. Obtained from the online survey, asking: <i>Before investing in equity crowdfunding, did you invest in private equity or non-stock exchange listed company?</i>
Experience in ETF – ETFDER	Dummy variable taking value 1 if the investor has allocated money in derivatives, forwards contracts, futures, swaps, options and/or others financial instruments of the same type and risk ; 0 otherwise. Obtained from the online survey, asking: <i>Before investing in equity crowdfunding, did you invest in ETF derivatives: Forwards contracts, futures, swaps, options and/or others?</i>

Furthermore, both Pearson's chi-square test and Fisher's exact test were used in order to study the homogeneity of the sample within the three different countries of residence of the respondents, taking into account all other variables used in the study. The results are displayed in Table 3.3. The large p-values throughout the table show that the null hypothesis can be accepted, and therefore respondents in the three different countries exhibit similar trends. This result allows us to consider our sample as homogenous for the purpose of our study.

Table 3.3 Sample homogeneity

Variable	Chi-square p-value	F – exact test p-value
GEN	.139	.130
EDU	.220 (a)	.195
HOUINC	.848 (a)	.833
WRKSTA	.452 (a)	.457
INVPROF	.888	.907
#COMINV	.673 (b)	.749
#INVCAM	.232 (b)	.254
STOMARK	.290	.294
BONMARK	.077	.082
PRIVEQU	.812	.854
ETCDER	.746	.788

(a) 1 group with less than 5 observations (b) 2 groups with less than 5 observations

3.3.4. Analytical method

The starting point of our analysis is the use of a Principal Component Analysis (PCA) to reduce the dimension of the number of dependent variables initially considered (Jolliffe, 2002; Wold, Esbensen, & Geladi, 1987). Prior to that, we shall run several standard tests to ensure the suitability of the approach. The resultant components should represent the different equity crowdfunding investment strategies primary followed by investors, according to our first hypothesis.

We subsequently use multivariate regression analysis to test the remaining hypotheses. The objective is to find relationships between our independent variables (gender, age, education, household income, work status and type of investor) and the obtained investment strategies, represented by the equations:

$$\mu_i = \alpha_i + \sum_j \beta_{ij}c_j + \gamma_i a + \delta_i a^2 \quad \forall i$$

where

$\alpha, \beta_j, \gamma, \delta$ refer to the regression coefficients for each equation

c stands for the characteristics of the demographics qualitative variables

a represents age (the quadratic term is included taking into account H3b)

μ_i denotes each one of the equity crowdfunding primary investment strategy

3.4. RESULTS AND DISCUSSION

3.4.1. Sample description

Table 3.4 provides the demographical characteristics of the sample. According to our results, a typical investor in equity crowdfunding is male, aged between 36 and 45, holds a University degree, his household income amounts under €30,000, and works in a managerial position. Furthermore, he is neither a sophisticated investor nor high net worth investor.

Table 3.5 provides a description of the investor's experience in the equity crowdfunding ecosystem and other financial instruments. According to our results, the majority of the investors have invested in only one company; typically they invest between €500 and €1,000 and have limited experience in other financial instruments such as stocks of public companies, fixed income securities, stocks in private equity or derivatives.

Table 3.4 Survey description investors' demographic variables

Variable	Participants	%	Variable	Participants	%
Observations	242				
Gender			Household income		
Female	39	16%	under €30,000	111	46%
Male	203	84%	€30,001 and €50,000	69	29%
			€50,001 and €100,000	35	14%
Age			€100,000 or more	27	11%
18-25	23	10%	Working status		
26-35	75	31%	Entry level	34	14%
36-45	78	32%	Analyst/Associate	77	32%
46-55	64	26%	Manager	100	41%
56-65+	2	1%	Owner/Shareholders	31	13%
Education		0%	Investor profile		
	28	12%	Everyday investor	158	65%
Trade/technical/vocational			Sophisticated investor	38	16%
Bachelor's degree	117	48%	High net worth investor	46	19%
Post -graduate degree	97	40%			

Table 3.5 Survey description investor's experience variables

Variable	Participants	%	Variable	Participants	%
Observations	242				
Number of equity crowdfunding companies invested			Experience in bond market		
1 company	138	57%	Yes	75	31%
2 to 5 companies	94	39%	No	167	69%
more than 5 companies	10	4%			
Amount of money invested per campaign			Experience in private equity		
under €500	75	31%	Yes	54	22%
€501 and €1,000	110	45%	No	188	78%
€1,001 and €5,000	39	16%			
more than €5,001	18	7%	Experience in ETF		
Experience in stock market			Yes	46	19%
Yes	97	40%	No	196	81%
No	145	60%			

3.4.2. Principal component analysis

As outlined in the previous section, we have used a Principal Component Analysis to reduce the dimension of the number of variables describing the investors' experience, both in crowdfunding and in other markets. To ensure the suitability of the approach, we have first used the KMO test, obtaining a median level of 0.7. Furthermore, the Bartlett's sphericity test, significant at p-value

< 0.000, also shows that the PCA is well suited and can be used to reduce dimensions and variables in the model (see Table 3.6).

Table 3.6 KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	239.656
	Df	15
	Sig.	.000

Using parallel analysis we found that, for our data, a total of two components were optimal for our analysis. The scree plot of Figure 3.1, with only two eigenvalues above 1, also visually assesses the choice.

Figure 3.1 PCA eigenvalues

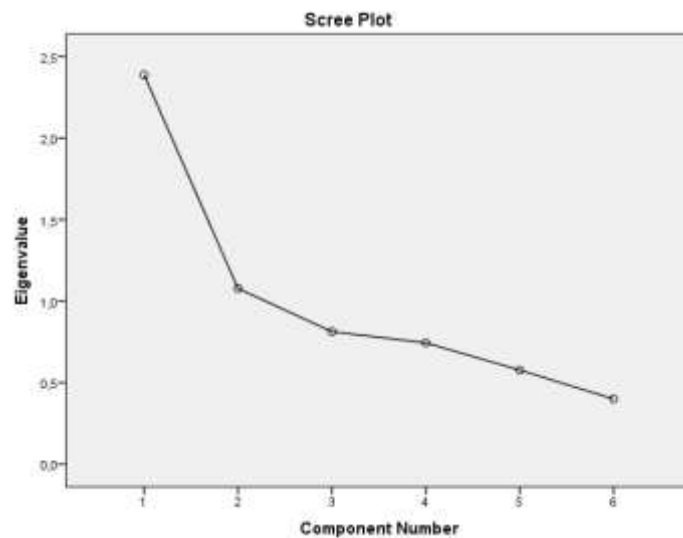


Table 3.7 presents the loading values obtained for each variable in each of the two components considered. Only loading values of more than 0.25 have been displayed, to enhance the significance of the components. The first component, with the highest explanatory value, consists of investors that allocate comparatively larger quantities in equity crowdfunding and also invest in all other financial instruments considered in the survey (stocks in publicly listed companies, bonds or fixed income investments, private equity in non-listed companies and derivatives). Therefore we have termed the component *Expertise*, since it represents the investors with relatively more expertise in investment, both in the equity crowdfunding ecosystem and elsewhere.

The second component consists of investors that consider investments in more than one project using equity crowdfunding but in smaller quantities. Although these investors also show some previous experience in investing in the stock market, we have termed this factor *Risk*

Diversification, because they use the investor’s equity risk diversification strategy in the equity crowdfunding ecosystem, investing in a number of different projects, thus reducing risk in their portfolio of stocks and allocating smaller sums of money to each project.

Table 3.7 Factors for the investors’ experience

	Expertise (<i>EXPERT</i>)	Risk Diversification (<i>RSKAVR</i>)
Number of equity crowdfunding companies invested in		.905
Amount of money invested per campaign	.599	-.289
Experience in stock market	.660	.320
Experience in bond market	.745	
Experience in private equity	.633	
Experience in ETF	.774	
% of Cumulative Variance explained	39.804	57.766

Our hypothesis 1 predicted that there should be different strategies considered among equity crowdfunding investors. Results indeed show that our hypothesis holds, and allow us to identify two different kinds of strategies: (a) the expertise strategy followed by investors with prior experience in investment in different financial instruments; and (b) the equity risk diversification strategy.

3.4.3. Regression analysis

Table 3.8 provides the results for the two multivariate regressions undertaken. Model 1 considers expertise of the investors as a dependent variable, whereas Model 2 takes into account the risk averse investors. In both cases, the same independent variables are considered (gender, age, education, household income, working status, investor profile).

Table 3.8 Regression analysis

Model	Model 1		Model 2	
	B	Sig.	B	Sig.
(Constant)	.409	.707	-2,777	.015
GEN	-.064	.688	.331	.046**
AGE	-.087	.129	.078	.194
AGE ²	.001	.187	-.001	.201
EDU	.026	.785	.295	.003***
HOUINC	.174	.022**	-.008	.923
WRKSTA	.364	.000***	.317	.000***
INVPROF	.097	.305	-.269	.007***
R ²	.479		.396	
Dependent variable	EXPERT		RSKAVR	

We can use the resultant regression coefficients and statistical significance to discuss hypothesis 2 to 7 stated above. A summary of the derived results, including H1, can be seen in Table 3.9.

Concerning the investors’ gender, H2a predicted a positive relationship between gender and investor’s expertise. The hypothesis is though not supported by our results since there seems to be no significant relationship between gender and the use of the expertise strategy. Turning to H2b, we predicted a relationship between gender and the use of the equity crowdfunding risk diversification strategy. In this case, H2b is partially supported, since the relation indeed is statistically significant. However, its sign is reversed, with more male investors significantly using this strategy, contrary to the stated hypothesis.

A statistically significant relationship between the investors’ age and the use of the two dominant investors’ strategies was proposed in Hypothesis 3. Following our results, however, neither H3a nor H3b are supported, due to the lack of significance of the regression coefficients in both regressions.

The proposed relationship with other two demographic characteristics of the equity crowdfunding investors in our sample are found to be partially supported. Concerning the investors’ level of education, there is indeed a statistically significant relationship found between the investors’ level of education and his/her use of the equity crowdfunding risk diversification strategy. However, the relationship is found to be positive, with more educated investors making increasingly use of this strategy, and therefore the sign of the relationship is reversed with respect to what was predicted in H4b. The first part of this hypothesis, concerning the relationship between the investors’ level of education and his/her use of the prior expertise strategy is not confirmed. Concerning the investors’ wealth and income, the results are also partial: H5a, predicting a

positive relationship with the investor’s use of his/her prior expertise, is confirmed, with the corresponding regression coefficient being positive and statistically significant; whereas H5b, stating a similar but negative relationship with the investors’ use of the equity crowdfunding risk diversification strategy, is not supported, because the corresponding coefficient, although having indeed a negative sign, is not statistically significant.

Hypothesis 6, stating a positive relationship between the investors’ working status and both the equity crowdfunding prior experience (H6a) and the risk diversification strategy (H6b), is totally supported by our results, since in both cases the found regression coefficients are positive and statistically significant.

Finally, we find Hypothesis 7 also partially supported. It predicted a positive relationship between the type of investor and the investor’s equity crowdfunding prior experience strategy, with more sophisticated investors making increasingly use of such strategy. From our results, the relationship seems to be positive but not statistically significant. Hypothesis 7b predicted a negative relationship between the type of investor and his/her equity crowdfunding risk diversification strategy, and indeed the obtained coefficient is negative and statistically significant.

Table 3.9 Summary of hypotheses and results

H1. Equity crowdfunding investors exhibit investment strategies reflecting their prior expertise and level of risk diversification	Supported
H2. Relationship between gender and dominant investment strategies: a. Male investors make significant use of their prior investment expertise b. Female investors will prioritize risk diversification strategies	<i>Non supported</i> <i>Part. supported (male inv.)</i>
H3. Relationship between age and dominant investment strategies: a. Positive relationship between age and investors’ prior investment expertise b. Curvilinear (inverted-U shaped) relationship between investor’s age and his/her equity crowdfunding risk diversification strategy	<i>Non supported</i>
H4. Relationship between education and dominant investment strategies: a. Positive relationship with the use of their prior investment expertise. b. Negative relationship with his/her risk diversification strategy.	<i>Non supported</i> <i>Part. supported (positive rel.)</i>
H5. Relationship between the investor’s wealth and income and dominant investment strategies: a. Positive relationship with his/her prior investment expertise. b. Negative relationship with his/her risk diversification strategy.	Supported <i>Non supported</i>
H6. Relationship between working status and dominant investment strategies: a. Positive relationship with the investor’s prior investment expertise. b. Positive with his/her equity crowdfunding risk diversification strategy.	Supported
H7. Relationship between the type of investor and dominant investment strategies: a. Positive relationship with his/her prior investment expertise. b. Negative relationship with his/her risk diversification strategy.	<i>Non supported</i> Supported

3.5. DISCUSSION AND CONCLUSIONS

In this paper, we set out to examine the factors explaining the investor’s expertise and risk diversification strategies in the equity crowdfunding ecosystem. Building on the frameworks of personal investment literacy and household portfolio literature, we developed hypotheses

concerning the factors influencing the investor's expertise and risk diversification strategy in equity crowdfunding. The hypotheses were tested using data collected from 242 equity crowdfunding investors. Proxies-dependent variables were calculated for the investor's expertise and risk diversification strategy in equity crowdfunding using principal component analysis, and multivariate regressions were used to test the hypothesis.

In contrast to what prior empirical research suggest, including in the personal investment literacy literature and in the economic literature of household portfolios, demographic factors such as gender, age or level of formal education were not highlighted as statistical significant in our empirical analysis in explaining the investor's expertise in equity crowdfunding. Conversely, household income and working status were found to be key determinants of this strategy in equity crowdfunding. It seems that learned skills and solid financial wealth matter more than demographics in explaining the investor's expertise in picking stocks in equity crowdfunding.

Examining the determinants of the risk diversification strategy in equity crowdfunding, it was found that formal education, working status and the own assessed investor profile had statistical significance in explaining the relationship. According to our results, it is then expected that individuals with higher level of formal education, higher working status, but with lesser investment experience would diversify more and spread the risk when allocating money in early stage start-ups through equity crowdfunding projects. However, either age or the investor's level of wealth and income would not be good predictors of the risk diversification strategy.

In the search for possible further tentative explanations of the differences in the results found by this research compared to other previous research both in personal investment literacy and household portfolio literatures, we discuss in the next paragraphs those differences.

It was found that 65% of the respondents of our sample were everyday investors. These results are in line with Hooghiemstra & de Buysere (2015), which argue that most investors involved in crowdfunding are unsophisticated. In order to protect investors regarding limited information, voting and exit rights, regulators in diverse European countries have introduced restrictions on the offering or on the companies making the offerings in order to minimize possible investor's losses. Specific legal measures to protect investors in equity crowdfunding, however, vary from country to country. In Finland, France and Germany they rely primarily on investor disclosure; Spain relies on a combination of self-certification and a maximum cap per project/participation (Pope, 2011); while Italy and the United Kingdom rely solely upon the self-certification of investors (Hooghiemstra & de Buysere, 2015).

Many inexperienced investors seek advice and help from their bank account managers or broker dealers when they set out to pick company stocks (Abreu & Mendes, 2010). However, similar characters do not exist in the equity crowdfunding ecosystem. Not only younger investors but also the ones at the lower tier in education have to deal with the excessive amount of information on the Web, which creates a lot of difficulties for them in understanding and using all the information (Brynjolfsson & Smith, 2000). Doing what others do could be an efficient and rational way to make decisions in this circumstance (E. Lee & Lee, 2012). Nowadays, it is also easy to observe others' choices on the Internet. The equity crowdfunding platforms allow the inexperienced and newcomer investor to take such strategies because they could believe that others are better informed than they are. This could explain why some demographic characteristics of the investors were found to be not significant for this study, whereas it were good predictors of investor's behavior in other contexts.

Researchers suggest that men have better accessibility to top management position, Graham, Harvey, & Puri (2013) and Huang & Kisgen (2013) reported that a large proportion of Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs) are men. Pini (2005) argued that until there is a conceptual shift away from maintaining the status quo to strategic equity management by the power holders, women will continue to be under-represented in management. According to French & Strachan (2009), organisations in the finance industry needed to consider different and proactive strategies for the development, promotion and transfer of women to ensure their movement into and ultimately their retention within management. Despite these differences in career opportunities to access a to top managerial positions, Harrison & Mason (2007) stated that there are no differences in the financial performance between women and men in the business angel industry. Eventhough Hervé, Manthé, Sannajust, & Schwienbacher (2016), in a research for equity and real estate crowdfunding, argued that decision-making in finance is mainly a masculine prerogative, women probably would acquire the same level of expertise and would also assess the risk diversification strategy in similar ways than men in the long term in the equity crowdfunding ecosystem.

Finally, Kim & Viswanathan (2014) found that expert investors in the crowdfunding markets are playing a disproportionate role in influencing the behavior of younger and early investors in these markets. Experience and mature investors taking decision for a venture capital or a business angel can influence the equity crowdfunding ecosystem when they invest in an equity crowdfunding project signaling the equity crowdfunding market the entrepreneur's project ability to attract subsequent capital. Janney & Folta (2006) stated that these private equity investors are trained and have the experience to moderate and understand this endorsement effect, however the crowd of anonymous participants does not have those capabilities because they are considered to be less

sophisticated paying too much attention to what they believe is information of quality. This argument can explain why the hypothesis regarding the type of investor and the investor's crowdfunding experience was not supported, many equity crowdfunding investors can be signaled by other more expert investors, like the ones representing business angel and/or venture capitalists, and follow a herding behavior.

4. DEVELOPING TRUST MEASURES IN EQUITY CROWDFUNDING: AN EXPLORATORY ANALYSIS

4.1. INTRODUCTION

Crowdfunding is defined by Schwienbacher & Larralde (2012, p. 4) as “an open call, essentially through the Internet, for the provision of financial resources, either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes”. Belleflamme, Lambert & Schwienbacher (2014, p.4) argue that “the concept of crowdfunding comes from a broader concept of crowdsourcing, which involves using the crowd to obtain ideas, feedback, and solutions to develop corporate activities”. According to Kleemann et al. (2008, p.6) “crowdsourcing is when a profit-oriented organization outsources specific tasks for making or selling its products to the general public in the form of an open call over the Internet”. Harrison (2013) suggests that crowdfunding represents the disintermediation of the finance market and the emergence of new institutional forms, since founder and funders are connected directly with the interaction of a crowdfunding platform.

Mollick (2014) argues, though, that the above definitions are incomplete, for there are two aspects not addressed in their formulation: the goal of the founders and the goal of the funders. Belleflamme et al. (2014) adds that crowdfunding differs from other methods of start-up funding because the relationship between founders and funders varies by context and nature of the funding effort. The goal of the founder could be, among others, to raise capital, to demonstrate the demand for a proposed product and to fulfill a marketing purpose.

Ahlers, Cumming, Günther & Schweizer (2015) present an initial empirical examination of the start-ups that will most likely induce small investors to fund them through equity crowdfunding. Using Australian data, they present evidence that successful initiatives rely on credible signals like financial roadmaps (such as preplanned IPO or acquisition exit strategies) and risk factors (such as amount of equity offered and whether financial forecasts are provided), as well as board experience, measured by education level (e.g., percentage with MBA degrees), and number of board members.

Kuppuswamy & Bayus (2013) examined two years of publicly available information on successfully and unsuccessfully funded projects listed on Kickstarter in the United States and show that funder’s support for a reward-based crowdfunding project is negatively related to its past funder support. Mollick (2014) developed an exploratory empirical research using the universe of projects on Kickstarter from its beginning in 2009 until July 2012 basing his research on both the donation and the reward-based models. In his research, he concluded that project

quality, geography, network and preparedness are important variables for the crowdfunding success.

Crowdfunding falls within the context of social networks and collaboration platforms where trust is an essential feature. However, this feature has barely been addressed within the context of equity crowdfunding (Bottazzi et al., 2016). Previous research shows that the dynamics of online cooperation has to do with social network size and trust (Ridings et al., 2002). Psychologist researchers (Mayer et al., 1995; McAllister, 1995; Rempel, Holmes, & Zanna, 1985) stated that in offline networks, one could open up to others because one feels more intimate during personal communication. Other researchers (van Eeten & Mueller, 2012; Weber, 2010) suggested that the Internet could enable self-governance and bring people with common interests together. However, over the last decade many signs have been given that the Internet is not more an open space where the people can meet freely but that is actually a place controlled by the government and companies (DeNardis, 2012). The Internet is also an excellent space for entrepreneurship (Batjargal, 2007) allowing entrepreneurs to have direct access to their customers or investors. Therefore, a new economy can be built upon online communication, in which trust among strangers is one of the key values (Belk, 2014).

Many economists intuitively recognize the importance of trust for economic transactions (Bottazzi et al., 2016). Arrow (1973) remarked that every commercial transaction has within itself an element of trust. For example, some authors have analyzed the role of trust under different economic perspectives: Knack & Keefer (1997) established a positive relationship between trust and economic growth; Guiso, Sapienza and Zingales (2009) studied the importance of trust for bilateral trade in goods, financial assets, and direct foreign investment; and Guiso, Sapienza, & Zingales (2008) used Dutch and Italian data to establish an effect of trust on stock market participation.

This paper began with the premise that trust is crucial to the investor in the decision making process to invest in entrepreneurial projects searching for financing through equity crowdfunding platforms. This study proposed and intended to validate measures for a multidimensional definition of trust with four interrelated trust constructs that comprised all together 12 literature-grounded sub-constructs. This study also shows that trust incorporates more than the personal dimension of psychology and organizational studies (Granovetter, 1985; Mayer et al., 1995; Rotter, 1967). Indeed, we have proven that collective trust (Welter & Smallbone, 2006) is an important dimension when trust is generated inside the equity crowdfunding community.

4.2. LITERATURE REVIEW

McAllister (1995, p.25) defines trust as “the extent to which a person is confident in, and willing to act on the basis of, the words, actions and decisions of another”. In that sense, the concept of trust involves risk mainly because the principal is exposed to opportunistic behavior when he places trust in the agent (Zand, 1972). This exposure to risk is variable and the principal does not possess complete information regarding individual behavior, competence or attitudes that change across people (Cuevas-Rodríguez et al., 2012). Bottazzi et al. (2016) summarized trust as a subjective belief about likelihood that a potential trading partner will act honestly. Not only trust can be analyzed under the personal perspective and micro level but also several authors have identified some forms of collective and institutional trust (Höhmann & Malieva, 2005) in connection to the meso and macro levels (Humphrey & Schmitz, 1998).

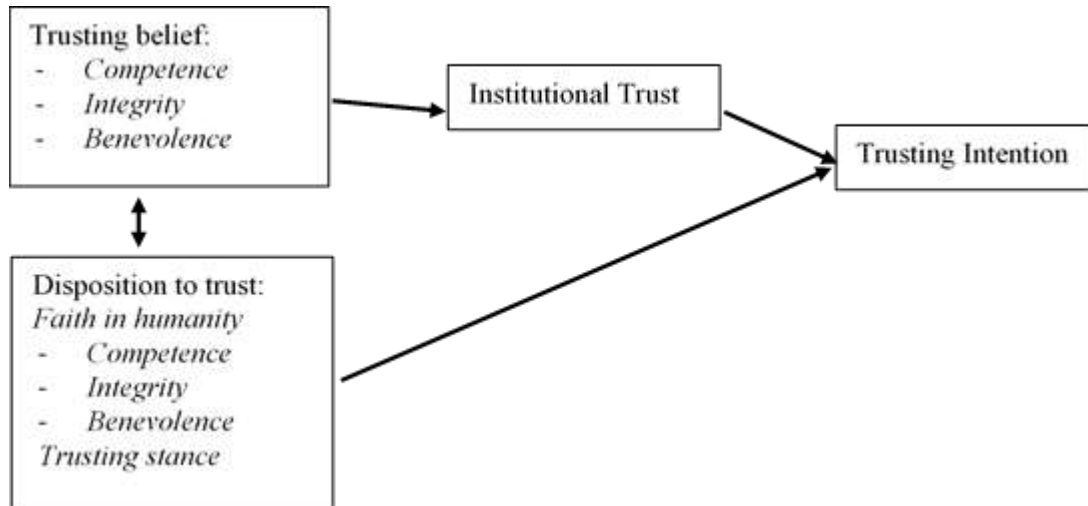
Trust has been widely researched in different disciplines such as psychology, sociology or economy. Psychologists regularly frame their assessment of trust in terms of attributes of trustors and trustees (Rotter, 1967). Sociologists often find trust in socially embedded properties of relationships among people (Granovetter, 1985) or institutions (Zucker, 1986). Economists tend to view trust as either calculative (Williamson, 2008a) or institutional (North, 1990). Rousseau, Sitkin, Burt, & Camerer (1998, p.402) argued that despite the common concern regarding these different disciplinary lenses, there is a “considerable overlap and synthesis in contemporary scholarship on trust”.

The proliferation of different proposed types of trust has also prompted some researchers to develop composite trust definitions and models (McKnight et al., 2002). Kee & Knox (1970) defined a set of five trust-related constructs: dispositional factors, situational factors, perceptions of the other, subjective trust and behavioral trust. Mayer et al. (1995) included propensity to trust, trust (willingness to be vulnerable to another), and perceptions of trustworthiness (cognitions). What both models have in common is a combination of trusting dispositions and willingness/intentions.

In this paper, we build on the integrative model of trust between individuals proposed by Mayer et al. (1995) and modified by McKnight, Cummings, & Chervany (1998) in the context of new organizational relationships. The model of Mayer et al. (1995) consider only the three most common types of trust: trusting intentions, trusting beliefs and disposition to trust. McKnight et al. (1998) included also institutional-based trust (Figure 1.1). McKnight et al. (1998) suggested that perceptions on a given trusting belief lead to the intention to engage in trust-related behavior with a specific attribute. Furthermore, perceptions of the structural characteristics of institutional-

base trust can be influenced by trusting beliefs and in turn influence the trusting intention. Finally, the disposition to trust (or the propensity to trust others) can be influenced by the trusting beliefs and influence the trusting intention.

Figure 4.1 Trust model adapted from: Mayer et al. (1995) and McKnight et al. (1998)



In a general context, *trusting beliefs* are an assurance that the trustee displays favorable traits to induce trusting intentions. Even though McKnight et al. (2002) identified many types of attributes of the trusting beliefs in the literature, three of them are utilized most often (Bhattacharjee, 2002; Hoffman, Novak, & Peralta, 1999; Mayer et al., 1995). These are *competence*, or the ability, skill and expertise of the trustee to do what the trustor needs; *integrity*, or the trustee’s honesty and promise keeping ability; and *benevolence*, capturing the trustee’s caring and motivation to act in the trustor’s interest. Mayer et al. (1995) affirmed that competence, benevolence and integrity are important to trust and each may vary independently of the others, implying that the three factors are separable. If competence, benevolence and integrity are all perceived to be high, the trustee will be deemed quite trustworthy. However, trustworthiness should be thought as a continuum, rather than the trustee being either trustworthy or not trustworthy. McKnight et al. (2002) stated that each of these three factors could vary along the time.

Disposition to trust is the extent to which a person displays a tendency to be willing to depend on others across a broad spectrum of situations and persons (McKnight et al., 2002). It also might be thought of as general willingness to trust others (Mayer et al., 1995). Usually two variables are used to discern disposition to trust: faith in humanity and trusting stance. Faith in humanity means one assumes others are usually well meaning and dependable (McKnight et al., 2002). Trust literature suggests that faith in humanity can be decomposed in the same way that trusting beliefs considering competence, integrity and benevolence, in this case taking into account all human

beings. Trusting stance means that regardless of what one believes about people's attributes, one assumes that better outcomes result from dealing with people as though they are meaning and reliable (McKnight et al., 1998).

McKnight et al. (2002) introduced the *institution-based trust* for perceptions of the internet environment in their integrative model of trust. Institutional-based trust believes that the environment is in proper order and success is likely because the situation is favorable (Baier, 1986; Lewis & Weigert, 1985) and that structures like guarantees, regulations, promises, legal recourse or other procedures are in place to promote success (Shapiro, 1987; Zucker, 1986). Nahapiet & Ghoshal (1998) considered trust as social capital embedded within networks of mutual acquaintance and recognitions providing the basis for cooperation and collective action.

Moritz & Block (2016) structure the literature in crowdfunding according to its three main actors: capital seekers, capital providers, and intermediaries. Capital seekers or entrepreneurs in the crowdfunding literature can be divided in motivations of entrepreneurs for crowdfunding, determining factors for successful crowdfunding, and legal framework. Capital providers or investors in the crowdfunding literature can be divided in three sections: motivations and deterrents of capital providers, importance of social network, and signaling in crowdfunding transactions. The last actors in the crowdfunding ecosystem, intermediaries according to Moritz & Block (2016) classification, are the crowdfunding platforms. Trust has been discussed indirectly through other concepts when analyzing the relation between capital seekers and the crowdfunding projects success. For instance, Giudici, Guerini, & Rossi-Lamastra (2013) applied the lens of social capital, defined by the goodwill available to her/him from the structure and content of her/his social relations, to learn what determines the probability of a project to reach the target funding. In relation to capital provider, Duarte, Siegel, & Young (2012) analyzed trust building through image/appearance and its impact on lending probability and interest rates in P2P lending markets. Finally, two articles engage the crowdfunding platforms under the trust approach Greiner & Wang (2010) analyzed the trust-building mechanisms of crowdfunding platforms and Brem & Wassong (2014) analyzed the factors determining the investment decision of individual investors in crowdfunding. Scholars agree that entrepreneurship is a recent phenomenon (Agrawal et al., 2013; Belleflamme et al., 2014; Mollick, 2014; Moritz & Block, 2016), very few articles have been found where trust approach is considered and none research have been done including both, trust approach and equity crowdfunding phenomenon.

4.3. A MODEL OF TRUST IN EQUITY CROWDFUNDING

In a crowdfunding context, the trust model of Mayer et al. (1995) and McKnight et al. (2002) can be used to explain the trust relationship between entrepreneurs seeking capital for their projects (trustees) and investors willing to (partially) provide such capital (trustors). It suggests that investors' trusting beliefs in entrepreneurship projects lead to the intention to invest in a specific equity crowdfunding project; and that perceptions of institutional-base trust in the equity crowdfunding platform and the relationship among their investors can influence such intention. Furthermore, the investor's general disposition to trust can influence both the investor's trusting beliefs and his/her intention to invest in a specific equity crowdfunding project.

Though considering both personal trust and institutional trust, the above-mentioned model fails to include an intermediate level of trust which is also considered relevant in the literature: collective trust. Indeed, both trusting beliefs and disposition to trust are latent variables measuring the intention to trust at the personal or micro level, because personal trust is based on relations on the micro level. In the crowdfunding context, an investor expects entrepreneurs to act both in his/her interest and in the investor's own interest. Collective trust, on the meso level, arises from recommendations on reputation of the individuals in the community or organization they belong to. In the crowdfunding context, collective trust could arise from trust in a given crowdfunding platform or in the crowdfunding platforms in general, and it entails trust in recommendations given through the network of the crowdfunding platform, either from other investors or from entrepreneurs having signed up in the crowdfunding platform. These recommendations on reputation refer to knowledge held by individuals about a potential partner in terms of their behavior in prior network relations or on shared rules and codes of conduct within groups and professions (Welter & Smallbone, 2006). The institutional trust, on the macro level, consist of the norms, values, and codes of conduct inherent within a society (Welter & Smallbone, 2011). Forms and trust levels are summarized in Table 4.1.

Table 4.1 Forms and levels of trust adapted from Welter (2012)

Forms	Level	Object	Source
Personal Trust	Micro	Relationship, person	Emotions, intentions, goodwill, benevolence, characteristic of persons, experiences, knowledge, competencies
Collective trust	Meso	Community (e.g. kinship, ethnic group, profession) Organization (e.g. network, firm, association) Industry	Characteristics of groups, information, reputation, recommendations, certifications, professional standards
Institutional trust	Macro	Cultural rules (e.g. norms, codes of conduct, values). Formal regulations (e.g. laws, certifications, licenses). Business infrastructure (e.g. business courts, administration, financing organizations). Government	

For the purpose of our analysis we argue that collective trust is much more relevant to measure the intention of trust than institutional trust, because recommendations on reputation refer to knowledge held by individuals about a potential partner in terms of their behavior in prior network relations or on shared rules and codes of conduct. They constitute a stronger signal in the crowdfunding environment (Ahlers et al., 2015) than the safeguards offered by the institutional level (Hooghiemstra & de Buysere, 2015). Indeed although in many countries the government has been regulating the crowdfunding ecosystem in order to avoid and control the opportunistic behavior of the entrepreneurs and the crowdfunding platforms themselves (Hooghiemstra & de Buysere, 2015), formal regulations are fairly new and partial to constitute a true safeguard.

Therefore, we propose the model on Figure 4.2 to explore trust in equity crowdfunding. It relates two latent variables appraising personal levels of trust (trusting beliefs in entrepreneurs and general disposition to trust) and a latent variable to assess collective trust to a final variable designed to consider the trusting intention of the investors in equity crowdfunding. Furthermore, we assume that three observable variables (competence, integrity and benevolence) can be used, both at the personal trust level and the collective trust level, to effectively obtain the latent variables.

Concerning investor's trusting beliefs on the crowdfunding ecosystem, *competence* refers to the investor's perception of the entrepreneur's abilities, skills and knowledge salient to an expected behavior (Mayer et al., 1995). According to Bhattacharjee (2002) this perception may be based on two factors: prior experience either first-hand or second-hand; and collective endorsement, such as campaigns promoted by the crowdfunding platforms. In the crowdfunding context, the investor perceptions of the entrepreneur's competence are mainly based on two related beliefs: 1) whether the entrepreneur is competent, expert or skilled enough to perform the intended behavior; and 2) whether the entrepreneur has access to the knowledge required to perform the behavior appropriately. When the investor perceives that there is a lack of these beliefs, the entrepreneur's competence could be undermined reducing the level of trust. In order to overcome this perception, entrepreneurs attempt to signal their ability to the investors by publishing some credential in relation to product development, business management and other relevant information to show their expertise in the field (Ahlers et al., 2015).

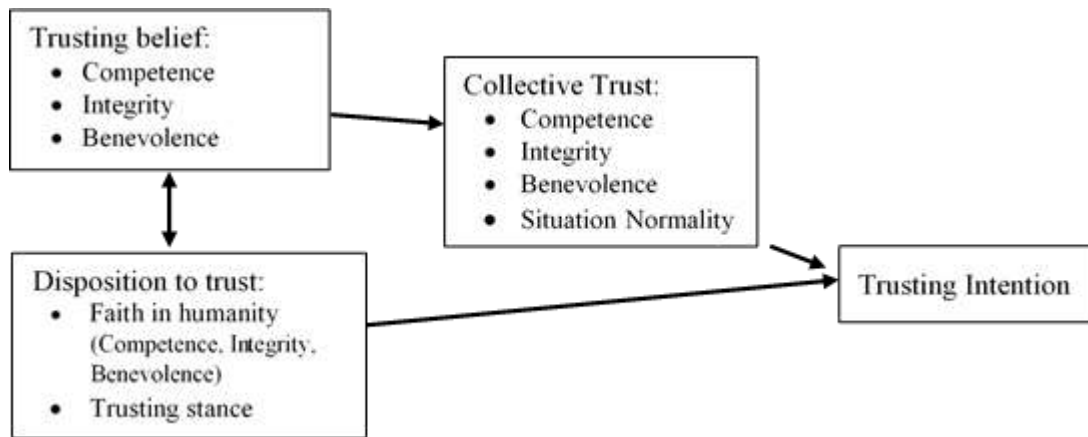
Integrity refers to the investor's perception that the entrepreneur will adhere to a set of principles or rules of exchange acceptable to the investor during and after the exchange (Mayer et al., 1995). Having the skills or the ability is not sufficient for building trust, entrepreneurs must also be relied on to fulfill obligations to the investors (Rempel et al., 1985). The investor's perceived integrity

of the entrepreneur generates confidence in the entrepreneur behavior and reduces the perception of risk. In order to build integrity perception, several indicators are usually considered, such as the detailed explanation of the business model through a business plan; available knowledge of the company past performance; company's and entrepreneur's recommendations on social media; or entrepreneur's openness to provide and disclosure information about the product, management, process, technology, among others. Entrepreneurs may build integrity perceptions by explicitly disclosing information and answering to all the questions coming from investors, which in turn have to perceive that the information and answers given are fair and reasonable. Integrity is similar to honesty, fairness, credibility, consistency, predictability, reliability and dependability dimensions proposed in the literature (McKnight et al., 2002).

Benevolence is the extent to which an entrepreneur is believed to intend doing well to the investor, beyond his own profit motive (Mayer et al., 1995). A benevolent entrepreneur would help the investor, even when the entrepreneur is not required to be helpful or is not rewarded for being helpful. Benevolence introduces faith and altruism in a relationship, which reduces uncertainty and the inclination to guard against opportunistic behaviors (Bhattacharjee, 2002). In the crowdfunding context, the entrepreneur's company could be providing quarterly or regular information to the investors related to the company's performance and product development. In this case, the benevolent entrepreneurs should at least demonstrate receptivity and empathy towards the investors' concerns and needs; and proactively make good faith efforts to resolve the investors' concerns.

The same three attributes (competence, integrity and benevolence) plus trusting stance are considered here with regard to disposition to trust. We maintain the usual hypotheses made in trust literature, since it refers to the individuals' general trust and not specifically regarding the crowdfunding ecosystem. In this sense, disposition to trust will influence how much trust has the investor in the entrepreneur and his/her project. Investors vary their disposition to trust depending on their different experiences, personalities, and cultural backgrounds.

Figure 4.2 Proposed trust model in equity Crowdfunding



The model entails the following hypothesis (Figure 4.2):

- H1.** Competence, integrity and benevolence are equally significant factors in appraising trusting beliefs at the investors’ personal level.
- H2.** Competence, integrity and benevolence are equally significant factors in the investor’s faith in humanity
- H3.** Investor’s faith in humanity and trusting stance are equally significant factors in appraising his/her disposition to trust.
- H4.** Competence, integrity, benevolence and perception of normality are equally significant factors in appraising the investor’s collective trust in equity crowdfunding.
- H5.** Investor’s Trusting Belief and Disposition to trust are mutually related.
- H6.** There is a positive relationship between trusting belief and collective trust.
- H7.** There is a positive relationship between disposition to trust and trusting intentions
- H8.** There is a positive relationship between collective trust and trusting intentions

4.4. METHODOLOGY

4.4.1. Data collection

The data collection in this research was conducted online between September and October 2016, gathered from four different forum groups on LinkedIn related to equity crowdfunding across three countries: Germany, Netherlands and Spain. The participants in these four groups sum up a total of 45,012 members. We obtained a total of 311 responses to the survey, but only 242 had completed all survey questions. The valid response rate represented 0.53% but constitutes a statistically significant sample of the registered members of the forums, with a confidence of 90%, maximum indetermination $p=q=0.5$, and error margin of 6%. Table 4.2 provides some of the demographical characteristics of the sample. A typical investor in our sample is male and aged mainly between 26 and 45.

Table 4.2 Survey demographics

Variable	Participants	%
Observations	242	100
Gender		
Female	39	16%
Male	203	84%
Age		
18-25	23	10%
26-35	75	31%
36-45	78	32%
46-55	64	26%
56-65+	2	1%

4.4.2. Scale development

Data to appraise the relationship between the variables stated in the model was obtained through the above-mentioned online questionnaire, using a total number of 37 questions. We asked the respondents to rate each item using a five-point Likert scale.

Trusting belief and disposition to trust latent variables were measured through three observable variables (competence, integrity and benevolence), using a set of items adapted from scales reviewed and summarized in (Rempel et al., 1985) and McKnight et al. (2002). We selected items intending to capture those aspects most relevant in the crowdfunding context. For competence, we included perceptions of how well the entrepreneur did her job or how knowledgeable the entrepreneur was regarding his expertise and ability. For integrity, we captured perceptions of the entrepreneur honesty, trustfulness, sincerity, and keeping commitment. Finally, benevolence items focused on the entrepreneur acting in the investor’s best interest, trying to help, and being genuinely concerned. Furthermore, for the disposition to trust variable we include two items related to trusting stance. The list of specific questions can be seen in Table 4.3.

We developed the collective trust items by adapting the experimental case created by Garfinkel, (1963). Essentially, they capture the same three dimensions: competence, integrity and benevolence. We wanted to reflect the perceptions about the equity crowdfunding platform in general rather than a specific equity crowdfunding platform. Table 4.4 specifies the list of items used for each variable.

Table 4.3 Trusting belief and disposition to trust items

<i>Latent variables</i>	<i>Observable variables</i>	<i>Items for each construct</i>
Trusting beliefs (TB)	Competence (C)	1. Entrepreneurs have the skills and expertise to allocate the capital invested efficiently.
		2. Entrepreneurs perform their role of achieving what they committed in the investment process.
		3. Overall, entrepreneurs are capable and proficient provider of the product/service offered.
		4. In general, entrepreneurs are very knowledgeable about the business.
	Integrity (I)	1. Entrepreneurs are truthful when dealing with the capital invested.
		2. I would characterize the typical entrepreneur as honest.
		3. Entrepreneurs would keep their commitments.
		4. Entrepreneurs are sincere and genuine.
	Benevolence (B)	1. I believe that the entrepreneurs would act in my best interest.
2. If I require information, the entrepreneurs would do their best to deliver that information to me.		
3. Entrepreneurs are interested in my well-being, not just his/her own.		
Disposition to trust (DT)	Competence (C)	1. I believe that most people do a very good job at their work.
		2. Most people are very knowledgeable in their chose field.
		3. A large majority of people are competent in their area of expertise.
	Integrity (I)	1. In general, most people keep their promises.
		2. I think people generally try to back up their words with their actions.
		3. Most people are honest in their dealings with others.
	Benevolence (B)	1. In general, people really do care about well-being of others.
		2. The typical person is sincerely concerned about the problem of others.
		3. Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.
	Trusting Stance (G)	1. I usually trust people until they give me a reason not to trust them.
		2. I generally give people the benefit of the doubt when I first meet them.

Table 4.4 Collective trust items

<i>Latent variables</i>	<i>Observable variables</i>	<i>Items for each construct</i>
Collective trust (CT)	Competence (C)	1. In general, most crowdfunding platforms are competent at offering investments opportunities.
		2. The crowdfunding platforms do a capable job selecting the companies funded.
		3. I feel that the crowdfunding platforms are good at what they do.
	Integrity (I)	1. I am comfortable relying on the crowdfunding platform offers to invest.
		2. I feel fine investing through the crowdfunding platform since the companies funded fulfill their agreements.
		3. I always feel confident that I can rely on the crowdfunding platform to do their work when I interact with them.
	Benevolence (B)	1. I feel that crowdfunding platform would act in an investors' best interest.
		2. If an investor requires help, the crowdfunding platform would do it best to help.
		3. Crowdfunding platforms are interested in the investor's well-being and not just their own well-being.
	Situation Normality (G)	1. I am comfortable making investments through the equity crowdfunding platforms.
		2. I feel good about how things go when I invest using any equity crowdfunding platform.

In order to operationalize trust intention, we adapted the scales proposed by Bhattacharjee (2002) and McKnight et al. (2002), including three observable variables. In accordance with Bhattacharjee (2002) we have kept positive wording items, and with McKnight et al. (2002, p. 9) we emphasized terms like “safeguards”, “protect” and “robust” (Table 4.5).

Table 4.5 Trust items

<i>Latent variable</i>	<i>Observable variables</i>
Trust Intentions (TI)	1. The Crowdfunding platforms have enough safeguard that make the investor feel comfortable using it to invest in companies
	2. I feel assured that the legal and technological structures adequately protect me from problems in the investment process.
	3. In general, the Crowdfunding system is a robust and safe environment in order to make investment decision.

4.4.3. Methodology of Analysis

Data analysis took place in four steps, as described below. Prior to that, however, both Chi-square and F-exact tests were used in order to ensure the homogeneity of the sample in the three different countries of residence (Table 4.6).

Table 4.6 Sample homogeneity

Variable	F – exact test p-value	Variable	F – exact test p-value
TBC1	.330	DTB2	.298
TBC2	.256	DTB3	.532
TBC3	.092	DTG1	.440
TBC4	.792	DTG2	.216
TBI1	.686	CTC1	.494
TBI2	.241	CTC2	.964
TBI3	.096	CTC3	.404
TBI4	.706	CTI1	.769
TBB1	.636	CTI2	.737
TBB2	.627	CTI3	.799
TBB3	.135	CTB1	.514
DTC1	.560	CTB2	.307
DTC2	.722	CTB3	.410
DTC3	.322	CTG1	.390
DTI1	.095	CTG 2	.754
DTI2	.039	TRUST1	.622
DTI3	.296	TRUST2	.227
DTB1	.390	TRUST3	.270

The main tool applied to explore our trust model was the structural equation modeling (SEM) technique, widely used to explore and test causal relationships. SEM describes the relationships between two kinds of variables: latent – i.e. which cannot be observed directly due to their abstract character – and observed variables, measured according to a rating scale in our questionnaire. A structural equation model consists of one structural component, expressing the relationship between latent variables, and several measurement components, taking into account the

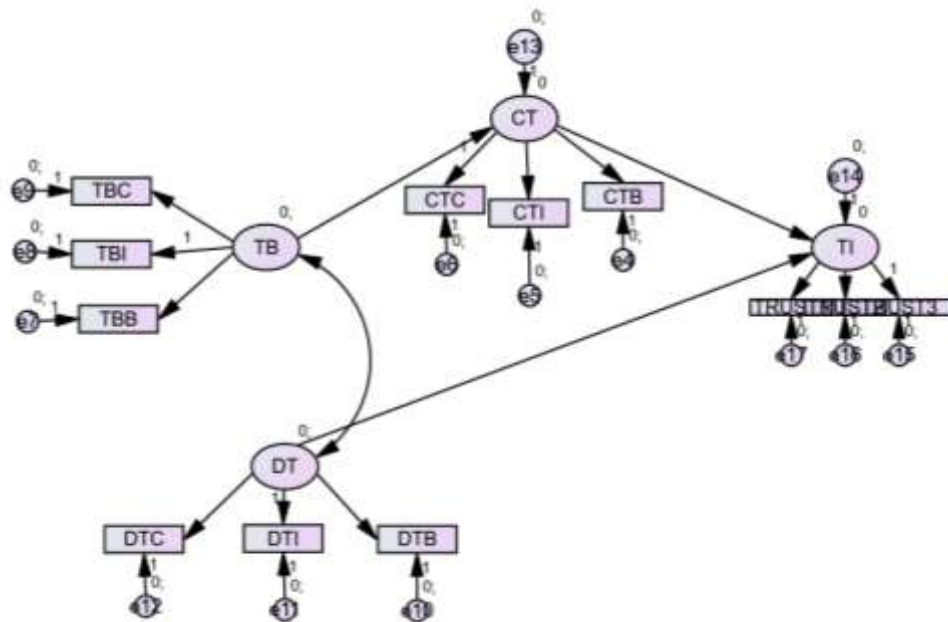
relationships between several observed variables and the represented latent variable. A number of assumptions underlie the use of a SEM model for a particular data sample. Therefore, our first step in the process was to verify those assumptions (multivariate normality, multicollinearity, sample size and positive definiteness) in our case.

The second step involved the use of Principal Component Analysis (PCA) to reduce the dimension of the number of observed variables (Jolliffe, 2002; Wold et al., 1987). In fact, as Tables 4.3 and 4.4 suggest, we have proposed a number of questions related to the same “observable” variable (competence, integrity, benevolence, etc.). Whether, and if, the diverse items related to a given “observable” variable can be reduced to a unique principal component, we can use the loading factors of these items to obtain a valid measure for the observable variable, thus converting it to a truly observed one. Prior to that, of course, we ran several standard tests to ensure the suitability of the approach. In this same second step, we also measured the internal consistency of the collected data for each of the “observable” variables using the Cronbach’s alpha measure.

Structural equation models can be quite complex, and incorporate both latent variables and observed variables (Hox & Bechger, 1998). Figure 4.3 is a diagram of our model on the trust intention in the equity crowdfunding ecosystem. It contains four factor models. The first relates the latent variable *disposition to trust* to the observed variables *competence*, *integrity* and *benevolence*. The second relates the latent variable *trusting belief* to the observed variables *competence*, *integrity* and *benevolence*. The third relates the latent variable *collective trust* to the observed variables *competence*, *integrity* and *benevolence*. The fourth relates the latent variable *trusting intentions* to the observed variables *trust 1*, *trust 2* and *trust 3*.

As it is usual when developing a structural equation model, a two-step modeling method was used, comprising a confirmatory factor analysis (CFA) followed by SEM. The aim of the CFA is to test the validity of the measurement components of each latent variable. In the third step, therefore, we have calculated the unidimensionality of each latent variable in order to check the factor loading between the latent and each of the observed variables. We have subsequently analyzed two types of validity: convergent and discriminant. The fourth and last step consisted of the SEM itself, calculating afterwards the model fit and nomological validity. We conducted the analysis by creating a path diagram for each latent construct and their observed variables and running the model using AMOS 24.0. We applied the following indices and standards to assess the model fit: Chi-square value/df (CMIN/df), Normed Fit Index (NFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA).

Figure 4.3 Measurement model



4.5. RESULTS

4.5.1. Assumptions regarding the use of SEM for our data

In order to ensure that our data was fit for the SEM approach, we reviewed the assumptions of multivariate normality, multicollinearity, sample size and positive definiteness using SPSS 24.0.

First, we run a Mahalanobis distance test to figure out if they were outliers in our data set, finding no evidence of outlier observations. Second, we run a collinearity test to uncover possible evidence of multicollinearity among the variables in the data set. Taking as the cut off to discern if there are signs of multicollinearity either Tolerance $< .05$ or VIF > 10 , no signs of collinearity were found (see Appendix 2 for the detailed calculations).

Third, we used Westland, (2010) formulae to verify the adequacy of the sample size for our structural equation model. Considering an anticipated effect size of 0.3, a desired statistical power level of 0.8, the number of latent variables (4), the number of observed variables (14), and an error margin of 5%, a minimum level sample size of 138 was obtained. Such minimum value raises to a total of 221 advised observations for a desired statistical power level of 0.9 and an error margin of 1%. Both values lie below our sample size of 242 observations, therefore ensuring that we can actually use the SEM approach.

Finally, we run two complementary tests to assess positive definiteness: homoscedasticity and variance. Homoscedasticity was appraised by examining a scatterplot of the residuals against the predicted values of the dependent variables. The Loess line shows that our data did not violate the assumption of homoscedasticity (Appendix 3). Furthermore, the variance of any of the variables did not violate the rule-of-thumb of being 10 times than any other variance in the sample (Appendix 4). We could therefore conclude that positive definiteness holds for our sample.

4.5.2. Principal component analysis

As outlined in the methodology section, we have added a further previous step to the usual two-step modeling method for the SEM technique, introducing a PCA analysis to obtain measures for each of the observed trust variables configuring our three first latent variables (trusting belief, disposition to trust and collective trust). The aim was to reduce to a single value each one of the items measuring competence, integrity and benevolence in each of the three variables, as well as trusting stance for disposition to trust and normality for collective trust.

Following standard procedures, we tested how suited was our data for a factor analysis using KMO and Bartlett's test of sphericity, taking into account each one of our 12 measurable variables. Even though all samples were significant for the Bartlett's test of sphericity, as a rule-of-thumb, KMO values less than 0.6 indicate the sampling is not adequate. Therefore trusting stance (DTG) and situation normality (CTG), proposed as observed variables for disposition to trust and collective trust respectively, both with KMO values of 0.50, were dismissed from our trust model in equity crowdfunding.

Finally, internal consistency reliability analyses were conducted using Cronbach's alphas. It was found that all constructs were reliable. Summary of the KMO test, Bartlett's test of sphericity and Cronbach's alphas can be found in Table 4.7.

Table 4.7 also includes the predicted number of components for each group of items (using parallel analysis), as well as the cumulative variance explained in each case for the resultant component. In all cases, a unique principal component was found, with loading factors significant for all items considered in each one. Summary of the cross-loading values for each of the items measuring competence, integrity and benevolence associated with the three latent variables of our model can be found in Table 4.8. Our analysis ensures that these loading factors can be effectively used to obtain a measured value for each of the 9 observable variables of our model considered here. Therefore, these are the measured values of the different observed variables that are used in the next subsection in the SEM technique to validate our model.

Table 4.7 KMO, Bartlett's test and Cronbach Alpha

Reduced variables	KMO	Bartlett's Test			N° Components	Cumulative variance	Cronbach's alphas (Ca)	N° items (Ca)
		Approx. Chi ²	df	Sig.				
TBC	0.744	344.42	6	.000	1	64.844	0.814	4
TCI	0.781	247.00	6	.000	1	60.009	0.775	4
TCB	0.693	169.43	3	.000	1	66.970	0.753	3
DTC	0.702	328.10	3	.000	1	76.950	0.850	3
DTI	0.683	200.02	3	.000	1	69.027	0.774	3
DTB	0.705	256.51	3	.000	1	73.261	0.815	3
DTG	0.500	94.59	1	.000	1	78.560	ND	ND
CTC	0.725	280.25	3	.000	1	75.257	0.836	3
CTI	0.737	334.33	3	.000	1	78.382	0.862	3
CTB	0.688	180.278	3	.000	1	67.678	0.757	3
CTG	0.500	140.80	1	.000	1	83.336	ND	ND

Table 4.8 PCA cross-loadings component matrix^a

Trusting Belief cross-loading		Disposition to Trust cross-loading		Collective Trust cross-loading	
TBC1	.869	DTC1	.881	CTC1	.867
TBC2	.807	DTC2	.913	CTC2	.877
TBC3	.797	DTC3	.836	CTC3	.859
TBC4	.733	DTI1	.800	CTI1	.889
TBI1	.767	DTI2	.822	CTI2	.885
TBI2	.810	DTI3	.869	CTI3	.883
TBI3	.775	DTB1	.867	CTB1	.792
TBI4	.748	DTB2	.879	CTB2	.844
TBB1	.813	DTB3	.821	CTB3	.831
TBB2	.829				
TBB3	.813				

Extraction Method: Principal Component Analysis. a. 1 component extracted

4.5.3. Structural Equation Modeling

To be able to proceed with the confirmatory factor analysis (CFA) for each of the five latent variables (disposition to trust, DT; collective trust, CT; trusting belief, TB and trust intentions, TI), we have run two types of validity of our sample, convergent and discriminant. For convergent validity, we calculated both average variance extracted (AVE) and composite reliability (CR) for each group of measured variables. Rule-of-thumb indicates that AVE must have a value greater than 0.5 and CR greater than 0.7 to establish convergent validity. Calculations, summarized in Table 4.9, allow us to conclude that the measurable variables under each latent variable load well.

Table 4.9 Convergent validity

Convergent Validity	DT	CT	TB	TI
AVE value >0.5	0.586	0.654	0.567	0.574
CR value > 0.7	0.808	0.850	0.796	0.801
Convergent Validity	Established	Established	Established	Established

For discriminant validity, we compared square correlations and AVE scores for each of the pairwise constructs and developed covariance arrows among all possible combination of the latent variables. To confirm discriminant validity none of the square correlations should be higher than any of the two AVE calculated. Table 4.10, summarizing the obtained values, ensures that the model shows discriminant validity.

Table 4.10 Discriminant validity

Correlation			Factor correlation	Factor correlation ²	AVE1	AVE2	Discriminant Validity
CT	↔	TI	0.725	0.526	0.654	0.574	Established
TI	↔	TB	0.450	0.203	0.574	0.567	Established
TI	↔	DT	0.470	0.221	0.574	0.574	Established
CT	↔	DT	0.377	0.142	0.654	0.574	Established
CT	↔	TB	0.447	0.200	0.654	0.567	Established
TB	↔	DT	0.733	0.537	0.567	0.586	Established

We were therefore able to proceed with the CFA, which we did using SPSS 24.0. We have calculated the unidimensionality of each latent variable in order to identify the highest factor loading and converted it into the parameter. Later on, we run the model using SEM, obtaining the values of the factors expressing the relationships between the latent variables.

Figure 4.4 shows the results of the structural equation modeling. Nomological validity can be tested by examining the relationships among the latent variables. The results show a strong relationship between collective trust and trust intentions (0.62), and also between trusting beliefs and disposition to trust (0.58), and between trusting beliefs and collective trust (0.44). However, the relationship between disposition to trust and trusting intention, that was expected to be at least intermediate, was found to be in fact very low (0.14). The obtained loading factors for each observed variable were in almost all cases higher than 0.9 except for DTC = 0.83, TBB = 0.887 and TRUST2 = 0.86. Estimates and p-values are summarized in Appendix 5.

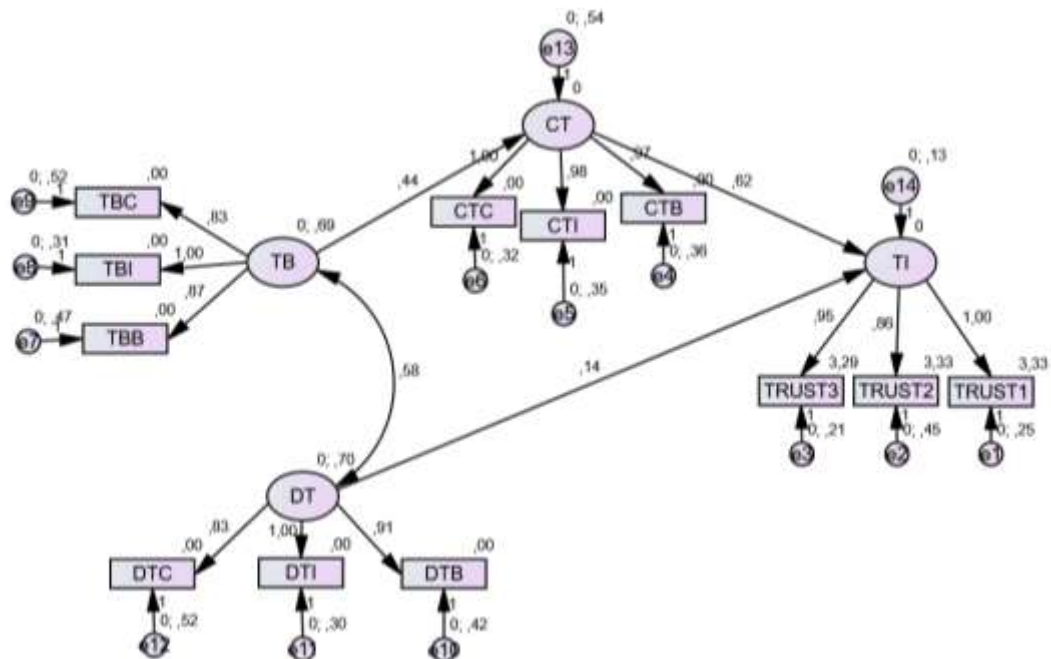
To be able to establish whether ours is a good-fitting model, i.e. one that is reasonable consistent with the data and so does not necessarily require re-specification, we have considered different criteria, obtaining the following values: CMIN/DF = 3.339, NFI = 0.90, CFI = 0.919 and RMSEA = 0.090.

There is a considerable debate in the literature as to what means “reasonable consistent with the data” (Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne, 2007; Hu & Bentler, 1999; Markland, 2007; Sharma, Mukherjee, Kumar, & Dillon, 2005). Some researchers set the cut off for the CMIN/df below 5 (K. D. Martin & Cullen, 2006) while others set the cut off below 3 (Dion, 2008). Our model can therefore be considered good-fitting according to the first cut-off.

Literature recommends to have values above 0.90 for NFI (Bentler & Chou, 1987; Markland, 2007; K. D. Martin & Cullen, 2006), exactly the value obtained in our model. However some authors do not recommend this index because the sample has to be large, more than 500, because the more parameters are added to the model with a small sample the larger will be the index (Dion, 2008; Hayduk et al., 2007). Turning to the Comparative Fit Index, many authors agreed that CFI has to be larger than 0.90 (Jiang, Jiang, Klein, & Klein, 1999; K. D. Martin & Cullen, 2006). Again, the obtained value for CFI in our model slightly exceeds the cut-off value.

Finally, MacCallum, Browne, & Sugawara (1996) have used 0.01, 0.05, and 0.08 to indicate excellent, good, and mediocre fit, respectively, with RMSEA. Kenny, Kaniskan, & McCoach (2015) suggest that for a sample (as opposed to a population), values of RMSEA greater than 0.10 indicate goodness of fit. We can therefore conclude that the fit of our model is in the limit of the cut-offs discussed above for all different model fit tests considered.

Figure 4.4 Results structural equation model



With the SEM complete, we can discuss the hypothesis underlying the proposed trust model for equity crowdfunding. We predicted some significant relationships between the observed variables and the corresponding latent variables, as well as some relationships between latent variables.

Concerning trusting beliefs at the investors' personal level, we predicted the three variables considered, competence, integrity and benevolence with respect to entrepreneurs, as equally significant factors (**H1**). Indeed, all regression coefficients are higher than 0.80, with p-value < 0.000. Therefore, the hypothesis is supported by the SEM. Furthermore, given the value attained by the squared multiple correlation, $R^2 = 0.69$, the percentage of variance explained by the observed variables considered in the model is quite high.

Similarly, the measurable variables of competence, integrity and benevolence, taken into account with respect to humanity in general, are found to be nearly equally significant factors in the investor's faith in humanity (**H2**), for the regression coefficient for each of the variables is higher than 0.80 with $p < .000$. However, the values for trusting stance in our sample did not support its consideration as a viable variable for the model, thus **H3** is not supported by our data. Therefore, **H2** is only partially supported in that only the variables of competence, integrity and benevolence in humanity are significant factors for the latent variable disposition to trust. Since the value of the squared multiple regression obtained in this case, $R^2 = 0.70$, is high enough we can affirm though that the variables are good predictors of the latent variable disposition to trust.

Our next hypothesis, **H4**, predicted that competence, integrity and benevolence as enounced with respect to crowdfunding platforms, together with perception of normality, were equally significant factors representative of the latent variable collective trust. In fact, we had to disregard the latter, but the regression coefficients for the first three variables are found to be higher than 0.80 with a p-value < .000 and $R^2 = 0.54$. Therefore, this hypothesis is partially supported by the SEM.

Moving to the relationships between latent variables, **H5** predicted a significant relationship between trusting belief and disposition to trust. Our SEM analysis provides a regression coefficient 0.58, with a p-value < .000. Therefore, this hypothesis is supported. Similarly, the positive relationship between trusting belief and collective trust (**H6**) and the positive relationship between collective trust and trusting intentions (**H8**) are endorsed by our analysis. The former is supported at $p < .000$ with a coefficient of 0.4; while the latter is supported at $p < .000$ with an estimate of 0.62.

However, we also predicted a positive relationship between disposition to trust and trusting intentions (**H7**). Even though such a relationship was found to be significant at $p < 0.005$, the estimate is very low at 0.14, and therefore we must conclude that this predictor is not sufficient to explain trusting intentions.

4.6. DISCUSSION AND CONCLUSIONS

In this paper, we set out to examine which are the constructs and processes from a diverse trust research literature review that synthesize a trust model in the equity crowdfunding ecosystem. The model is exploratory and intends to shed some lights regarding the trust intentions of the investor when he/she takes risks allocating funds in equity crowdfunding projects; bearing in mind that usually crowdfunding investors do not have any capacity of control and decisions must be made in presence of an information asymmetry that tends to benefit the entrepreneur. After the literature has been reviewed some hypotheses were developed and tested. Table 4.11 provides a summary of the hypotheses of our trust model, and the results obtained through the SEM analysis. Prior to discuss them, we must take into account that, as occurs with this type of analyses, the existence of a statistical correlation or relationship does not actually prove causality of influence, but simply gives a plus supporting the intuitive belief of its existence. Therefore, we shall often use the expression “appears to influence” as an indication of “influence” rather than an irrefutable proof of such influence.

Table 4.11 Summary of hypotheses and results

Hypotheses	Test result	Conclusions (if the hypothesis was not confirmed)
H1. Competence, integrity and benevolence are equally significant factors in appraising trusting beliefs at the investors' personal level.	<i>Confirmed</i>	
H2. Competence, integrity and benevolence are equally significant factors in the investor's faith in humanity	<i>Partially Confirmed</i>	The three variables are indeed equally significant, but the only ones in the appraisal of the investor's disposition to trust
H3. Investor's faith in humanity and trusting stance are equally significant factors in appraising his/her disposition to trust.	<i>Non confirmed</i>	Trusting stance could not be considered for our data
H4. Competence, integrity, benevolence and perception of normality are equally significant factors in appraising the investor's collective trust in equity crowdfunding.	<i>Partially Confirmed</i>	Only competence, integrity and benevolence were found to be equally significant factors
H5. Investor's Trusting Belief and Disposition to trust are mutually related.	<i>Confirmed</i>	
H6. There is a positive relationship between trusting belief and collective trust.	<i>Confirmed</i>	
H7. There is a positive relationship between disposition to trust and trusting intentions	<i>Non confirmed</i>	Such a relationship was found, but quite weak and only supported at 5% error margin
H8. There is a positive relationship between collective trust and trusting intentions	<i>Confirmed</i>	

Trusting belief and disposition to trust appear to have a positive and strong relationship in our model. Trusting belief explains the investor's perception that the project presented by a given entrepreneur can have a positive impact in his/her portfolio of investment. Disposition to trust, on the other hand, captures the faith that the investor has towards the good intention and willingness

of humanity, and hence the entrepreneur. The mutual influence of these two latent variables seems therefore quite intuitive, and the results seem to confirm this in our sample.

Our main result in this paper refers to the inclusion of the concept of collective trust in the framework of trust in equity crowdfunding. Indeed, collective trust in the well doing of equity crowdfunding platforms seems to be strongly influenced by the investor's trusting belief in entrepreneurs, and in turn influence the investor's trust intentions. It seems therefore to be a good explanatory of trust when investors allocate money in equity crowdfunding projects.

As a further indicator of the role of collective trust in our model, it has to be noted that the relationship between disposition to trust others and trust intentions in the crowdfunding ecosystem was found to be weak. We can therefore surmise that investors focus rather more in channeling their trust intentions through their trust in the good will of entrepreneurs and platforms than in their general disposition to trust and faith in humanity. Gill, Boies, Finegan, & McNally (2005) provided further empirical support for the model of trust proposed by Mayer et al. (1995) and identified that situational strength as an important boundary condition of the relation between disposition to trust and the intention to trust others. In their study, they found that coworkers have a higher propensity to trust other coworkers when the *competence*, *integrity* and *benevolence* was ambiguous but not when the coworker perceived the situation as clearly trustworthy or clearly untrustworthy. Translating this idea from the co-working space to the equity crowdfunding investment ecosystem, the platform could be sending signals (i.e. information flow, reputational promotions, recommendations, certifications, and professional standards) to the investors in order to appear as trustworthy as possible, however this strategy has the opposite impact, instead of being perceived as trustworthy, the crowdfunding platforms disport the investor's disposition to trust and faith in humanity perceptions.

Equity crowdfunding is a new phenomenon where an entrepreneur's project can be funded by raising monetary contributions from a large number of people in exchange for a stake in a company. The exchange of monetary contribution for shares in a company is managed through on-line portals known as equity crowdfunding platforms. In that sense, investors are acquiring a participation of companies in similar manner as they would proceed if they were buying any good or service on-line: product or service information searching, alternative evaluations and purchase (Bellman, Lohse, & Johnson, 1999; Oh, Parwada, & Walter, 2008). We see the emergence of a new phenomenon in investment relations where the trust component plays an important role between the interactions among the investors, entrepreneurs and equity crowdfunding platforms. Trust is a complex and multidimensional concept that occurs between person, organizations and institutions.

5. UNDERSTANDING THE EQUITY CROWDFUNDING PHENOMENON: A TRUST-AGENCY THEORY BASED ANALYSIS

5.1. INTRODUCTION

One of the main problems entrepreneurs face is how to raise the money needed for financing their start-ups, their continued operations and their strategic visions. One way to raise money is through debt; however, the majority of start-ups will not pass the demanding and strict regulations of the traditional lenders (i.e. banks). Another way to obtain funding is through equity. Entrepreneurs who choose this funding option search for suitable candidates for financing their venture's start-up or growth among family and friends, venture capitalist, business angels, or, in the last few years, through crowdfunding.

When crowdfunding first appeared a few years ago, people with common objectives created funds to finance projects or ventures through donations (Howe, 2006). The start-ups funded in this way did not have to pay back the money received or provide any type of incentive to the donors. Later on, the reward-based crowdfunding appeared, under this model businesses and non-profit organizations finance projects seeking a certain amount of capital (Agrawal et al., 2015; Belleflamme et al., 2014; Kuppuswamy & Bayus, 2013; Mollick, 2014). These projects were made available, often online, for donors or fans who can contribute with money in exchange for an incentive for participating. Lately, the crowdfunding system also allows a group of individual investors to fund start-ups in return for an equity share (Ahlers et al., 2015).

Crowdfunding can be considered a new and creative source of funding that has today become increasingly available for entrepreneurs looking to finance their venture through equity (Ahlers et al., 2015; Belleflamme et al., 2014; Gierczank et al., 2015; Mollick, 2014). As a concept, the crowdfunding phenomenon is quite new but has developed and spread significantly in the past years. This is for instance evident in the fact that the United States government passed a law in the year 2012 (Stemler, 2013) in order to regulate this completely new market for fund raising.

Even though crowdfunding as a new fund-raising system can boost the creation of new companies through easier access to financing, it also raises some concerns that are a direct consequence of the principal-agent relationship that exists in a crowdfunding system. The crowdfunding investor is largely without influence on how his/her investment is used by the entrepreneur and lacks to a certain extent control mechanisms to prevent opportunistic behavior. The adverse selection dilemma, when the entrepreneur claims to possess skills he/she does not in fact have, is another

problem that the investors have to face in the crowdfunding system. Two theoretical approaches can be applied to outline how agents might behave under the responsibility of being funded through the crowd: theory of agency and theory of trust.

Agrawal, Catalan, & Goldfarb (2014) identified some disincentives for investors in the crowdfunding ecosystem: entrepreneur's incompetence, fraud and project risk. Entrepreneurs often have little experience in building a product, dealing with logistic and taking managerial decision. It is relatively easy and cheap to use false information to build fraudulent pages that look authentic campaigns and channel capital towards non-existing projects. Early-stage projects have higher chances of failure. This disincentives rely upon the theory of agency that explain the relationship between principals and agents in business (Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976). The theory of agency is concerned in tackling problems that can exist in agency relationships due to unaligned objectives or different levels of risk aversion. In the crowdfunding context, investors (principals) are not aware of the actions of the entrepreneurs (agents), investors do not have as much information as entrepreneurs have. Another problem addressed by the theory of agency is that entrepreneurs utilize resources of the investor but entrepreneurs incur in little or no risk because all losses will be burden of the investor. Finally, investors delegate the decision-making authority to entrepreneurs that involve third parties, i.e. customers, making possible to arise more agency problems. Taking such a perspective, it can be stated that contracts are not the only way to reduce the actual occurrence of opportunistic behavior of the agents but also it is important to consider the level of trust among them. A certain level of trust should be present to make the environment work out efficiently.

This paper is exploratory in nature and tries to empirical identify the trust and agency relationships among the stakeholders in the equity crowdfunding ecosystem, considering investors, entrepreneurs and equity crowdfunding facilitating platforms. The paper is structured as follows. We introduce the two bodies of the literature to which this study contributes: theory of trust and theory of agency. Later, we lay out our hypothesis and a trust-agency model for equity crowdfunding scheme build on the integrative model proposed by Mayer et al. (1995) and modified by Mcknight, Cummings, & Chervany (1998) for trust constructs, and build on the research proposed by Ley & Weaven (2011), Mason & Stark (2004), and van Osnabrugge (2000) for agency constructs. This is followed by the methodological section and empirical analysis using Partial Least Squares-Structural Equation Modeling (PLS-SEM). Finally, we discuss our findings and conclude.

5.2. LITERATURE REVIEW

The crowdfunding model rises concerns that are a result of the principal-agent relationship that exists in a crowdfunding system. The investor who provides funding for the start-up is to a large extent without influence on how his investment is managed by the entrepreneur. Nevertheless, they both need to take decisions that will affect their economic future.

The theory of agency deals with the general characteristics and problems that can be found in the relationship between principal and agent, and proposes the use of several formal mechanisms of control in different stages of the relationship. The theory of trust centers on an understanding of the fact that in the principal-agent relationship the agent could be induced to have emotional or social utility in fulfilling the desires of the principal, thereby lowering the need for many of the more formal control mechanisms proposed in the overview of the principal-agent theory. Fehr & Falk (2002) argued that certain non-monetary rewards and motives could shape human behavior. These include the desire to reciprocate, the desire to gain social approval or the simple enjoyment of developing a task. Furthermore, Hendry (2002) suggested that it is not possible for an organization to function effectively and delegate authority to agents without relying to some extent on their loyalty, honesty and goodwill. Cuevas-Rodríguez et al. (2012) stated that where agents find utility in fulfilling their responsibilities, trust becomes the most efficient mechanism for maximizing the principal's utility.

In management, trust is a subjective concept considered noise in the rational decision-making process, noise that should be avoided in order to assess the most appropriate decision (Cuevas-Rodríguez et al., 2012). However, complete avoidance of this noise is unrealistic. Business people cannot engage at all times in rational decision-making processes because information is not complete or business people cannot assess objective evaluations of other people's attitudes, obligations and future behavior (Becerra & Gupta, 2003). The business world is characterized by continued situations of uncertainty, and therefore it is necessary to understand the role played by trust and its consequences on business relationships.

In recognizing the potential for trust, Cuevas-Rodríguez et al. (2012) addressed three assumptions underlying the theory of agency (Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976). First, theory of agency assumes that the investor's and entrepreneur's objectives are established outside the agency relationship and are formalized in their respective agendas. Second, theory agency focuses mainly on designing efficient contracts that can reduce agency costs. Third, the application of reward-punishment contracts is an effective control mechanism to adjust the entrepreneur's opportunistic behavior in the investor-entrepreneur relationship.

The theory of trust adds to all the three points addressed by the theory of agency in order to obtain a more complete picture of the relationships. First, Granovetter (1985) recognized that prior interactions, previous encounters or meetings, can reduce and even eliminate conflict of interest between investor and entrepreneur. Second, Zaheer et al. (1998) suggested that is essential and critical is to build a business environment where there is no need for control, lowering in this way the agency costs.. Finally, Lee & Whitford (2008) and Perrow (1972) argued that the application of mechanisms based on a reward-punishment relationship could be counterproductive and widen differences between parties increasing the possibility of opportunistic behavior by the agent.

The theory of trust has shown that coercion is not always required. Cuevas-Rodríguez et al. (2012) state that an individual can adopt responsibilities voluntarily and perform honest and selfless actions. On the opposite, according to Lee & Whitford (2008) the theory of agency exaggerates the possibility for opportunism shirking responsibilities, and the laziness or reluctance associated with the problem of moral hazard. These ideas inherent in the theory of trust can be summarized in two (Cuevas-Rodríguez et al., 2012): a) The better the climate of trust between investor and entrepreneur the greater the relationship between them; b) The better the climate of trust between investor and entrepreneur the lower the conflict of interest between them.

The investors-entrepreneurs relationship has been widely research for venture capital or business angel either using theory of agency (Arthurs & Busenitz, 2003; Bitler & Moskowitz, 2005; Kaplan & Strömberg, 2003; Landström, 1992; Mason & Stark, 2004; Randøy & Goel, 2003; van Osnabrugge, 2000) or trust theory (Becerra & Gupta, 1999; Bottazzi et al., 2016; Glaeser, Laibson, Sheinkman, & Soutter, 2000; Manigart, Korsgaard, Folger, Sapienza, & Baeyens, 2002; Rempel et al., 1985; Sheperd & Zacharakis, 2001). However little has being done in regarding theory of agency and theory of trust together in dealing with the investor-entrepreneur relationship in crowdfunding (Gerber & Hui, 2013; Ley & Weaven, 2011; Zhang, 2012; Zheng, Hung, Qi, & Xu, 2016). Among many authors, Landström (1992) stated that the relationship between parties is highly personal and infused with trust, calling into question the inherently negative assumptions about people upon which the agency theory is based. Entrepreneur and business angels or venture capital need to balance the level of control and trust building mechanisms so that the optimal level of confidence in partner co-operation can be achieved (Sheperd & Zacharakis, 2001). It can be stated that contracts or similar control mechanisms are not the only way to reduce the opportunistic behavior of entrepreneurs and that it is also important to consider the level of trust among investors, entrepreneurs and crowdfunding platforms.

Control and trust can be considered as substitutes, since trust implies the exclusion of deliberate control over the behavior of others. When it is possible to fully trust a partner, there is no need to control the partner's behavior. Control comes into play only when adequate trust is not present. Monitoring and controlling a venture is time-consuming for the investor (Gifford, 1997), however, and therefore costly. Investors will be willing to diminish deliberate control only if they trust entrepreneurs to behave in their best interests or if there is a mechanism controlling entrepreneurs without the need of the investors. Therefore, in this view, it is argued that the more the investor trusts the entrepreneur, the lower will be the number of contractual clauses in the contract (Manigart et al., 2002). This argument is reinforced by Bottazzi et al. (2016) who stated that higher trust facilitates the matching process between the investor and the entrepreneur.

The crowdfunding platforms connect investors with excess of capital and entrepreneurs in need of capital (Mitra, 2012; Mollick, 2014). Investors can purchase stocks of companies using a web service provided by the crowdfunding platforms. Such a process could not have been done without the improvement in the online shopping systems. In the case of the crowdfunding phenomenon, provides the opportunity to the investor to purchase stocks without the need to interview with the entrepreneur, visit the company's facilities or to contact a broker house that intermediate in the stock transaction (Belleflamme et al., 2014; E. Lee & Lee, 2012; Liu & Sutanto, 2012; Mollick, 2014). The investors that purchase stocks through the crowdfunding platforms experience the same problems like those acquiring goods and services. While the customers can solve the shopping problems by using some advantages of the Internet such as comparing the goods and getting some recommendations (Dabholkar & Sheng, 2012), investors can compare companies information and get feedback from other investors through recommendations. Electronic commerce has led to a new era of trading online all over the world. Kim, Chung, & Lee (2011) indicate that navigation functionality and perceived security had a significant positive effect on trust. In the same line, Eid (2011) states that the consumer's perception of trust will be higher if the security, lowering the risk of fraud, is ensured by the Internet sites. Web tools allow to track online activities, collect data and store information about consumers, diminishing the general public's privacy because the data is no longer private (Hoffman et al., 1999; Miyazaki & Fernandez, 2011; Nepomuceno, Laroche, & Richard, 2014). In that sense, many researches have argued that trust on the web services providers has a great impact on their motives to purchase goods or services online and the buying decision process (Dabholkar & Sheng, 2012; Eid, 2011; Köksal & Penez, 2015) as in the case of investing in shares using equity crowdfunding platforms.

Trust and agency mechanism are two concepts that coexist and co-evolve, sometimes trust prevails, sometimes the control mechanisms prevail, and sometimes trust and control complement each other (Welter, 2012). Thus, the empirical analysis developed in this last chapter can be

expanded in order to build a model for the equity crowdfunding phenomenon including the theory of agency. Including both, trust and agency constructs, can reflect the more complex interactions when that occur when there is an information asymmetry between investors (principals) and entrepreneurs (agents).

5.3. THE TRUST-AGENCY CROWDFUNDING MODEL

In this paper, we built our trust-agency crowdfunding model with two complementary integrative models proposed by Mayer et al. (1995) and modified by Mcknight, Cummings, & Chervany (1998) for trust constructs, and build on the research proposed by Ley & Weaven (2011), Mason & Stark (2004), and van Osnabrugge (2000) for agency constructs. We hypothesize that the crowd composition includes investors with specific factors, characteristics and knowledge. Therefore, the crowd would consist of an informed group of investors or at least investors who would intend to grasp as much information as possible before making a decision to invest in an equity crowd-funded project.

5.3.1. The trust constructs

Mayer et al. (1995) include the most common trust types: trusting intentions, trusting beliefs and disposition to trust. The model was chosen because it comprises different levels of measurement variables. Mcknight et al. (1998) suggested that perceptions on specific *trusting beliefs* (in our case trusting beliefs in equity crowdfunding project) lead to the intention to engage in trust-related behavior with a specific attribute (in our model the intention to invest in a specific equity crowdfunding project). Finally, not only every investor has a particular trusting belief but it has also an innate attribute that is the propensity to trust others, in our model disposition to trust, which can shape the investor's trusting belief and influence the intention to invest in a specific equity crowdfunding project.

Disposition to trust is the extent to which a person displays a tendency to be willing to depend on others across a broad spectrum of situations and persons (McKnight et al., 2002). This propensity to trust others will influence the investor's decision whether to invest money in an equity crowdfunding project. Investors will vary their propensity to trust others depending on their different knowledge, experiences, personalities, behaviors and backgrounds. In the crowdfunding phenomenon context, trusting beliefs are the confident trust perception that the entrepreneur and her project have attributes that are beneficial to the investor. Even though, (McKnight et al., 2002, 1998) identified that in the literature exist many types of trust attributes, Bhattacharjee (2002), Hoffman et al. (1999), and Mayer et al. (1995) determined that three trusting beliefs are utilized most often: *Competence* or ability of the entrepreneur to do what the investor needs; *integrity* or

entrepreneur honesty and promise keeping; and *benevolence* or the entrepreneur's caring and motivations to act in the investor's interest.

5.3.2. The agency constructs

Authors adopting an agency theoretical perspective investigated the necessary agency-control mechanism in an entrepreneur-investor relationship (Ley & Weaven, 2011; Mason & Stark, 2004; van Osnabrugge, 2000). Agency dynamics for start-up financing in business angel or venture capitalist investment (Mason & Stark, 2004; van Osnabrugge, 2000) and in crowdfunding models (Ley & Weaven, 2011) comprise a combination of ex-ante and ex-post investment factors that will be explained in the following lines.

Literature suggests that the entrepreneur's opportunistic behavior could be controlled or minimized before or after the investment is accomplished. Investor can perform an ex-ante quantitative or qualitative analysis to assess the risk and potential rewards of a given equity crowdfunding project. Investors not only analyze companies prior to money allocation but also monitor and control their investments after the deal has been made. The ex-ante investments criteria found in the literature (Ley & Weaven, 2011; Mason & Stark, 2004; van Osnabrugge, 2000) adapted to the crowdfunding environment is divided in four sections: Deal screening; deal referrals from knowledgeable and objectives sources; crowdfunding structure and deal of information sensitivity; and implementation of due diligence provision in crowdfunding.

Deal screening would ensure that the crowdfunding investment was appropriately managed. Ley & Weaven, (2011) state that crowdfunding models would require specific deal screening criteria in order to minimize agency costs associated with adverse selection problems. In this context, adverse selection might exist when an entrepreneur has an information advantage and use it opportunistically to ensure investment (Amit, Brander, & Zott, 1998). According to Ahlers et al. (2015), screening may serve to assist in controlling agency problems and costs but it would not guarantee appropriate investment selection due to the likely diverse nature, that is associated levels of business experience, of the online crowd.

Deals referrals may help minimize deal-noise and secure that investor is making quality investment decisions (Sorenson & Stuart, 2001). Professional or sophisticated investors like venture capital or business angels can provide validation (Mason & Stark, 2004; van Osnabrugge, 2000) of many entrepreneurial projects searching for equity backers. The agency dilemmas of moral hazard and adverse selection could be controlled upon input from these qualified external investment agents if they invest in equity crowdfunding projects or if investor professionals make positive comments about a specific project or entrepreneur's capabilities.

The crowdfunding structure and deal information sensitivity refers to the fact that only information already protected by patents or publicly available would be distributed to a crowd of investors. Ley & Weaven (2011) stated that investors would need access to sensitive information regarding a potential investment in order to conduct adequate ex-ante analysis prior to the investment decision. According to Fried & Hisrich (1995) the disclosure of sensitive information may be detrimental to the success of an investee company. However, being acquainted with sensitive information can reduce the level of information asymmetry.

Crowdfunding investors should implement their own due diligence to ensure that they make informed investments (Mason & Stark, 2004; van Osnabrugge, 2000). However, due diligences would be unlikely to be taken given that in early stages of venture creations the information needed is often qualitative in nature and would need to trust the information disclosed by the entrepreneur and populate by the crowdfunding platform (Ley & Weaven, 2011). The lack of adequate quantitative or sensitive information can enhance the entrepreneur's opportunistic behavior in detriment of the investor.

The ex-post investment criteria found in the literature (van Osnabrugge, 2000; Mason, 2004; and Ley et al., 2011) are divided in four groups: Potential future rewards; monitor operating business board representatives; exit options. Mason & Stark (2004) found that investors place the greatest emphasis both on the growth potential of the opportunity and on the entrepreneur(s)' capability to realize that potential. However there is distinction among different type of investors and their motivation to analyze potential future rewards. Venture capitals are return-driven and therefore their primary objective is to deliver high returns to their limited partners whose funds they manage (Mason & Harrison, 2002a; van Osnabrugge, 2000). Business angel investors regularly allocate their own money and consider capital gains as their main motivation to invest (Mason & Stark, 2004; van Osnabrugge, 2000). Venture capital are more likely to place more emphasis on the financials and make returns calculations (Dixon, 1991; Wright & Robbie, 1996) than business angels who would give greater emphasis to subjective factors and gut instinct. Equity crowdfunding investors could be either non-professional or professional, therefore it is expected that crowdfunding investors are return-driven as well as capital-gain focused.

According to Van Osnabrugge (2000), venture capitalists conduct a more rigorous and more lengthy negotiations than business angels and strengthen their authority position by formulating thorough contracts with the entrepreneur. Venture capitalists regularly form better contract, invest larger amounts, have larger equity stakes and have the contract option to replace entrepreneurs. Gompers (1995) added that the contract control mechanisms are not enough to monitor the

operating business but that also the continuing preparation to get capital injections allows venture capitalists to gather information and monitor the progress of firms keeping the option to periodically abandon projects or exercise the option to replace the entrepreneur.

Board involvement tend to have a positive impact upon firm performance in invested firms (Fried, Bruton, & Hisrich, 1998). The board of director's most important function is to approve management's recommendations about future direction of companies (Rosenstein, Bruno, Bygrave, & Taylor, 1993). The board representatives are important to monitor and control that the decisions made by the entrepreneur are the most appropriate according to the firm strategic future (Fried et al., 1998; Rosenstein et al., 1993) reducing in this way the entrepreneur's opportunistic behavior. Board representation in crowdfunding would facilitate time decision-making thus safeguarding the crowd's investment.

Exit is the process by which investors liquidate the return on their investment after a certain period of time, typically between three to seven years (Black & Gilson, 1998). The potential exit opportunity play an important role in an investor's decision about whether or not to allocate money in a company (Black & Gilson, 1998; Mason & Harrison, 2002b). This is the reason why exits receive attention from the earliest stages of the deal. Nooteboom, (1999) identified four forms of exiting an investment: First, initial public offering (IPO) is the method whereby the company's share get listed on the stock market for the first time, it is when the investor will be able to sell its share to the public; Second, trade sale is when the investor sells all of its shares held in a company to a third party; Third, secondary buyout, it happens when the private investor sells to another private investor; Fourth, leverage recapitalization is a partial exit method where the company buyback the private investor shares in the same company using debt. Exit options in crowdfunding could be useful when: Exit-funding option could be reached quickly and would be most appropriate for start-up ventures that could reach market commercialization of their products in a relatively short period of time; Investors could hold out the stake in the company in the hope of receiving higher returns; or, an intermediary could engage a set of appropriate exit options as the ones explained above.

The agency supporters (Ley & Weaven, 2011; Mason & Stark, 2004; van Osnabrugge, 2000) emphasize that specialized and informed investor with some expertise in the industry is associated with a reduction in the entrepreneur's informational advantage also known as the agency dilemma. These authors concluded that the crowdfunding environments could be sending the wrong signals to the investors what would result in negative perceptions of the credibility of the crowdfunding model. In order to reduce the asymmetry of information, the opportunistic behavior, moral hazard and adverse selection the investor can analyze or require additional

information prior (ex-ante) or later (ex-post) the investment has been made that would be canalize through the equity crowdfunding platforms. Figure 2 summarizes the necessary agency mechanism to make a decision to invest in the equity crowdfunding platforms, what we consider to be trusting intention in our model.

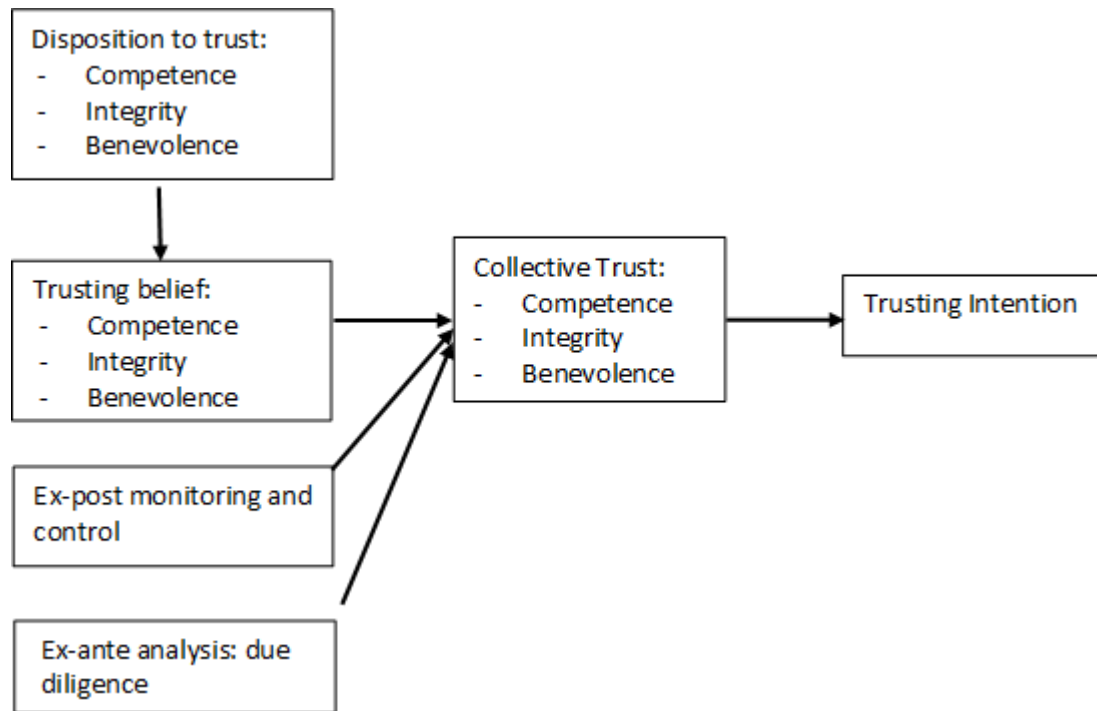
5.3.3. The trust-agency crowdfunding model proposed

Trusting beliefs and *disposition to trust* are constructs that measure the intention to trust at the personal level which in turn is based on relations on the micro level such that embedded emotions, intentions, goodwill, competencies, personal integrity and benevolence (Welter & Smallbone, 2006, 2011). However, it is not only the personal level of trust what makes the investor to decide whether to invest or not in a company. The crowdfunding platforms play an important role in attracting a large community of investors and entrepreneurs, designing the market to attract high-quality projects, reducing fraud, and facilitating an efficient matching between ideas and capital (Belleflamme et al., 2014; Mollick, 2014).

Despite individual investors have a much smaller stake and less incentive to spend money and time investigating entrepreneurs than traditional investors (venture capitals or business angels), there is a large quantity of crowd investors. Therefore many of them could review any given project, thus enabling a variety of perspectives in order to notice something amiss (Agrawal et al., 2013). This promising results in *due diligence, monitoring and control* could only be possible when the investors find a place where they can share their opinions, recommendations or information related to an equity project. The crowdfunding platforms provide such a meeting place where investor can exchange information about a particular crowdfunding project. The more information an investor can gather from the crowdfunding ecosystem to perform her/his *due diligence* the higher the intention to trust the crowdfunding project, which final decision will determine the investment in the project under analysis.

According to Welter & Smallbone (2011), the equity crowdfunding platform could be consider the mediator where a community or an organization share their interest in common not only for trust purposes but also to create a control and monitoring mechanism in order to reduce the potential opportunist behavior of the entrepreneur. This community or organization, the equity crowdfunding platform, falls in the form of collective trust and the meso level described by Welter & Smallbone (2006, 2011). The final model (see Figure 5.1) comprises the trust model and the agency model being mediated with the *collective trust*. Therefore:

Figure 5.1 Proposed trust-agency model in equity crowdfunding



Adapted from: Mayer et al. (1995); Mcknight et al. (1998); Ley & Weaven (2011); C. Mason & Stark (2004); van Osnabrugge (2000)

The model entails the following hypothesis:

- H1.** There is a positive relationship between disposition to trust and trusting belief.
- H2.** There is a positive relationship between trusting belief and trusting intentions.
- H3.** There is a positive relationship between ex-ante analysis and trusting intention.
- H4.** There is a positive relationship between ex-post monitoring and control, and trusting intention.
- H5.** Collective trust is a mediator between the trust constructs and trusting intentions.
- H6.** Collective trust is a mediator between the agency constructs and trusting intentions.

5.4. METHODOLOGY

5.4.1. Survey and data collection

A five-point scale was employed to collect data for the constructs of the research model, being 1=strongly disagree, 2=strongly disagree, 3=neither disagree nor agree, 4=strongly agree and 5=strongly agree. The sample of investors was gathered from four different forum groups on LinkedIn related to equity crowdfunding across three countries: Germany, Netherlands and Spain. We got 311 responses but only the responses of the participant that answered all the questions and that live in any of the three countries under research were taken into account summing up a total of 242 valid survey responses. 45,012 members were collectively asked to answer our online survey. The number of answers constitutes a statistically significant sample with a confidence of

90%, maximum indetermination $p=q=0.5$, and error margin of 6%. A Chi-square and F-exact test was used in order to determine the homogeneity of the sample in the three different countries of residence (Appendix 6).

The survey was developed and conducted online through an online survey development cloud-based software that allowed us to reach investors from different geographical regions and targeting a much wider collectivity. Previous research showed that it was difficult to identify investors (Harrison & Mason, 1992; Landström, 1993; Wetzel, 1983) and that investors tend to be reluctant to participate in a study because they prefer to remain anonymous (Erikson et al., 2003). In order to obtain the responses a large-scale distribution of questionnaires to individuals assumed to be investors was used through four different groups in LinkedIn. This professional platform allows to post comments, news, and any kind of information that helps to identify the equity crowdfunding investors. A post with the objectives of the study with a link to the survey was created for each group in LinkedIn. After identifying the investors, an InMail was sent with the link to the questionnaires.

Table 5.1 summarizes the sample demographics that includes the numbers of participant in the survey (242) and the percentage represented per descriptor. According to our results, a typical investor in equity crowdfunding is male, aged between 36 and 45, with at least an undergraduate degree, and has a household income of under €50,000.

Table 5.1 Investors’ demographics

Variable	Participants	%	Variable	Participants	%
Observations	242		Education		
Gender			Trade/technical/vocational	28	12%
Female	39	16%	Undergraduate degree	117	48%
Male	203	84%	Graduate degree	97	40%
Age			Household income		
18-25	23	10%	under €30,000	111	46%
26-35	75	31%	€30,001 and €50,000	69	29%
36-45	78	32%	€50,001 and €100,000	35	14%
46-55	64	26%	€100,000 or more	27	11%
56-65+	2	1%			

5.4.2. Scale development

Trust has been conceptualized including different concepts as a belief, attitude, intention, and behavior (Mayer et al., 1995; McKnight et al., 2002). Trust is considered as a psychological state clearly distinct from, but antecedent to, behavior (Mayer et al., 1995). The definition of trust as

willingness to take risks seems to view trust as an intention; however, the underlying dimensions of trust portray trust as a collection of beliefs (Rempel et al., 1985) such as, benevolence, honesty, confidence, and so on. *Trust beliefs* refer to the trustor's perceptions of trustee attributes that may influence trustee's behavior. Although attitude reflects human affect, beliefs may include both cognitive and affective components, and therefore, trust beliefs represent a more holistic conception of trust. Hence, trust can be viewed as an aggregation of beliefs according to Bhattacharjee (2002).

Trusting belief (TB) and *disposition to trust* (DT) items –*competence* (C), *integrity* (I) and *benevolence* (B)- were adapted from scales reviewed and summarized in Rempel et al. (1985) and McKnight et al. (2002). In selecting the item, it was tried to capture the aspects of the beliefs that were most relevant for the crowdfunding context. For *competence*, it was measure the perceptions of how well the entrepreneur did her job or how knowledgeable the entrepreneur was regarding his expertise and ability. Thus, for *integrity*, it was captured perceptions of the entrepreneur honesty, trustfulness, sincerity, and keeping commitment. Finally, the *benevolence* items focused on the entrepreneur acting in the investor's best interest, trying to help, and being genuinely concerned.

In order to operationalize the crowdfunding agency dynamics, we used the findings captured by Ley & Weaven (2011) that identified what *ex-ante* (SP) and *ex-post monitoring and control mechanisms* (MC) are required to ensure an appropriate application of crowdfunding models in start-up financing. The findings provided by Ley & Weaven (2011) were complemented with the studies of van Osnabrugge (2000) and Arthurs & Busenitz (2003) that provided a detailed comparison of the investment criteria and procedures of business angels and venture capitalists across the full investment process for which they adopted the theoretical base of agency theory.

We developed the *collective trust* (CT) items by adapting the experimental case created by Garfinkel, (1963). Therefore the *collective trust* items to capture the same three dimensions as for *trusting belief* and *disposition to trust: competence, integrity and benevolence*. We wanted to reflect the perceptions about the equity crowdfunding platform in general rather than a specific equity crowdfunding platform.

For *trusting intentions* (TI), we operationalize the trust construct with 3 items that were adapted to the scales proposed by Bhattacharjee (2002) and McKnight et al. (2002). While Bhattacharjee (2002) transformed negative wording items into positive and used a unique item to assess the overall trust, McKnight et al. (2002, p. 9) emphasized terms like “safeguards”, “protect” and “robust”. The questionnaire with all the questions can be seen in Appendix 7.

5.4.3. Analysis

Partial least square (PLS) is sometimes referred as component-based structural equation modeling (SEM) or simply PLS-SEM. PLS-SEM is a causal modelling statistical approach with an aim to maximize explained variance of dependent latent variables. (Chin, 1998b; Hair, Ringle, & Sarstedt, 2011). PLS is considered a robust structural equation modelling approach (Hair Jr., Sarstedt, Hopkins, & G. Kuppelwieser, 2014) unlike covariance-based SEM provided by AMOS and LISREAL, PLS-SEM does not put emphasis on normality of data distribution (Ringle, Sarstedt, & Straub, 2012), which allows researchers to use their raw data in the analysis without having to transform their data to a normal distribution before running SEM. The violation of normality assumption can produce unintended biases in the final statistics results or no solution at all (Fornell & Bookstein, 1982). After running the model with AMOS 24.0 no results were found, we opted for PLS-SEM to alleviate two serious issues with covariance-based SEM: improper solutions and factor indeterminacy (Fornell & Bookstein, 1982).

5.4.4. Preliminary data analysis

Before an analysis can be performed, it is recommendable to run a preliminary data analysis (PDA). PDA is advisable to ensure that the data set does not include substantial noise that attracts biases in the final results of the actual analysis. First, Hair Jr et al. (2014) suggested that if Likert scales are being used the scales should be symmetric and equidistant in order to be used in SEM, our data incorporates this suggestion by using a five-point Likert scale. Second, Barclay, Higgins, & Thompson (1995) stated that sample size is important in PLS-SEM analysis and that researchers should run an Ordinary Least Square (OLS) regression principles to measure the minimum sample size requirement based on the number of arrows pointing to a construct and the significance level. Hair Jr et al. (2014) advised the optimal sample size for a 10-indicator-variable at a 1% of significance is between 54 and 256 observations when the R^2 is between 0.10 and 0.75. Our data achieve the requirement of the sample size. Third, Geladi & Kowalski (1986) recommended to take into account the number of missing values per observation and that this should not exceed 15% of the total sample. The data obtained from the survey was cleared from any missing value.

5.4.5. Measurement model and assessment criteria

The measurement model shows the relationship between the constructs and their corresponding indicator variables. Hypothesis testing is reliable and valid when the measurement model justifies how the constructs are measured. Authors (Bollen & Lennox, 1991; Borsboom, Mellenbergh, & van Heerden, 2003; Churchill, 1979; Coltman, Devinney, Midgley, & Venaik, 2008;

Diamantopoulos, 2006; Nunnally, J. C., e Bernstein, 1994) have suggested that the use of incorrect measurement model undermines the content validity of constructs, misrepresents the structural relationships between them, and ultimately reduce the usefulness of management theories for business researchers and practitioners. Coltman, Devinney, Midgley, & Venaik (2008b) suggested three important considerations in deciding if the measurement model is either formative or reflective: i) the nature of the construct; ii) the direction of causality between indicators and the latent constructs; iii) the characteristics of the indicators used to measure the construct. Consideration 1: in a reflective model, the latent construct exists independent of the measures while in a formative model, the latent construct depends on constructivist, operationalist or instrumentalist interpretation by the scholar (Borsboom et al., 2003). Consideration 2: reflective models assume that causality flows from the construct to the indicators while in formative models causality flows from indicators to the constructs (Bollen & Lennox, 1991), the difference in causal direction has profound implications for measurement error and model estimation (Diamantopoulos, 2006). Consideration 3: Inclusion or exclusion of one or more indicators from the domain does not materially alter the content validity of the construct in a reflective model however in a formative model adding or removing an indicator can change the conceptual domain of the construct significantly (Churchil, 1979; Coltman et al., 2008; Nunnally, J. C., e Bernstein, 1994).

In this study, we developed the latent constructs for the measurement model based on theoretical framework of trust and agency. We expect the trust latent variables (disposition to trust, trusting belief, collective trust and trusting intentions) to be composed of independent but correlated indicators therefore behave as in a reflective causal structure (Borsboom et al., 2003). In the opposite way, we assume that the agency latent constructs (ex-ante analysis and ex-post monitoring and control) to be composed of independent but not necessarily highly correlated indicators to behave as in a formative causal structure (Becker, Klein, & Wetzels, 2012). Coltman et al. (2008) added to our assumption that the reflective view dominates the psychological and management sciences and the formative view is common in economics and sociology.

The analysis and interpretation of the results is a two-step process (Hair, Joseph F., 2009). For the first step, we assess the reliability and validity of the two types of measurement model: Formative and reflective. The analysis of reflective measurement models includes three tests: i) internal consistency with a Cronbach's Alpha and composite reliability (Fornell & Bookstein, 1982; Hair, Joseph F., 2009; Urbach & Ahlemann, 2010), ii) convergent validity with outer loading and average variance extracted (AVE) (Hair, Joseph F., 2009; Urbach & Ahlemann, 2010), and iii) discriminant validity where the square root of each construct's AVE must be higher than its correlation with other constructs (Hair, Joseph F., 2009) . The analysis of the formative

measurement model includes three assessments (Becker et al., 2012; Coltman et al., 2008): i) content validity (Becker et al., 2012; Coltman et al., 2008), ii) collinearity with variance inflation factor (VIF) (Hair, Joseph F., 2009; Kock & Lynn, 2012), and iii) bootstrapping (Hair et al., 2011). Table 5.2 summarizes the measurement model and assessment criterion.

Table 5.2 Measurement model and assessment criterion

Assessment	Criterion	Threshold	Reference
Item reliability	Outer loading of reflective indicators	>0.5	(Hair, Joseph F., 2009)
	Loadings with sig. p-value	p-value < .05	(Gefen & Straub, 2005)
Internal consistency	Cronbach's alpha	>.70	(Hair, Joseph F., 2009; Urbach & Ahlemann, 2010)
	Variance inflation Factor (VIF)	<10 <5	(Joseph F. Hair, 2010;) (Kock & Lynn, 2012)
Convergent validity	Composite reliability	>.70	(Fornell & Bookstein, 1982; Hair, Joseph F., 2009)
	Average Variance Extracted (AVE)	>.50	(Hair, Joseph F., 2009; Urbach & Ahlemann, 2010)
Discriminant validity	Square-root of AVE	More than the correlations of the latent variables	(Hair, Joseph F., 2009)
Nature of construct	Formative/ reflective	Look for Simpson's paradox indication	(Coltman et al., 2008)
Bootstrapping	Formative measurement model	t-values for a two-tailored test at 1.65, 1.96 and 2.58 for p-value p<.10, <.05, <.01 respectively	(Hair et al., 2011)

5.4.6. Structural model

After the measurement model is found to be satisfactory, the structural model parameter estimates can be used for analysis and interpretation. The results of the structural model will represent how the data supports the path model. The first step is to review the collinearity between each set of predictor variables with VIF level than 5.00 (Hair, Joseph F., 2009; Kock & Lynn, 2012). The second step is to calculate the path coefficients and determine the negative -1 or positive +1 relationship among the constructs. The significance level for the path coefficients have to be reviewed and report p-values. The third step is to evaluate the model predictively though coefficient of determination, R^2 (Chin, 1998b) and adjusted R^2 , predictive relevance, Q^2 (Geisser, 1975; Stone, 1973), (Geisser, 1975; Stone, 1973), effect size, f^2 (Cohen, 1988) and path coefficients (Hair, Joseph F., 2009). Table 5.3 summarizes the structural model criterion.

Table 5.3 Structural model criterion

Criterion	Threshold	Reference
Coefficient of determination, R ²	.67 substantial .33 average .19 weak	(Chin, 1998a)
Predictive relevance, Q ²	>0 Stone-Geisser test	(Geisser, 1975; Stone, 1973)
Effect size, f ²	.14 small .39 medium .59 large	(Cohen, 1988)
Path coefficients	p-value<.05	(Hair, Joseph F., 2009)

5.4.7. Mediation

A given variable B is defined as a mediator between two other variables A and C when the following conditions are met: i) an independent variable A is significantly associated with a dependent variable C, ii) an independent variable A is significantly associated with a variable B, iii) variable B is significantly associated with the dependent variable C, and iv) the impact of A on C is significantly less after controlling for B (Baron & Kenny, 1986; D. J. Cumming & MacIntosh, 2006). In our equity crowdfunding model we will run separately the latent variable *collective trust* as a mediator between the *trust constructs* and *trusting intention* and between the *agency constructs* and *trusting intention*. We run a bootstrapping to obtain the beta coefficients of the independent variable and dependent variable with not mediation of the indirect variable *collective trust*. Later, we run the bootstrapping to obtain the beta coefficients and standard deviations from the *trust and agency independent variables* to the *collective trust indirect variable* and from the *collective trust indirect variable* to the *trusting intentions dependent variable*. Finally, we calculate a Sobel test statistics for a two-tailed probability values.

5.5. RESULTS

WarpPLS 5.0 and SmartPLS 3.2.6 were used to assess the results of reflective and formative measurement models, structural model and mediation. The software provide users with a wide range of features, several which are not available from other SEM software like the possibility to identify nonlinear functions connecting pairs of latent variables in SEM models and calculate multivariate coefficients of association accordingly (Kock, 2002).

5.5.1. Measurement model analysis

We started the evaluation of the measurement with the latent variables and indicators that could fall under the formative model considerations 1 and 3 of Coltman, Devinney, Midgley, & Venaik (2008b) who stated that in a formative model the latent construct depends on constructivist, operationalist or instrumentalist interpretation by the scholar and that in a formative model adding or removing an indicator can change the conceptual domain of the construct significantly. Second step is to proceed with the evaluation of the VIF values for all the indicators are below the

threshold value of 5. Third, bootstrapping the latent variable indicators to understand its significance and relevance. Appendix 8 shows the result for the VIF with many of the indicators being close and above the threshold of 5 what is a clear indicator of collinearity. We then run the bootstrapping in order to determine the relevance of the indicators and we found that in the majority of the indicators were not significant for a formative model. *A priori*, our measurement model for the agency latent construct could sound to be formative; however, we find that even though the indicators are independent variables they are correlated i.e. taking the indicators SP2 (I conduct my own business research -due diligence- before I invest) and SP3 (I met the entrepreneurs before investing) are independent indicators however they might be some investors that find relevant of their due diligence to meet the entrepreneur. Therefore, we conclude that our model is reflective.

The reflective measurement model evaluation is shown in Table 5.4, showing both the unrotated loading and oblique rotated cross-loadings for each of the indicators belonging to each of its latent constructs. Standard errors (SEs) and p-values are calculated for each indicator. All indicators passed the threshold of the loading being higher than ≥ 0.5 with a p-value < 0.001 except SP1 = 0.284 and MC8 = 0.472. We measured the model again without these two variables (SP1 and MC8) obtaining similar results on internal consistency and convergent validity, we decided to keep them in our final model. Table 5.4 summarizes the results of internal consistency tests of the latent construct (Cronbach's alphas) and convergent validity (composite reliability and AVE). Cronbach's alphas for each of the latent variables are higher than > 0.70 explaining that the set of indicators are closely related to its correspondent latent variable. Composite reliability for each of the latent variables is higher than 0.70 with values above 0.882 that is in the range of satisfactory results. Furthermore, AVE is higher than 0.50 except trusting belief latent variable with a value of 0.454. We decided to keep the latent variable trusting belief after we assessed that each of the items exceed the test for individual reliability threshold and also exceed the Cronbach's alpha and composite reliability test threshold, our result was closed to the 0.5 AVE threshold and exceeds substantially all the other test of the also. Finally, discriminant validity is shown in Table 5.5. The results confirm that all latent variables exceed the threshold with squared-root of AVE higher than the correlation of the latent variables in the reflective model.

Table 5.4 Reflective measurement model evaluation

Latent variable	Indicator	Internal consistency			Convergent Validity		Discriminant validity
		Item Reliability		Cronbach's alphas (α)	Compsite reliability (CR)	AVE	
		Outer loading (OL)	Indicator reliability				
Disposition to trust	DTC1	0.747	<0.001	0.886	0.909	0.526	Yes
	DTC2	0.740	<0.001				
	DTC3	0.703	<0.001				
	DTI1	0.795	<0.001				
	DTI2	0.629	<0.001				
	DTI3	0.745	<0.001				
	DTB1	0.764	<0.001				
	DTB2	0.714	<0.001				
DTB3	0.676	<0.001					
Trusting belief	TBC1	0.737	<0.001	0.879	0.901	0.454	Yes
	TBC2	0.654	<0.001				
	TBC3	0.673	<0.001				
	TBC4	0.654	<0.001				
	TBI1	0.669	<0.001				
	TBI2	0.695	<0.001				
	TBI3	0.627	<0.001				
	TBI4	0.714	<0.001				
	TBB1	0.740	<0.001				
	TBB2	0.654	<0.001				
TBB3	0.572	<0.001					
Collective Trust	CTC1	0.767	<0.001	0.904	0.922	0.568	Yes
	CTC2	0.788	<0.001				
	CTC3	0.750	<0.001				
	CTI1	0.829	<0.001				
	CTI2	0.759	<0.001				
	CTI3	0.772	<0.001				
	CTB1	0.682	<0.001				
	CTB2	0.741	<0.001				
CTB3	0.686	<0.001					
Trusting Intention	TRUST1	0.864	<0.001	0.798	0.882	0.713	Yes
	TRUST2	0.809	<0.001				
	TRUST3	0.859	<0.001				
Exante due diligence	SP1	0.284	<0.001	0.923	0.936	0.505	Yes
	SP2	0.748	<0.001				
	SP3	0.672	<0.001				
	SP4	0.789	<0.001				
	SP5	0.859	<0.001				
	SP6	0.828	<0.001				
	SP7	0.878	<0.001				
	SP8	0.856	<0.001				
	SP9	0.858	<0.001				
	SP10	0.748	<0.001				
	SP11	0.561	<0.001				
	SP12	0.559	<0.001				
	SP13	0.653	<0.001				
	SP14	0.533	<0.001				
	SP15	0.551	<0.001				
Expost monitoring and control	MC1	0.860	<0.001	0.914	0.932	0.637	Yes
	MC2	0.847	<0.001				
	MC3	0.873	<0.001				
	MC4	0.849	<0.001				
	MC5	0.869	<0.001				
	MC6	0.832	<0.001				
	MC7	0.695	<0.001				
	MC8	0.472	<0.001				
Threshold		OL>0.5		$\alpha > .70$	CR > .70	AVE > .50	

Table 5.5 Discriminant validity

	DT	TB	EXANTE	EXPOST	CT	TI	Discriminant Validity
DT	0.725*						Established
TB	0.666	0.673*					Established
EXANTE	0.190	0.260	0.711*				Established
EXPOST	0.090	0.247	0.604	0.798*			Established
CT	0.292	0.377	0.406	0.471	0.754*		Established
TI	0.371	0.357	0.413	0.280	0.674	0.844*	Established

*Squared-root of AVE higher than the correlation

5.5.2. Structural model

Our first step is to check for signs of collinearity amount the latent variables, i.e. Trusting Intentions, Collective Trust, Disposition to Trust, Trusting Beliefs, Ex-post Monitoring and Control, and Ex –ante Due Diligence. Table 5.6 summarizes the VIF values calculated for each of the latent variables. For all constructs VIF values are below the threshold, so we can conclude that collinearity is not an issue for estimation of the PLS path model.

Table 5.6 Variance inflation factor

Latent Variables	VIF	Internal consistency
TI	2.086	Established
CT	2.228	Established
DT	1.914	Established
TB	1.973	Established
EXPOST	1.844	Established
EXANTE	1.762	Established
Criterion	VIF<5	

We examined the model prediction with R^2 and adjusted R^2 for each of the relationships in the model. According to the literature, values falling between 0.33 and 0.66 could be considered of average predictive accuracy. Since in our case R^2 for TI = 0.483, CT = 0.351 and TB = 0.510, and adjusted R^2 for TI = 0.481, CT = 0.343 and TB = 0.508, we can conclude that the results obtained can be considered moderate. Q^2 is larger than zero for each of the endogenous latent variables, indicating the path model’s predictive relevance for this particular construct. Effect size (f^2) is large and significant only for the latent variables TI = 0.962 and TB = 0.905. Finally, path coefficients are calculated and we found that all relationships between constructs in the model are significant and that we can consider them strong relationships. These results suggest the importance of the trust and agency factors for investors when deciding to use a crowdfunding platform to invest in equity crowdfunding. Table 5.7 summarizes the structural model examination criteria.

Table 5.7 Structural model criteria results

Criterion	R ²	Adj. R ²	Q ²	f ²	Path coefficients
CT=>TI	0.483	0.481	0.481	0.926***	0.695***
TB=>CT	0.351	0.343	0.355	0.084	0.186***
EXPOST=>CT				0.064	0.391***
EXANTE=>CT				0.055	0.097*
DT=>TB	0.510	0.508	0.506	0.905***	0.714***

Note: NS = * p<.10, **p<.05, ***p<.01

5.5.3. Mediation analysis

We carry on with a Sobel test to find whether there is a mediation effect between the latent construct Collective Trust, which refers to the trust generated by the equity crowdfunding platforms, and the dependent variable, i.e., trust intentions. Results displayed in Table 5.8 show that indeed the latent variable Collective Trust is a good mediator variable between the trust and agency latent constructs at 99% of confidence level.

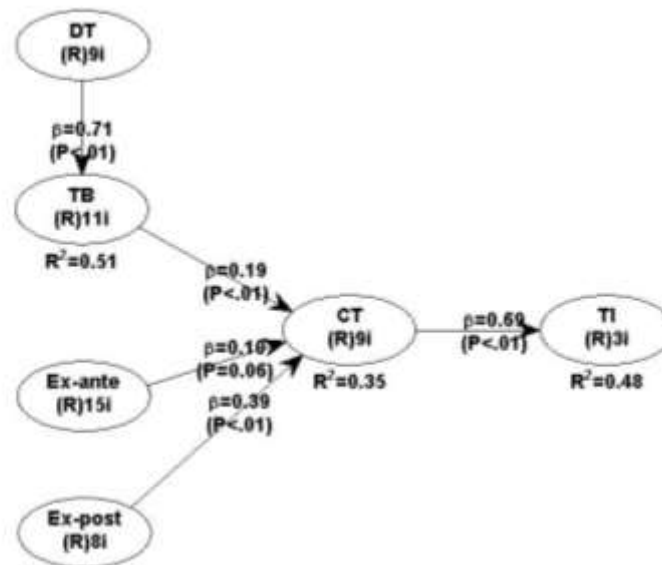
Table 5.8 Mediation latent variables

Mediation	Relations	β no mediator	β with mediator	SE	Sobel test Two-tailed
TB =>CT=>TI	TB =>TI	0.389	0.125		4.713***
	TB =>CT		0.413	0.079	
	CT =>TI		0.633	0.058	
EXANTE =>CT=>TI	EXANTE =>TI	0.440	0.141		6.101***
	EXANTE =>CT		0.485	0.064	
	CT =>TI		0.617	0.060	
EXPOST =>CT=>TI	EXPOST =>TI	0.282	-0.062		5.130***
	EXPOST =>CT		0.469	0.084	
	CT =>TI		0.715	0.055	

Note: ***p<.01

Overall, the criterion calculations for the model proposed can be summarized as follows: R² = 0.483, adjusted R² = 0.483, Q² = 0.481, f²=0.926 and path coefficient = 0.695 at p-value < 0.01. The previous results suggest that the model proposed combining trust and agency latent are good explicators for the decision to invest and the willingness to transact in an equity crowding process. Figure 5.2 summarizes the results of the PLS-SEM path model.

Figure 5.2 Results PLS-SEM path model



5.5.4. Hypothesis testing

Based on the result of PLS-SEM analysis we have identified the effect of the trust and agency latent constructs on the trusting intention to invest in an equity project using an equity crowdfunding platform as mediator or trust amplifier. Trusting intention represents the decision to invest in a risk taking choice like the equity investment in crowdfunding and is explained by two types of constructs: trust constructs and agency constructs.

Regarding the trust latent constructs, disposition to trust and trusting belief, we found enough evidence to say that there is a strong evidence to support **H1**. Indeed, disposition to trust has a positive influence on trusting belief with adjusted $R^2 = 0.510$, $f^2 = 0.905$ and a Path coefficient of 0.714 at a significant level $p < .001$ (Table 5.8). Similarly, we found enough evidence to support our hypothesis **H2**, since we found a positive relationship between trusting belief and trusting intentions with no mediator = 0.389 at p -value $< .001$ (Table 5.8).

Agency hypothesis, **H3** and **H4** were supported at p -value $< .001$. The effect of the ex-ante latent construct on trusting belief was found to have a coefficient $\beta = 0.440$; whereas the effect of the ex-post latent variable on trusting intentions exhibits a $\beta = 0.282$ (Table 5.8).

The collective trust latent variable was found to be a good mediator among the trust and agency constructs and the effect of trusting intentions. Hypothesis **H5**, stating that collective trust should be a mediator between the trust construct and trusting intentions, is supported with a p -value $< .001$. Furthermore, we have established Hypothesis **H6**, since collective trust is found to be a mediator

between the agency constructs and trusting intentions, supported with a p-value<.001 (Table 5.8). Table 5.9 summarizes the hypothesis proposed and the evaluation for each of them.

Table 5.9 Summary of hypotheses and results

Trust hypothesis H1a. There is a positive relationship between disposition to trust and trusting belief. H1b. There is a positive relationship between trusting belief and trusting intentions.	<i>Supported</i> <i>Supported</i>
Agency hypothesis H2a. There is a positive relationship between ex-ante analysis and trusting intention. H2b. There is a positive relationship between ex-post monitoring and control, and trusting intention.	<i>Supported</i> <i>Supported</i>
Mediation hypothesis H3a. Collective trust is a mediator between the trust construct and trusting intentions. H3b. Collective trust is a mediator between the agency constructs and trusting intentions.	<i>Supported</i> <i>Supported</i>

5.6. DISCUSSION AND CONCLUSIONS

We started this paper considering the main concepts of both the theory of agency and the theory of trust. On one side, the theory of agency makes an assumption that entrepreneurs always exhibit opportunistic behavior that reduces the investor’s economic and financial wealth (Cuevas-Rodríguez et al., 2012). On other side, trust literature suggest that entrepreneurs may act honestly without any control mechanism (Granovetter, 1985; Welter & Smallbone, 2011; Zaheer et al., 1998). This two extreme and different theories have been analyzed either only using the agency mechanism to control the entrepreneur’s opportunistic behavior (Ley & Weaven, 2011; Mason & Stark, 2004; van Osnabrugge, 2000) or the trust relation between entrepreneurs and investors (Becerra & Gupta, 2003; Gerber & Hui, 2013; Glaeser et al., 2000). Only few have analyze the trust-agency relationship in the early stages of the investment process (Bottazzi et al., 2016; Manigart et al., 2002). This study intends to analyze the investment decision process of the investor in the equity crowdfunding environment under both the theory of trust and theory of agency.

We found that there is an innate characteristic of the crowdfunding investor to trust the equity crowdfunding ecosystem. However, the decision making process to invest in an equity project has been also shaped by the propensity of the investor to trust the entrepreneur and the equity crowdfunding platforms. This relationship among entrepreneurs and investors is not based purely on trust, since investors also make use of mechanisms that allow them to identify potential flaws and fraud present in certain equity crowdfunding projects. Due diligence to identify ex-ante risks or indicators to monitor and control the entrepreneur after the investment have been done (ex-post) have been tested to have a positive influence on the decision making process.

The equity crowdfunding platforms play an important part in the equity crowdfunding investment process. Investors on crowdfunding platforms are often family, friends and colleagues who invest to support the entrepreneur (Agrawal et al., 2013). Crowdfunding platforms act as an intermediary and formalize what otherwise would be considered as informal finance (S. Lee & Persson, 2016). The crowdfunding platform allows the investor to act as part of a community, actively participating providing opinion, recommendations and suggestions about different products or services, entrepreneurs or projects and companies. For many investors, investing through a crowdfunding platform is a social activity and they allocate capital in the entrepreneurial project because they value the product or service promoted (Schwienbacher & Larralde, 2010). The objective of equity crowdfunding platforms is to maximize the number and size of successful projects by attracting a large community of investors and entrepreneurs, design the market to attract high-quality projects, and facilitate matching between ideas and capital (Agrawal et al., 2013). Therefore, the equity crowdfunding platforms suits the mediation role between the trust and agency construct on the investment decision making process of the investor and the entrepreneurs as proposed in this paper.

Personal trust and collective trust were important constructs in the model proposed in this paper. However, business relationships are also govern by norms, values and codes of conduct inherent within a society (Welter & Smallbone, 2011). Further research for this topic could include institutional or system trust as form in the functioning of the overall social, economic, political, and technological frameworks and its informal rules (Williamson, 2008a; Zucker, 1986).

6. CONCLUSIONS, CONTRIBUTIONS, FURTHER RESEARCH AND LIMITATIONS

This doctoral dissertation has the purpose to advance knowledge and understanding on the investors' decision-making assessment when investing in equity crowdfunding. It is well recognized that one of the main problems most new ventures face is how to externally raise the funds needed for financing their start-up (Berger & Udell, 1995; Cassar, 2004; Cosh, Cumming, & Hughes, 2009). Crowdfunding is considered a new source of funding (Agrawal et al., 2013; Belleflamme et al., 2014; Mollick, 2014; Moritz & Block, 2016), nevertheless it is becoming an increasingly employed tool by entrepreneurs who seek financing for their venture (Ahlers et al., 2015; Harrison, 2013; K. Kim & Viswanathan, 2014; Kuppuswamy & Bayus, 2013; Wheat et al., 2013) and by investors who search for non-traditional alternatives of investment (Everett, 2015; Giudici et al., 2013; Hagedorn & Pinkwart, 2016; Ley & Weaven, 2011; Schwienbacher & Larralde, 2010). The crowdfunding phenomenon, in theory and practice, has developed and spread significantly in recent years (A. Bachmann et al., 2011; Feller et al., 2013; Moritz & Block, 2016). In this final chapter, we provide the conclusions about characteristics and trust-agency implication of the investor-entrepreneur relation in the equity crowdfunding context. We also include the contributions of our study, limitations and further research.

6.1. CONCLUSIONS OF THE DISSERTATION

This doctoral dissertation was structured and design through three independent essays. Each essay intended to explore a different characteristic of the equity crowdfunding phenomenon and included its own methodology, analysis and empirical results. We shall therefore consider in turn each of the three essays.

The objective of the first essay was set to *determine the characteristics of the investors willing to fund start-ups through crowdfunding platforms*. We developed hypotheses concerning the factors of expertise influencing the investor's behavior and risk diversification strategy in equity crowdfunding based on the personal investing literacy (Chen & Volpe, 1998; Volpe et al., 1996, 2002) and household portfolio literature (Guiso, Haliassos, & Japelli, 2002). We found a mixture of results where some of our hypothesis were supported and others did not. In contrast to what prior empirical research suggest, both taking into account the personal investment literacy literature and the economic literature of household portfolios, demographic factors such as gender, age or level of formal education were not highlighted as statistical significant in our empirical analysis in explaining the investors expertise influencing her/his investment behavior in equity crowdfunding. Conversely, household income and working status were found to be key

determinants of this strategy in equity crowdfunding. It seems that learned skills and solid financial wealth matter more than demographics in explaining the investor's expertise strategy in picking stocks in equity crowdfunding. Examining the determinants of the risk diversification strategy in equity crowdfunding, it was found that formal education, working status and the own assessed investor profile had statistical significance in explaining the relationship. According to our results, it is then expected that individuals with higher level of formal education, higher working status, but with lesser investment experience would diversify more and spread the risk when allocating money in early stage start-ups through equity crowdfunding projects. However, either age or the investor's level of wealth and income would not be good predictors of the likelihood of adoption of the risk diversification strategy.

The second essay's objective was to *evaluate the investors' development of trust based on their beliefs about the competence, integrity and benevolence of the entrepreneur seeking financing through the equity crowdfunding model*. The novelty of this research was to analyze "trust" in the equity crowdfunding ecosystem. Welter (2012) stated that trust is a crucial ingredient for starting and growing a business. Our hypothesis are built on the integrative model of trust between individuals proposed by Mayer et al. (1995) and modified by Mcknight, Cummings, & Chervany (1998) in the context of new organizational relationships. We state that competence, integrity and benevolence are significant factors explaining and appraising the variables trusting beliefs, disposition to trust and collective trust; and furthermore that each of those variables has a positive relationship with most decisions to invest in equity crowdfunding. We have used a structural equation modelling technique to predict the relationship among our variables. Trusting belief and disposition to trust appear to have a positive and strong relationship in our model. Trusting belief explains the investor's perception that the project presented by a given entrepreneur can have a positive impact in his/her portfolio of investment. Disposition to trust, on the other hand, captures the faith that the investor has towards the good intention and willingness of humanity, and hence the entrepreneur. The mutual influence of these two latent variables seems therefore quite intuitive, and the results seem to confirm this in our sample. Our main result in this paper refers to the inclusion of the concept of collective trust in the framework of trust in equity crowdfunding. Indeed, collective trust in the well doing of equity crowdfunding platforms seems to be strongly influenced by the investor's trusting belief in entrepreneurs, and in turn influence the investor's trust intentions. It seems therefore to be a good explanatory of trust when investors allocate money in equity crowdfunding projects.

The third essay was focused on the *analysis of the trust and agency relations among the investors, entrepreneurs and crowdfunding platforms*. Trust researchers (Höhmann & Malieva, 2005; Maxwell & Lévesque, 2014; Nitti, Girau, & Atzori, 2014; Welter, 2012; Welter & Smallbone,

2006) and agency researchers (Arthurs & Busenitz, 2003; Becerra & Gupta, 1999; Cuevas-Rodríguez et al., 2012; Ley & Weaven, 2011; Strätling, Wijbenga, & Dietz, 2012) agreed that trust and agency are two concepts that coexist and co-evolve (Welter, 2012). Moreover, trust is seen as a mechanism that helps to decrease the costs and risks of business due to the information asymmetry existing among the actors in certain economic transactions. In this essay, we added the agency constructs to the trust constructs developed in the previous essay. The agency constructs are built on the research of agency dynamics for start-up financing in business angel and venture capitalist investment (Mason & Stark, 2004; van Osnabrugge, 2000) and on the research of agency dynamics in crowdfunding models (Ley & Weaven, 2011). They comprise a combination of ex-ante and ex-post investment factors. We tested our hypothesis using a partial least square-structural equation modeling (PLS-SEM) statistical approach. We found that there is an innate tendency of the investor to trust in the equity crowdfunding ecosystem and that investors have found mechanisms that allow them to identify potential flaws and cases of fraud present in certain equity crowdfunding projects through due diligence to identify ex-ante risks or indicators to monitor and control the entrepreneur after the investment have been done (ex-post). We have also found that the equity crowdfunding platforms play an important role in the equity crowdfunding investment process acting as a mediator among the trust and agency constructs on the investment decision making process of the investor and the entrepreneurs, the equity crowdfunding platforms reduce some risks inherent within entrepreneurial activities and act as a governing mechanism for various entrepreneurial relationship.

6.2. CONTRIBUTIONS TO THE EXISTING KNOWLEDGE ON THE TOPIC

In order to understand the investor's willingness to fund entrepreneurs projects through equity crowdfunding, it is useful to know some of his/hers characteristics. A better description of the investor characteristics can benefit all parties involved: entrepreneurs, crowdfunding platforms and other stake holders. Delimitating the investor's equity crowdfunding characteristics helps the entrepreneur to develop projects according to what it is expected and to increase the rate of success in finding funding. Crowdfunding platforms will also benefit from knowing the characteristics of the investors as they can make a better filtering of the investors and match them with projects that fit into their business risk tolerance. The idea of improving the investment expertise can make the investor feel more comfortable with the risk assumed and with the investment decision. If the government is aware of the investor's characteristics, it can act proactively and create an adequate regulatory framework that could make the crowdfunding ecosystem more efficient and productive. Investors would feel safer and more protected which would lead to an increase in the start-up financing sphere, more job creation and potential economic growth.

The study intends to contribute to describe best practices in crowdfunding and identify the implication for practitioners. An important best practice or implication is that a differentiated trust-building strategy may be necessary depending on the type of entrepreneur, investor or crowdfunding platform. For instance, there must be some experienced investors that are not familiar with the crowdfunding platforms however when these experience investors get used with the crowdfunding ecosystem and start investing in crowdfunded projects they will be change the risk perception towards the entrepreneur and crowdfunding platforms by improving the level of trust on the entrepreneurial projects and the crowdfunding platforms.

In the theoretical or conceptual framework it is commented that trust has many dimensions. For the purpose of this study three dimensions of trust have been analyzed: Competence, integrity, and benevolence. These three dimensions of trust under analysis revealed the relationship within the interpersonal trust domain and exhibited the relationship within the disposition to trust others and the crowdfunding platforms. That is, even when it comes to the Internet, people hold specific beliefs with respect to particular attributes or institution rather than broadly trusting or not trusting.

Another contribution of this study includes the role that plays the equity crowdfunding platforms in the crowdfunding investment process. McKnight, Choudhury, & Kacmar (2002) proposed a trust model that embedded institutional trust. We found support in the literature that collective trust could be used instead of institutional trust (Welter, 2012; Welter & Smallbone, 2006). Our empirical research confirms that collective trust represented through the equity crowdfunding platforms perform an important part in explaining the trust intentions of the investors.

Finally, trust researchers (Höhmman & Malieva, 2005; Maxwell & Lévesque, 2014; Nitti et al., 2014; Welter, 2012; Welter & Smallbone, 2006) and agency researchers (Arthurs & Busenitz, 2003; Becerra & Gupta, 1999; Cuevas-Rodríguez et al., 2012; Ley & Weaven, 2011; Strätling et al., 2012) agreed that both theories are complementary. However many empirical researchers only place their efforts to analyze one side of the story. This study intends to make a contribution in covering that gap, as its empirical research includes both theories, trust and agency.

6.3. LIMITATIONS

A strong limitation of the first essay comes from the number of survey respondents. We wanted to determine the characteristics of the investors willing to fund start-ups through crowdfunding platforms. However, the size of our survey (242 investors across three European countries,

Germany, Netherlands and Spain) could be not sufficient to capture the investor's profiles in equity crowdfunding. In the personal investment literacy framework Volpe et al. (1996) analyzed results of 454 participants, Chen & Volpe (1998) analyzed results of 924 college students and Volpe et al. (2002) analyzed results of 530 online investors. Even though, the number of survey respondents could be considered a limitation, our results showed that the number of survey respondents was enough to meet the methodological measurement and test not only from the first essay but also the second and third.

We build our trust model the integrative model of trust between individuals proposed by Mayer et al. (1995) and modified by McKnight et al. (2002). Mayer et al. (1995) proposed a theoretical model after they reviewed some approaches including the characteristics of the trustor and the trustee. McKnight et al. (2002) empirically tested the model proposed by Mayer et al. (1995) through questionnaires administered in the context of an experiment. Gill, Boies, Finegan, & McNally (2005) stated that hypothetical scenarios allow for the control and manipulation of the characteristics of the trustee. Despite that we used McKnight et al. (2002) model obtained through an experiment, we confirmed many of integrative model assumptions with data collected from real investors in equity crowdfunding.

Finally, Mayer et al. (1995) pointed out that one of the difficulties to research trust has been the lack of clearer differentiation among factors that contribute to trust, trust itself, and outcomes of trust. Kee & Knox (1970) agreed that, for example, when a person has some investment, the concept of risk is requisite to trust. Mayer et al. (1995, p.711) stated that "it is unclear whether risk is an antecedent to trust, is trust, or is an outcome of trust". We implicitly embody the concept of risk in the analysis of the ex-ante (due diligence) and ex-post (monitoring and control) agency factors, however we did not explicitly measured the level or risk perceived by each investor when they fund projects in equity crowdfunding.

6.4. FURTHER RESEARCH

The thesis objective was to determine the characteristics of investors willing to fund start-ups through crowdfunding platforms; however, further research could investigate the reasons people are not yet investing in equity crowdfunded projects. This further research can help to understand the reasons why not the public is not using the crowdfunding ecosystem as an investment vehicle. After analyzing the results, a comparison can be made related to those characteristics of investors willing to fund start-ups through crowdfunding with those who are not investing using the crowdfunding platforms.

R. Bachmann & Inkpen (2011) argued that too many studies have focused on investigating trust at the micro level and too little is known about how institutions influence and foster for more macro-level trust research. Welter (2012) not only agreed with this statement but also added that what is needed are multilevel studies which analyze the duality of trust within and across different context in entrepreneurship including the three different levels: micro, meso and macro.

Trust formation in the crowdfunding investment process to understand its antecedents before action of the decision to invest takes place. Bstieler, (2006) modeled trust formation as an outcome of two types of antecedents. The first antecedent type consist of elements expected to promote trust formation: communication behavior, share-problem solving, and perceived fairness. The second type of antecedents is composed by: continue existence of conflicts and partner egoism before the investment takes place. Our study has focused on analyzing the trust and agency relations among the investors, entrepreneurs and crowdfunding platforms after the investment decision-making process took place. However, we can further study the components of trust formation before the decision of invest takes place.

The crowdfunding platform act as the marketplace where a network of investor and entrepreneurs coexist. Igarashi et al. (2008) supported that trust and social network may be linked by mechanism that are largely stable across cultures. For example, it was found that in English speaking cultures trust may be related to the creation of social opportunities while this is not the case in East Asia (Chow & Chan, 2008). Our study comprises a survey to investors in three different countries and among them; there should be cultural differences that lead them to trust the equity crowdfunding ecosystem.

In this study we assumed that all investor behave identically regarding the trust and agency constructs in the equity crowdfunding ecosystem. There must be venture capital and business angel investors that also use the equity crowdfunding process to allocate capital in their portfolio of equity projects. An analysis of the difference in the level of trust and agency among venture capitalists, business angels and crowd investors will be important to categorize the investment decision process in the equity crowdfunding ecosystem.

This study objective is to explore the relationships among the investors, entrepreneurs and crowdfunding platforms and we use to complementary strong theories to meet our aim. In further research, we can take a step forward and broaden the perspective of our study embodying the Transaction Cost Economics Theory. Williamson (2008) contribution regarding the bounded rationality, the opportunistic behavior of the counterparties and the market failures can be helpful

as an additional framework to explain and understand the new phenomenon of equity crowdfunding.

All potential investors with Internet connection can access to information provided by the crowdfunding investment projects. This unlimited connectivity could encourage many non-professional investors to benefit from the knowledge and due diligence of professional investors. Taking advantage of other's people resources is known as the free-rider problem (Pecorino, 1998; Runge, 1984). Bliss & Nalebuff (1984) stated that many public goods typically are supplied by the efforts of a single individual. In equity crowdfunding, many investors may become free riders since the project information is public, and registered potential investors cannot usually be excluded. Agrawal et al. (2013) pointed out that because investments stakes are small and the cost of performing due diligence high, the crowdfunding community may systematically underinvest in due diligence. Qiu (2013) added that the free-rider problem exists in reward-based crowdfunding where each backer prefers others to supply the effort tend to contribute only towards the end of the funding campaign. Klöhn & Hornuf (2012) found that the smaller the investment amount, the higher the number of investors in a research conducted among five equity-based crowdfunding platforms. This results in the line of Hagedorn & Pinkwart (2016) who concluded that a smaller investment limit would also increase the transaction costs for shareholder management. Further research can be made whether an investor is able to assess the risk and benefits of investing in any equity crowdfunding project despite one's ability or knowledge.

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APPENDICES

Appendix 1 Questionnaire of the study

Equity Crowdfunding

Welcome to the Survey

Thank you for helping us with our research at Universitat Autònoma de Barcelona.

Our survey aims to collect relevant insights into the equity crowdfunding industry from investors.

The goal of this survey is to gain a deeper understanding of the reasons that investors trust the equity crowdfunding ecosystem, and how the investors monitor and evaluate an equity crowd-funded company. The questionnaire is divided in six sections: demographics, crowdfunding and the issue of trust, entrepreneurs and the issue of trust, due diligence, monitor and control, and crowdfunding platforms. If you are interested in the detailed results and our analysis, please contact hubertaugusto.joo@e-campus.uab.cat.

This survey is completely anonymous and we will handle the information you provide with the utmost care!

Click next to get started. The survey should take between 8 and 12 minutes.

Section 1: Demographics

Demographic questions are designed to help the researchers determine what factors may influence a respondent's answers, interests, and opinions. Collecting demographic information will enable us to cross-tabulate and compare subgroups to see how responses vary between these groups.

1. Gender:

- Female
- Male

2. Year of birth:

- from 1935
- to 2000

3. Country of Residence:

- AD - Andorra
- AE - United Arab Emirates
- AF - Afghanistan
- AG - Antigua and Barbuda
- AI - Anguilla
- AL - Albania
- AM - Armenia
- AO - Angola
- AQ - Antarctica
- AR - Argentina
- AS - American Samoa
- AT - Austria
- AU - Australia
- AW - Aruba
- AZ - Azerbaijan
- BA - Bosnia and Herzegovina
- BB - Barbados
- BD - Bangladesh
- BE - Belgium
- BF - Burkina Faso
- BG - Bulgaria
- BH - Bahrain
- BI - Burundi
- BJ - Benin
- BL - Saint Barthélemy
- BM - Bermuda
- BN - Brunei
- BO - Bolivia
- BR - Brazil
- BS - Bahamas, The
- BT - Bhutan

- BV - Bouvet Island
- BW - Botswana
- BY - Belarus
- BZ - Belize
- CA - Canada
- CC - Cocos (Keeling) Islands
- CD - Congo, Democratic Republic of the
- CF - Central African Republic
- CG - Congo, Republic of the
- CH - Switzerland
- CI - Cote d'Ivoire
- CK - Cook Islands
- CL - Chile
- CM - Cameroon
- CN - China
- CO - Colombia
- CR - Costa Rica
- CU - Cuba
- CV - Cape Verde
- CW - Curacao
- CX - Christmas Island
- CY - Cyprus
- CZ - Czech Republic
- DE - Germany
- DJ - Djibouti
- DK - Denmark
- DM - Dominica
- DO - Dominican Republic
- DZ - Algeria
- EC - Ecuador
- EE - Estonia
- EG - Egypt
- EH - Western Sahara
- ER - Eritrea
- ES - Spain
- ET - Ethiopia
- FI - Finland
- FJ - Fiji
- FK - Falkland Islands (Islas Malvinas)
- FM - Micronesia, Federated States of
- FO - Faroe Islands
- FR - France
- FX - France, Metropolitan
- GA - Gabon
- GB - United Kingdom
- GD - Grenada
- GE - Georgia
- GF - French Guiana

- GG - Guernsey
- GH - Ghana
- GI - Gibraltar
- GL - Greenland
- GM - Gambia, The
- GN - Guinea
- GP - Guadeloupe
- GQ - Equatorial Guinea
- GR - Greece
- GS - South Georgia and the Islands
- GT - Guatemala
- GU - Guam
- GW - Guinea-Bissau
- GY - Guyana
- HK - Hong Kong
- HM - Heard Island and McDonald Islands
- HN - Honduras
- HR - Croatia
- HT - Haiti
- HU - Hungary
- ID - Indonesia
- IE - Ireland
- IL - Israel
- IM - Isle of Man
- IN - India
- IO - British Indian Ocean Territory
- IQ - Iraq
- IR - Iran
- IS - Iceland
- IT - Italy
- JE - Jersey
- JM - Jamaica
- JO - Jordan
- JP - Japan
- KE - Kenya
- KG - Kyrgyzstan
- KH - Cambodia
- KI - Kiribati
- KM - Comoros
- KN - Saint Kitts and Nevis
- KP - Korea, North
- KR - Korea, South
- KW - Kuwait
- KY - Cayman Islands
- KZ - Kazakhstan
- LA - Laos
- LB - Lebanon
- LC - Saint Lucia

- LI - Liechtenstein
- LK - Sri Lanka
- LR - Liberia
- LS - Lesotho
- LT - Lithuania
- LU - Luxembourg
- LV - Latvia
- LY - Libya
- MA - Morocco
- MC - Monaco
- MD - Moldova
- ME - Montenegro
- MF - Saint Martin
- MG - Madagascar
- MH - Marshall Islands
- MK - Macedonia
- ML - Mali
- MM - Burma
- MN - Mongolia
- MO - Macau
- MP - Northern Mariana Islands
- MQ - Martinique
- MR - Mauritania
- MS - Montserrat
- MT - Malta
- MU - Mauritius
- MV - Maldives
- MW - Malawi
- MX - Mexico
- MY - Malaysia
- MZ - Mozambique
- NA - Namibia
- NC - New Caledonia
- NE - Niger
- NF - Norfolk Island
- NG - Nigeria
- NI - Nicaragua
- NL - Netherlands
- NO - Norway
- NP - Nepal
- NR - Nauru
- NU - Niue
- NZ - New Zealand
- OM - Oman
- PA - Panama
- PE - Peru
- PF - French Polynesia
- PG - Papua New Guinea

- PH - Philippines
- PK - Pakistan
- PL - Poland
- PM - Saint Pierre and Miquelon
- PN - Pitcairn Islands
- PR - Puerto Rico
- PS - Gaza Strip
- PS - West Bank
- PT - Portugal
- PW - Palau
- PY - Paraguay
- QA - Qatar
- RE - Réunion
- RO - Romania
- RS - Serbia
- RU - Russia
- RW - Rwanda
- SA - Saudi Arabia
- SB - Solomon Islands
- SC - Seychelles
- SD - Sudan
- SE - Sweden
- SG - Singapore
- SH - Saint Helena, Ascension, and Tristan da Cunha
- SI - Slovenia
- SJ - Svalbard
- SK - Slovakia
- SL - Sierra Leone
- SM - San Marino
- SN - Senegal
- SO - Somalia
- SR - Suriname
- SS - South Sudan
- ST - Sao Tome and Principe
- SV - El Salvador
- SX - Sint Maarten
- SY - Syria
- SZ - Swaziland
- TC - Turks and Caicos Islands
- TD - Chad
- TF - French Southern and Antarctic Lands
- TG - Togo
- TH - Thailand
- TJ - Tajikistan
- TK - Tokelau
- TL - Timor-Leste
- TM - Turkmenistan
- TN - Tunisia

- TO - Tonga
- TR - Turkey
- TT - Trinidad and Tobago
- TV - Tuvalu
- TW - Taiwan
- TZ - Tanzania
- UA - Ukraine
- UG - Uganda
- UM - United States Minor Outlying Islands
- US - United States
- UY - Uruguay
- UZ - Uzbekistan
- VA - Holy See (Vatican City)
- VC - Saint Vincent and the Grenadines
- VE - Venezuela
- VG - British Virgin Islands
- VI - Virgin Islands
- VN - Vietnam
- VU - Vanuatu
- WF - Wallis and Futuna
- WS - Samoa
- XK - Kosovo
- YE - Yemen
- YT - Mayotte
- ZA - South Africa
- ZM - Zambia
- ZW - Zimbabwe
- 4. Country of Crowdfunding Investment
- AT – Austria
- AU – Australia
- BE – Belgium
- CA – Canada
- CH – Switzerland
- DE – Germany
- DK – Denmark
- ES – Spain
- FI – Finland
- FR – France
- GB - United Kingdom
- HK - Hong Kong
- IE – Ireland
- IL – Israel
- IS – Iceland
- IT – Italy
- JP – Japan
- KR - Korea, South
- LU – Luxembourg
- MC – Monaco

- NL – Netherlands
- NO – Norway
- NZ - New Zealand
- PL – Poland
- PT – Portugal
- RU – Russia
- SE – Sweden
- TW – Taiwan
- US - United States

5. What is the highest degree or level of school you have completed?

- No schooling completed
- Nursery school to 8th grade
- Some high school, no diploma
- High school graduate, diploma or the equivalent (for example: GED)
- Some college credit, no degree
- Trade/technical/vocational training
- Associate degree
- Bachelor's degree
- Master's degree
- Professional degree
- Doctorate degree

6. Employment status: are you currently?

- Employed for wages
- Self-employed
- Out of work and looking for work
- Out of work but not currently looking for work
- A homemaker
- A student
- Business owner
- Investor
- Military
- Retired
- Unable to work

7. Which of the following most closely matches your job title?

- Intern
- Entry Level
- Analyst / Associate
- Manager
- Senior Manager
- Director
- Vice President
- Senior Vice President
- C level executive (CIO, CTO, COO, CMO, Etc)
- President or CEO
- Shareholder

- Owner

8. Investment experience in crowdfunding

- less than 1 year
- from 1 to 3 years
- more than 3 years

9. Which of the following best describes the industry where you work?

- Advertising & Marketing
- Agriculture
- Airlines & Aerospace (including Defense)
- Automotive
- Business Support & Logistics
- Construction, Machinery, and Homes
- Education
- Entertainment & Leisure
- Finance & Financial Services
- Food & Beverages
- Government
- Healthcare & Pharmaceuticals
- Insurance
- Manufacturing
- Nonprofit
- Retail & Consumer Durables
- Real Estate
- Telecommunications, Technology, Internet & Electronics
- Transportation & Delivery
- Utilities, Energy, and Extraction
- I am currently not employed

10. What is your total household income?

- Less than €30.000
- €30.001 - €50.000
- €50.001 - €100.000
- €100.000 or more

11. Which of the following best describes the industry of where you invest?

- Advertising & Marketing
- Agriculture
- Airlines & Aerospace (including Defense)
- Automotive
- Business Support & Logistics
- Construction, Machinery, and Homes
- Education
- Entertainment & Leisure
- Finance & Financial Services
- Food & Beverages
- Government

- Healthcare & Pharmaceuticals
- Insurance
- Manufacturing
- Nonprofit
- Retail & Consumer Durables
- Real Estate
- Telecommunications, Technology, Internet & Electronics
- Transportation & Delivery
- Utilities, Energy, and Extraction

12. In how many companies have you invested using a crowdfunding platform?

- 1 company
- 2 to 5 companies
- More than 5 companies

13. What is the average amount of money invested per company using a Crowdfunding platform?

- Less than €500
- €500 - €1.000
- €1001 - €5.000
- €5.001 or more

14. Which profile describes you best?

- High Net Worth Investor. You earn more than €100,000 per year, or hold net assets of at least €250,000
- Sophisticated Investor. Invested in more than one unlisted company, director of a company with an annual turnover of at least €1 million, or worked in private equity in the last two years, or you have been a member of a business angels network for at least the last six months
- Everyday Investor. You have not invested (and will not invest) more than 10% of your net assets per year in shares, bonds, fund or other securities that are not listed on a stock exchange. The Financial Conduct Authority refers to 'Everyday Investors' as 'Restricted Investors'

1. Before investing in crowdfunding, did you invest in...?

	Yes	No
...company shares listed at any stock exchange.		
...bonds or other fixed income financial instruments.		
...private equity or non-stock exchange listed company.		
...ETF derivatives: Forwards contracts, futures, swaps, options and/or others.		

Section 2: Crowdfunding and the Issue of Trust

Trust is necessary for backers to invest into a campaign. Answering this questions will allow us to determine which factors are important to trust the crowdfunding campaigns.

16. Choose the most appropriate answer of how you feel about each statement.

- I believe that most people do a very good job at their work.
- Most people are very knowledgeable in their chose field.
- A large majority of people are competent in their area of expertise.
- In general, most people keep their promises.
- I think people generally try to back up their words with their actions.
- Most people are honest in their dealings with others.
- In general, people really do care about well-being of others.
- The typical person is sincerely concerned about the problem of others.
- Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.
- I usually trust people until they give me a reason not to trust them.
- I generally give people the benefit of the doubt when I first meet them.
- Entrepreneurs and the Issue of Trust

Section 3: Entrepreneurs and the Issue of Trust

Trust is necessary for backers to invest into a campaign. Answering these questions will allow us to determine which factors are important to trust the entrepreneurs and companies funded.

17. Choose the most appropriate answer of how you feel about each statement.

- Entrepreneurs have the skills and expertise to allocate the capital invested efficiently.
- Entrepreneurs perform their role of achieving what they committed in the investment process.
- Overall, entrepreneurs are capable and proficient provider of the product/service offered.
- In general, entrepreneurs are very knowledgeable about the business.
- Entrepreneurs are truthful when dealing with the capital invested.
- I would characterize the typical entrepreneur as honest.
- Entrepreneurs would keep their commitments.
- Entrepreneurs are sincere and genuine.
- I believe that the entrepreneurs would act in my best interest.
- If I require information, the entrepreneurs would do their best to deliver that information to me.
- Entrepreneurs are interested in my well-being, not just his/her own.

Section 4: Due Diligence

Due diligence is an investigation of a business or person prior to signing a contract, or an act with a certain standard of care. A common example of due diligence in various industries is the process through which a potential acquirer evaluates a target company or its assets for an acquisition. The following questions will help us to determine the decision making process before investing in Equity Crowdfunding companies.

18. Choose the most appropriate answer of how you feel about each statement.

- I have experience in the sector/industry where I invest
- I conduct my own business research (due diligence) before I invest
- I met the entrepreneurs before investing.
- I review the entrepreneur's background, experience and track record, personal qualities, range of skills and functions of the management team before investing.
- I review the company's overall strategy before investing.
- I review how the business is organized to produce and deliver the product/service before investing.
- I review the nature of the product, uniqueness, distinctness and innovativeness before investing.
- I review the company's: market potential and growth, demonstrated market need, the level and nature of the competition and the barriers to entry to the sector/industry before investing.
- I review the financial consideration like structure of business, costs, pricing, revenue stream, financial projections, value equity/worth business and the business expected return before investing.
- I review the different possible exit routes before investing.
- I invest in companies where I have certain background, skills or knowledge of the industry, the market, the technology.
- I consult other people before I invest.
- Before investing, it is important that I have been offered a potential exit route.
- Before investing, it is important that there are other co-investors (backers) present.
- Before investing, it is important that other investors involved understand the business/industry.

19. It can take me... since I start my own research until I decide to invest

- 1 day
- 2 to 7 days
- 8 to 14 days
- 15 to 21 days
- 22 days or more

Section 5: Monitoring and Control

Investment control is a monitoring function within the asset management, portfolio management or investment management. Answering the following questions will help us to detect the most important indicators used to monitor and control an equity Crowdfunding investment.

20. Choose the most appropriate answer of how you feel about each statement.

- After I invest, I review the company's financial performance (Ebit, net profit, EPS, etc.) to gather any potential financial rewards.
- After I invest, I review the company's return (Operating and net margin, ROA, ROE, etc.) to gather any potential financial rewards.
- After I invest, I review the company's expenses to monitor the operating business.
- After I invest, I review the company's ability to reach break-even without future funding.
- After I invest, I review the company's future capital expenditures needs.
- After I invest, I review the company's additional capital raise needed.
- After I invest, I follow-up any person (investor, manager, employee) incorporation that can contribute with skills and knowledge needed to develop the business.
- I consider important to have some representation in the company's board of directors after I invest.

Section 6: Crowdfunding platform

Trust is necessary for the Crowdfunding Platform to make backers invest into a campaign. Answering these questions will allow us to determine which factors are important to trust in the Crowdfunding platforms.

21. Choose the most appropriate answer of how you feel about each statement.

- I am comfortable making investments through the equity crowdfunding platforms.
- I feel good about how things go when I invest using any equity crowdfunding platform.
- In general, most Crowdfunding platforms are competent at offering investments opportunities.
- The Crowdfunding platforms do a capable job selecting the companies funded.
- I feel that the Crowdfunding platforms are good at what they do.
- I am comfortable relying on the Crowdfunding platform offers to invest.
- I feel fine investing through the Crowdfunding platform since the companies funded fulfill their agreements.
- I always feel confident that I can rely on the Crowdfunding platform to do their work when I interact with them.
- I feel that Crowdfunding platform would act in an investors' best interest.
- If an investor requires help, the Crowdfunding platform would do it best to help.
- Crowdfunding platforms are interested in the investor's well-being and not just their own well-being.
- The Crowdfunding platforms have enough safeguard that make the investor feel comfortable using it to invest in companies.
- I feel assured that the legal and technological structures adequately protect me from problems in the investment process.

- In general, the Crowdfunding system is a robust and safe environment in order to make investment decision.

THANK YOU!

Your response has been recorded.

Thanks again for helping us out!

22. Feel free to write any comment in the following box:

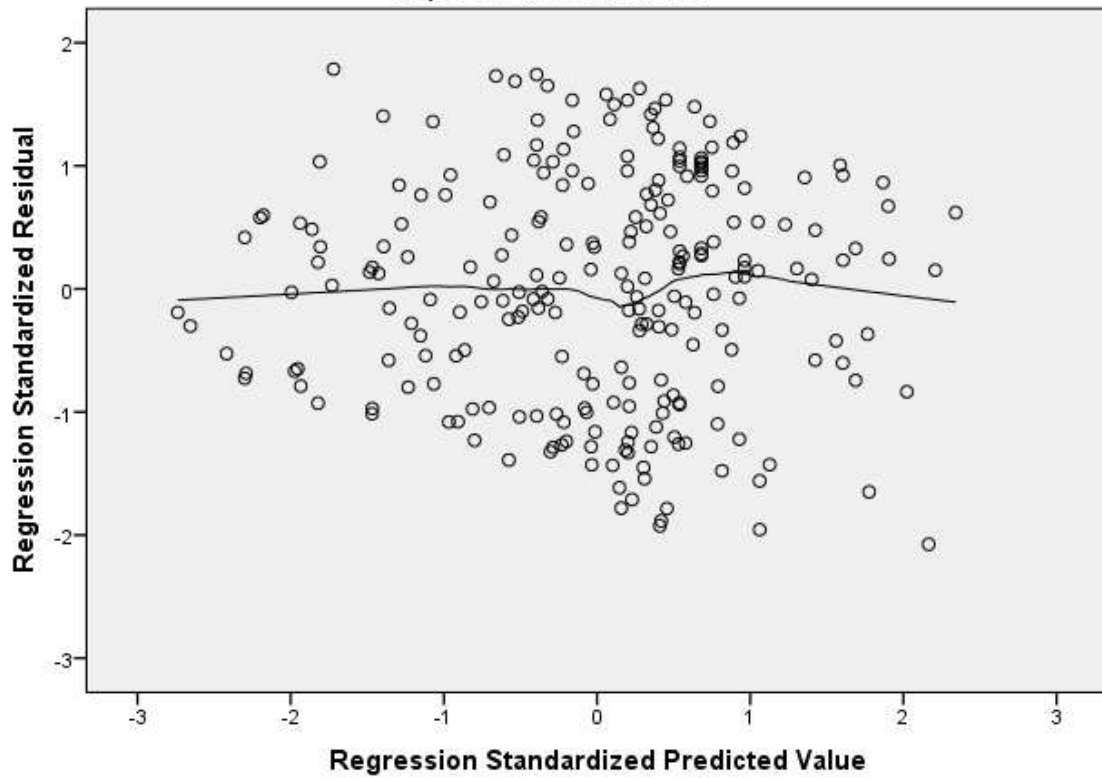
23. Write your email here if you are interested in the detailed result and our analysis of the survey:

Appendix 2 Multicollinearity tolerance and VIF test

Variables	Collinearity Statistics	
	Tolerance	VIF
TBC1	,257	3,884
TBC2	,333	3,002
TBC3	,293	3,409
TBC4	,342	2,923
TBI1	,375	2,663
TBI2	,245	4,077
TBI3	,347	2,878
TBI4	,400	2,499
TBB1	,301	3,322
TBB2	,397	2,521
TBB3	,373	2,684
DTC1	,247	4,047
DTC2	,174	5,740
DTC3	,238	4,199
DTI1	,257	3,888
DTI2	,370	2,701
DTI3	,229	4,358
DTB1	,327	3,062
DTB2	,287	3,484
DTB3	,278	3,594
DTG1	,379	2,638
DTG2	,273	3,668
CTC1	,261	3,825
CTC2	,354	2,829
CTC3	,280	3,570
CTI1	,235	4,248
CTI2	,263	3,804
CTI3	,255	3,917
CTB1	,336	2,978
CTB2	,341	2,930
CTB3	,405	2,467
CTG1	,350	2,859
CTG2	,362	2,760
TRUST1	,253	3,954
TRUST2	,316	3,162
TRUST3	,252	3,963

Appendix 3 Loess line homoscedasticity assumption

Scatterplot



Appendix 4 Descriptive statistics and sample variance trust model

Descriptive Statistics		
	N	Variance
TBC1	242	,783
TBC2	242	,704
TBC3	242	,772
TBC4	242	,836
TBI1	242	,597
TBI2	242	,767
TBI3	242	,597
TBI4	242	,871
TBB1	242	,877
TBB2	242	,865
TBB3	242	,879
DTC1	242	,869
DTC2	242	,986
DTC3	242	,921
DTI1	242	,885
DTI2	242	,841
DTI3	242	,813
DTB1	242	1,029
DTB2	242	,797
DTB3	242	,896
DTG1	242	1,494
DTG2	242	,885
CTC1	242	,629
CTC2	242	,620
CTC3	242	,600
CTI1	242	,724
CTI2	242	,768
CTI3	242	,754
CTB1	242	,687
CTB2	242	,592
CTB3	242	,844
CTG1	242	,735
CTG2	242	,666
TRUST1	242	,705
TRUST2	242	,778
TRUST3	242	,621
Valid N (listwise)	242	

Appendix 5 Regression weights, covariance and correlations and p-values SEM trust model

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
CT <--- TB	,440	,075	5,900	***	
TI <--- CT	,618	,064	9,729	***	
TI <--- DT	,139	,050	2,781	,005	
TRUST1 <--- TI	1,000				
TRUST2 <--- TI	,856	,086	9,923	***	
TRUST3 <--- TI	,952	,077	12,418	***	
CTB <--- CT	,970	,073	13,199	***	
CTI <--- CT	,980	,073	13,350	***	
CTC <--- CT	1,000				
TBB <--- TB	,873	,077	11,384	***	
TBI <--- TB	1,000				
TBC <--- TB	,832	,077	10,798	***	
DTB <--- DT	,910	,075	12,091	***	
DTI <--- DT	1,000				
DTC <--- DT	,827	,076	10,894	***	

Covariance: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
DT <--> TB	,576	,072	7,988	***	

Correlations: (Group number 1 - Default model)

	Estimate
DT <--> TB	,831

Appendix 6 Sample homogeneity trust-agency model

Variable	Chi-square p-value	F – exact test p-value	Variable	Chi-square p-value	F – exact test p-value
DC1	.401***	.560	TBI4	.763***	.706
DC2	.744***	.722	TBB1	.667***	.636
DC3	.374***	.322	TBB2	.539**	.627
DI1	.076***	.095	TBB3	.221***	.135
DI2	.123***	.039	SNG1	.368**	.390
DI3	.223***	.296	SNG2	.795***	.754
DB1	.454***	.390	SNC1	.442***	.494
DB2	.224***	.298	SNC2	.958***	.964
DB3	.567***	.532	SNC3	.494***	.404
DT1	.427*	.440	SNI1	.801***	.769
DT2	.260***	.216	SNI2	.769***	.737
TBC1	.356***	.330	SNI3	.846***	.799
TBC2	.255***	.256	SNB1	.491***	.514
TBC3	.134***	.092	SNB2	.381***	.307
TBC4	.867***	.792	SNB3	.423**	.410
TBI1	.742***	.686	SA1	.588***	.622
TBI2	.310***	.241	SA2	.205***	.227
TBI3	.134***	.096	SA3	.324***	.270
SP1	.643**	.608	SP13	.176***	.189
SP2	.140***	.120	SP14	.273***	.312
SP3	.165**	.195	SP15	.373**	.399
SP4	.133***	.131	MC1	.128***	.127
SP5	.133***	.127	MC2	.153***	.149
SP6	.119***	.113	MC3	.141***	.114
SP7	.125***	.118	MC4	.191**	.196
SP8	.124***	.120	MC5	.230***	.237
SP9	.175***	.181	MC6	.370	.377
SP10	.129***	.126	MC7	.422	.495
SP11	.132***	.134	MC8	.125	.119
SP12	.593***	.560			

*1 cell had expected a count less than 5

** 4 cells had expected a count less than 5

*** 5 cells or more had expected a count less than 5

Appendix 7 Questionnaire trust-agency model

Trusting belief and disposition to trust items

Trusting beliefs (TB)	Competence (C)	5. Entrepreneurs have the skills and expertise to allocate the capital invested efficiently.	
		6. Entrepreneurs perform their role of achieving what they committed in the investment process.	
		7. Overall, entrepreneurs are capable and proficient provider of the product/service offered.	
		8. In general, entrepreneurs are very knowledgeable about the business.	
	Integrity (I)	5. Entrepreneurs are truthful when dealing with the capital invested.	
		6. I would characterize the typical entrepreneur as honest.	
		7. Entrepreneurs would keep their commitments.	
	Benevolence (B)	8. Entrepreneurs are sincere and genuine.	
		4. I believe that the entrepreneurs would act in my best interest.	
		5. If I require information, the entrepreneurs would do their best to deliver that information to me.	
	Disposition to trust (DT)	Competence (C)	6. Entrepreneurs are interested in my well-being, not just his/her own.
			4. I believe that most people do a very good job at their work.
5. Most people are very knowledgeable in their chose field.			
Integrity (I)		6. A large majority of people are competent in their area of expertise.	
		4. In general, most people keep their promises.	
		5. I think people generally try to back up their words with their actions.	
Benevolence (B)		6. Most people are honest in their dealings with others.	
		4. In general, people really do care about well-being of others.	
		5. The typical person is sincerely concerned about the problem of others.	
Trusting Stance (G)		6. Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.	
		3. I usually trust people until they give me a reason not to trust them.	
		4. I generally give people the benefit of the doubt when I first meet them.	

Agency items

Ex-ante (SP)	2. I have experience in the sector/industry where I invest
	3. I conduct my own business research (due diligence) before I invest
	4. I met the entrepreneurs before investing.
	5. I review the entrepreneur's background, experience and track record, personal qualities, range of skills and functions of the management team before investing.
	6. I review the company's overall strategy before investing.
	7. I review how the business is organized to produce and deliver the product/service before investing.
	8. I review the nature of the product, uniqueness, distinctness and innovativeness before investing.
	9. I review the company's: market potential and growth, demonstrated market need, the level and nature of the competition and the barriers to entry to the sector/industry before investing.
	10. I review the financial consideration like structure of business, costs, pricing, revenue stream, financial projections, value equity/worth business and the business expected return before investing.
	11. I review the different possible exit routes before investing.
	12. I invest in companies where I have certain background, skills or knowledge of the industry, the market, the technology.
	13. I consult other people before I invest.
	14. Before investing, it is important that I have been offered a potential exit route.
	15. Before investing, it is important that there are other co-investors (backers) present.
	16. Before investing, it is important that other investors involved understand the business/industry.
	Ex-Post (MC)
2. After I invest, I review the company's return (Operating and net margin, ROA, ROE, etc.) to gather any potential financial rewards.	

	3. After I invest, I review the company's expenses to monitor the operating business.
	4. After I invest, I review the company's ability to reach break-even without future funding.
	5. After I invest, I review the company's future capital expenditures needs.
	6. After I invest, I review the company's additional capital raise needed.
	7. After I invest, I follow-up any person (investor, manager, employee) incorporation that can contribute with skills and knowledge needed to develop the business.
	8. I consider important to have some representation in the company's board of directors after I invest.

Collective trust items

Collective trust (CT)	Competence (C)	4. In general, most crowdfunding platforms are competent at offering investments opportunities.
		5. The crowdfunding platforms do a capable job selecting the companies funded.
		6. I feel that the crowdfunding platforms are good at what they do.
	Integrity (I)	4. I am comfortable relying on the crowdfunding platform offers to invest.
		5. I feel fine investing through the crowdfunding platform since the companies funded fulfill their agreements.
		6. I always feel confident that I can rely on the crowdfunding platform to do their work when I interact with them.
	Benevolence (B)	4. I feel that crowdfunding platform would act in an investors' best interest.
		5. If an investor requires help, the crowdfunding platform would do it best to help.
		6. Crowdfunding platforms are interested in the investor's well-being and not just their own well-being.

Trust items

Trust Intentions (TI)	4. The Crowdfunding platforms have enough safeguard that make the investor feel comfortable using it to invest in companies
	5. I feel assured that the legal and technological structures adequately protect me from problems in the investment process.
	6. In general, the Crowdfunding system is a robust and safe environment in order to make investment decision.

Appendix 8 Monitoring and control formative measurement model analysis

Latent Variable	Indicator	VIF		Bootstrapping relation	Outer weights	Outer loading	T Statistics (O/STDEV)	p-Values	Significance levels
Ex ante due diligence	SP1	1.378	1.762	SP1 -> EXANTE	0.233	0.523	2.622	0.009	***
	SP2	2.502		SP2 -> EXANTE	0.092	0.568	0.806	0.421	NS
	SP3	2.203		SP3 -> EXANTE	0.083	0.463	0.715	0.475	NS
	SP4	3.188		SP4 -> EXANTE	-0.068	0.454	0.467	0.641	NS
	SP5	4.794		SP5 -> EXANTE	0.118	0.497	0.492	0.623	NS
	SP6	4.498		SP6 -> EXANTE	-0.136	0.343	0.679	0.497	NS
	SP7	4.548		SP7 -> EXANTE	0.241	0.477	1.213	0.226	NS
	SP8	4.913		SP8 -> EXANTE	-0.199	0.384	1.255	0.210	NS
	SP9	4.844		SP9 -> EXANTE	0.039	0.424	0.255	0.799	NS
	SP10	3.102		SP10 -> EXANTE	-0.407	0.223	2.608	0.009	***
	SP11	1.711		SP11 -> EXANTE	0.249	0.444	2.379	0.018	**
	SP12	1.831		SP12 -> EXANTE	0.220	0.340	2.065	0.039	**
	SP13	2.270		SP13 -> EXANTE	0.093	0.469	0.801	0.423	NS
	SP14	1.920		SP14 -> EXANTE	0.118	0.685	1.151	0.250	NS
	SP15	2.127		SP15 -> EXANTE	0.635	0.838	5.819	0.000	***
Ex post monitoring and control	MC1	5.918	1.844	MC1 -> EXPOST	-0.208	0.674	0.773	0.440	NS
	MC2	5.538		MC2 -> EXPOST	0.615	0.751	2.442	0.015	**
	MC3	3.964		MC3 -> EXPOST	-0.157	0.647	0.799	0.425	NS
	MC4	3.160		MC4 -> EXPOST	0.516	0.821	2.995	0.003	***
	MC5	3.525		MC5 -> EXPOST	-0.307	0.600	1.740	0.082	*
	MC6	2.983		MC6 -> EXPOST	0.126	0.687	0.757	0.450	NS
	MC7	1.970		MC7 -> EXPOST	0.320	0.715	2.478	0.014	**
	MC8	1.376		MC8 -> EXPOST	0.334	0.676	3.285	0.001	***
Threshold		VIF<5							

Note: NS = not significant, * p<.10, **p<.05, ***p<.0