Equity Crowdfunding

Identifying success drivers for a new financing model

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Abstract:
Equity crowdfunding has experienced exponential growth over recent years. Combined with the informational and networking power of internet and social media, the equity crowdfunding model can be used on a large scale in financing young ventures and has the potential to close the funding gap faced by startups. In this paper, the financing model is explored with regards to identifying relevant drivers for a venture to be successful in raising capital through equity crowdfunding. The study uses regression analysis on a sample of 290 completed equity crowdfunding deals, covering 10 different European platforms. Several features describing the company, the team, and financial information have been tested in order to establish what factors impact the investment decision for equity crowdfunding investors. The study concludes that financial information, notably previous business angel investments and previous successful equity crowdfunding rounds, leads to higher amounts raised. Presence of information reflecting the purpose and use of funds seems to attract more investors, while team characteristics are not found to have significant effect on any criteria of success. Finally, the location of the venture and the promotion of an environmental or ethical scope affect the performance of an equity crowdfunded campaign.

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1. Introduction

For any entrepreneur attempting to start up a new venture, financial capital is a critical resource. Although, in theory, all projects with expected positive payoff should be able to obtain financing, the reality is far different. Imperfect capital markets often leave entrepreneurs without viable possibilities to fund their ideas. After the latest financial crisis in 2007-2008, conditions have worsened for ventures seeking capital. Further restrictions have been imposed on commercial banks, making it close to impossible for new firms to obtain debt finance. Venture capital funds have put more focus on follow-up investments and have allocated less resources to seed stage companies.

Meanwhile, the advancement of the internet and social media has allowed ventures, as well as individuals, to seek financing from the general public. The utilization of social media has led to an exponential growth in crowdfunded projects over the past couple of years. This increased attention has also enabled the development of a crowdfunding model, latest to include the ability to offer equity stakes to investors. The model offers both sophisticated and unsophisticated investors the opportunity to gain exposure to early stage financing, as well as an alternative funding solution to ventures. Equity crowdfunding has been characterized in media and research as a potential revolution of the financial system. Nevertheless, as a financing model, equity crowdfunding has caused great debate among public and regulators all over the world. On one hand, the model provides financing and contributes to growth, on the other it encompasses new types of risks.

Crowdfunding has gained momentum recently and its presence and importance in early stage financing cannot be denied. Equity crowdfunding, in particular, offers previously unheard of possibilities to both ventures and investors. However, little research has been done in the field, and it has not been established to which kind of ventures equity crowdfunding is suitable for or to what extent it fills the financing need for startups. This report seeks to investigate and discuss the following:

> *Identify relevant features that are correlated with the ability of ventures to raise capital through equity crowdfunding, and discuss the potential existence of causal effects of these features on having a successful equity crowdfunding financing round.*

Crowdfunding in its current state, utilizing online platforms and social media, is a new form of financing. Especially equity crowdfunding, which due to legal constraints in many countries is moving more slowly than other types of crowdfunding, has not previously been researched in depth. This study includes data from nearly 300 successfully completed equity crowdfunding rounds, with

a main focus on European deals. In order to evaluate the factors that influence the decision from an investor point of view, data has been gathered with focus on availability to the investor. Information has been gathered not only concerning the deal and the company, but also includes publicly available information on the CEO, and selected financial information provided on the platforms. The data collected allows for an in-depth analysis of the possible contributing factors to the success of a venture attempting to raise capital.

The research is based on a quantitative analysis. Ordinary Least Square (OLS) regressions are performed based on the success of ventures to raise capital through an equity crowdfunding round. A number of explanatory variables are used in an attempt to identify the impact of various company characteristics, team composition, and financial information available to the investor. The effects are analyzed and compared to findings from other studies related to crowdfunding, as well as conventional finance theory and current practices of venture capital funds and business angels. The focus is the investor motivation for contributing to a given campaign and the scope of companies for which equity crowdfunding may be a viable option.

The study provides a better understanding of the factors driving success in equity crowdfunding campaigns. For the purpose of this paper, success is defined as the absolute amount raised in a crowdfunding round. Results suggest that company characteristics, such as location in a big city and environmental or ethical scope, impact the funding amount positively, while company age and stage lack any considerable effect. At the same time, the team features, such as CEO age, CEO industry experience and CEO previous ventures, along with team size, do not exhibit any significant influence on the achievement of fundraising success, when controlling for platform fixed effects. The key influencer is found to be financial factors, where signals of viability from having a business angel invested or completed previous successful equity crowdfunding campaigns increase the number of investors and the total amount raised. Not having adequate information on the platform regarding the purpose of funds negatively affects the number of investors participating in a fundraising campaign. Lastly, higher equity stakes offered for the target amount has a positive effect on average amount contributed by each investor.

The report is organized as follows: Section 2 contains the background of the crowdfunding financing model, which is followed by Section 3 with an in-depth look into equity crowdfunding, including risk and benefits to investors and project owners respectively. Section 4 depicts the finance theories relevant to crowdfunding and an analysis of what findings should be expected from a theoretical point of view. Thereafter, Section 5 covers the literature review, summarizing previous

research considered relevant to the topic. In Section 6, the data and methods are evaluated with respect to relevance and reliability of the estimated effects. Section 7 includes the results, which are analyzed with respect to the findings from finance theory and previous research. Finally, in Section 8, the results are compared to data on venture capital funds and business angel investments, discussing the differences and similarities of the financing methods and the place for equity crowdfunding in the financing spectrum of new ventures.

2. Crowdfunding as financing model

Through crowdfunding, a venture or individual collects small amounts from a large pool of contributors in order to finance a specific project. As defined by the Oxford Dictionary (2014), crowdfunding is "*The practice of funding a project or venture by raising many small amounts of money from a large number of people*". In its basic form, crowdfunding includes two parties. On one side there is a person or a group of people, who have an idea that requires financing and who makes a campaign in an attempt to raise the money needed. On the other side, there are contributors providing smaller or larger amounts in order to realize the project in question. Crowdfunding per se is not a new phenomenon. The Statue of Liberty, for instance, is an early example of the concept, in which individuals of various backgrounds donated amounts to finance the building of the pedestal (Harrison, 2013a). Nonetheless, with the development of the internet, mobile applications, and social networks, crowdfunding has become easier, more accessible and more efficient. As a result, the use of the crowdfunding financing model has increased exponentially over the past couple of years (Harrison, 2013a). According to European Crowdfunding Network (2012b), it is exactly this progress in social media that has made the crowd accessible to entrepreneurs, thus providing an opportunity to connect with potential customers, to gathering ideas and financing, and to create an environment in which the crowd may contribute and influence. Today crowdfunding is typically done through the internet, with the project owner using a crowdfunding platform as intermediary. The platform offers the ability to publish funding a campaign, to reach potential contributors through the network, and to collect the contributions (European Commission, 2013b).

When individuals or companies wish to raise money for a project via crowdfunding, they need to make an application to an online crowdfunding platform. A crowdfunding platform is a website in which investors can look at individual project webpages and contribute to selected ideas. If the project complies with rules of the platform, the project is made publicly available for investors on the platform. The platform, typically, also performs some vetting, looking whether the business is suited

for the platform, and assessing the reputation of entrepreneur and the possibility for any fraudulent activities (Pierrakis & Collins, 2012). The project owner needs to specify the funding target, i.e. the amount of money that is needed from contributors in order to go through with the project, as well as a deadline for the fundraising period, unless the closing date is already fixed by the platform. A pitch must also be made. This often consists of a video as well as a written description of the project on the platform webpage. Social media tends to play an important role in attracting funds, with project owners typically making a big effort to reach out to potential funders via Facebook, Twitter etc. and utilizing own social network (Pierrakis & Collins, 2012). When the pitch is active and online on the platform, contributors fund the campaign directly through the platform with amounts dependent on platform rules. During and after the funding window, the project owner has access to the campaign webpage and keeps contributors and other followers updated about the project developments. Given two different crowdfunding payout models, dependent on platform preference, the project owner could receive financing either below or equal to and above 100% of the target amount The most common, however, seems to be that money is returned to contributors if the target is not reached. However, in the case that the target is reached before the deadline, the project owner may decide to continue the campaign and accept additional amounts. After the fundraising period project owners continue to communicate with contributors through the platform. Some contributors also chose to become more involved in the business strategy and decision-making or as general advisors, while others remain passive. The platforms usually has some sort of fee structure in which they receive a percentage of the total amount raised for successful rounds or get an equity stake in the company (European Crowdfunding Network, 2012a).

With financial services having remained old-fashioned for the past decades despite technological developments, the use of platforms and the connection to social networks in crowdfunding offers the utilization of modern communication channels and transparency within finance (Schwerin, 2013). The model is, however, still in an early stage of development, with the question of further development remaining unclear as risks and benefits are changing (European Commission, 2013b).

2.1 The crowdfunding market

Prior to the financial crisis in 2008, initial funding for startups mainly came from the founder and his or her personal network of friends and family, as well as state-grants. However, since the crisis, household and state budgets have tightened, leading to a substantial decline in this kind of funding (Harrison, 2013a). Moreover, venture capitalists (VC) have withdrawn to some extend from this very

risky segment in order to focus more on follow-up investments. Bank finance is even less available as banks are discouraged from taking excessive risk. Harrison (2013a) finds that in the German market entrepreneurs and innovators have a hard time obtaining bank finance due to lack of collateral and the fact that banks rarely lend in the uncertain expectations of future cash flows. The equity market has also contracted since 2008 and VCs are mainly focused on few selected sectors (Dapp, 2013). With many European countries experiencing same conditions, startups have faced difficult times with regards to obtaining finance from traditional sources. In a report by the European Commission (2013b), it is concluded that small and medium sized enterprises face more difficult conditions compared to large companies, due to the dependence on bank financing. It also finds that VC financing in the European Union (EU) has decreased by 14% from 2011 to 2012.

In addition, there is an even greater lack of financing opportunities for the small, early stage, risky projects. Business angels typically invest 25,000-500,000 USD (~18,800-376,500 EUR) in a seed round and VCs even more in order for the investment to be attractive (Dapp, 2013). In comparison, the average amount raised in a crowdfunding round is 150,000 USD (~112,900 EUR), but with only USD 6,400 (~4,800 EUR) being the median. This leaves a gap for crowdfunding to fill out, giving opportunities to even those with small projects, or entrepreneurs in early stage with limited personal funds. Furthermore, VC funds tend to focus on the technology and information sector, making it difficult for ventures in other sectors to raise capital even in the right stage and with the proper size (Dapp, 2013). With financing being a critical resource for new ventures to succeed (Mollick, 2014), the scarcity has resulted in the growth in crowdfunding as a promising way for ventures and individuals with innovative projects to raise the required funds (Harrison, 2013a). As such, crowdfunding seems as a response to the lack of finance for this type of risky projects and may bridge the finance gap for entrepreneurs between bootstrap finance and the point in which the venture is able to attract VC and bank finance, thus functioning as a complement to other sources of finance. This improved access to finance may encourage entrepreneurship, leading to growth and job creation in the long run (European Commission, 2013b).

Crowdfunding seeks to fill an extensive gap in the financing horizon for young and growing companies. Often, such ventures have limited access to debt financing, such as bank credit lines or short-term lending markets (Leach & Melicher, 2008). In turn, companies rely on financial assistance from family and friends, but such sources are generally insufficient to achieve scalability (Pierrakis & Collins, 2012). At the same time, in UK for example, business angels and venture capitalists are increasingly changing their investment focus on more developed companies (British Private Equity

& Venture Capital Association, 2013). Therefore, crowdfunding comes to fill the equity gap between family & friends financing on one side and business angels and VC investments on the other.

Apart from the goal of raising capital to finance the project in question, entrepreneurs gain additional benefits from using the crowdfunding model. This includes for instance the marketing opportunity and press attention, which the venture or innovator gets, and the feedback received by showing the idea to a potential market It may also encourage the development of complimentary products and thereby improving sales in the long run. The crowdfunding round further has the potential to lead to or improving the terms of a future business angel or VC investment by showcasing the demand and attention for the product or service (Mollick, 2014). According to Dushnitsky (2013), the most important part of crowdfunding is the ability of the entrepreneur to mindshare and market share within the virtual community of the contributors, which the platform provides, providing the project owner with the critical resource of sharing ideas and getting direct product feedback. Hans Christian Heinemeyer and Adam Woolway, both entrepreneurs having successfully raised capital through crowdfunding, explain in a report by ECN (European Crowdfunding Network, 2013b) the main reason for the crowdfunding round being the advantage of receiving advise and mentoring from the crowd and building valuable network. Both also described getting instant attention from business angels interested in next round of financing, supporting the theory of additional benefits to project owners.

2.2 Types of crowdfunding

Four main models of crowdfunding have been identified. Crowdfunding started as being purely donations-based, but has evolved in terms of both complexity and risk to now include reward-based crowdfunding, peer-to-peer lending, and equity crowdfunding.

Donation-based

The basic model of crowdfunding is in which a project owner seek to collect donations from the wider public to finance a project. In this case the contributors give away money, but have no claims on the project and are not promised anything in return. Since no tangible benefits are received, contributors are driven by social or intrinsic aims (Dushnitsky, 2013). This may be either directly for charitable causes or simply the motivation of contributors to provide funds to new startups, thus supporting entrepreneurship within a field of his or her interests. Thus the only risk is that the amount provided is not used for the stated purpose. Donation-based crowdfunding typically lead to the smallest

amounts raised, on average 500 EUR in Europe, although this type is the most frequently used (European Commission, 2013b).

Reward-based

In order to attract additional contributions, some project owners offer contributors some sort of reward. The reward may be a t-shirt, an autograph, or a personal meeting with an artist or the project owner. The projects are of a bigger average size than donations-based fundraising, as campaigns build on the reward based model on average collect approximately 3,000 EUR (European Commission, 2013b). An extension of this model is pre-selling, in which the reward received is the finished product. This allows entrepreneurs to finance the development phase, while confirming the existence of a market. The contributors pay an amount in advance against the promise of the finalized product once it is ready. This is most typical for innovative technology with high initial capital expenditure and R&D cost.

Debt-based

In debt-based crowdfunding, or peer-to-peer lending, contributors have a financial interest. In essence the project owner borrows an amount from the contributors. The contributors then get a financial claim over the person or company in question, and will receive interests and repayment of the loan. For socially oriented projects the loan may also be interest free (Dushnitsky, 2013). Lending campaigns collect on average 4,500 EUR, making the average size 50% larger than for reward-based crowdfunding (European Commission, 2013b). The advantage for project owners may thus be to attract higher amounts of capital from contributors, since these are given financial interest, while owners avoid relinquishing voting rights. The limited access to bank financing may also make debt crowdfunding easier, faster, and potentially cheaper than bank loans. Meanwhile it provides investors with an opportunity to diversify risk, and gain some exposure to early stage and household lending. However, the financial interest does not come without risk, since platforms are not covered by deposit guarantees. In addition, it can be hard to verify the credit worthiness of small startups and individuals, especially for unsophisticated investors (European Commission, 2013b).

Equity-based

The most recent development within crowdfunding is the ability to sell ownership stakes of the venture. The investor receives a financial return over time, depending on the performance of the project. However, if the project fails, the investor loses all his or her investment. The difference from an IPO from the investor point of view is basically that there is no secondary market in which the

shares are traded (European Commission, 2014). Legal aspects will be discussed in following sections. The ventures raising capital by selling equity typically need much more financing and attract more investments compared to the other models. The average amount raised through equity crowdfunding in Europe is 50,000 EUR (European Commission, 2013b), a little less than the global average. Equity crowdfunding enables investors to get exposure to venture and development capital, which has previously been solely for an exclusive club with access to VC funds (Limberger, 2013). The investor may use his or her own experience and ability to select profitable investment opportunities (European Commission, 2013b). At the same time, the investor may allocate some value to the mere fact of contributing to the enhancement of entrepreneurship in the economy.

In addition to the four types mentioned, some platforms allow for mixed models, for instance offering a combination of equity stakes and rewards, or donations for smaller contributions and some sort of reward or claim in return for larger amounts.

Throughout the rest of this report, the focus will remain solely on equity crowdfunding. The risk and rewards for project owners and investors respectively will be developed further upon in following sections.

3. Equity crowdfunding

With the recent contraction in financing for startups, equity crowdfunding has emerged as a viable alternative to VC funding and business angel investments. In equity crowdfunding, as opposed to donations- and reward-based crowdfunding, the investors have actual financial interests, hence due diligence and governance are of great importance. One of the main issues in equity crowdfunding is company valuation. Equity stakes are not previously traded, and due to the complexities of valuing early stage companies, it can be hard for both investors and entrepreneurs to determine how much a venture is worth. Attributing a wrongful valuation can be detrimental to both parties. While the investor is at risk of losing if the valuation is set too high, the entrepreneur will not risk giving away too much of the company at a low valuation. The valuation is typically set by the entrepreneur by determining how much equity is offered for the target amount of funds. However, many platforms do allow for upward adjustment of the equity stake offered if the fundraising round is not looking to reach the target. Some platforms also offer training to project owners in setting a valuation. Other platforms allow for auctions, offering a fixed equity stake for the highest bidders (Pierrakis & Collins, 2012). The advantage here is that investors set the valuation; however, the drawback of auctions is

the winner's curse, i.e. the investors who buy are the most optimistic and probably having overpaid (Bajari & Hortacsu, 2003). This may also lead to investors holding back.

Equity crowdfunding providers are split into two categories based on the type of investment: passive and active (Schwienbacher & Larralde, 2010). The first type offers a profit-sharing scheme based on the percentage ownership in the company. Meanwhile, active investments include the opportunity of involvement in the product design stage or selecting the optimal consumer target group.

3.1 State and Development

Identifying aggregated data on global crowdfunding industry is a challenging process, given that no international research, or regulatory or governing bodies focus on this specific topic. One of the most comprehensive sources of information on crowdfunding is provided by Massolution, which describes itself as a unique research, advisory and implementation firm that specializes in crowdsourcing solutions for private, public and social enterprises. An indirect tool for market sizing of equity crowdfunding platforms is crowdsourcing.org[1], developed by Massolution, which contains a comprehensive directory of crowdfunding sites.

According to the above-mentioned data provider, global crowdfunding market has reached a total of 2.7bn USD (~2.1bn EUR) funds raised in 2012, an increase of 81% compared to the 1.5bn USD (~1.2bn EUR) raised in 2011. As noted in Figure 1 below, the global funding volumes are forecasted to reach 5.1bn USD (~4.0bn EUR) in 2013. Among the three large types of crowdfunding platforms, equity-based crowdfunding had the lowest growth rate of 30% in 2012 (78% in 2011), reaching a funding volume of 115.7m USD (~90.1m EUR). For 2013, the growth is also expected to be fairly low, at only 43%, compared with 189% for the total crowdfunding industry (Massolution, 2013). Such slower growth could partly be caused by legal restrictions for individuals to invest in equity crowdfunding projects, especially in large markets, such as the United States.

[1] http://www.crowdsourcing.org

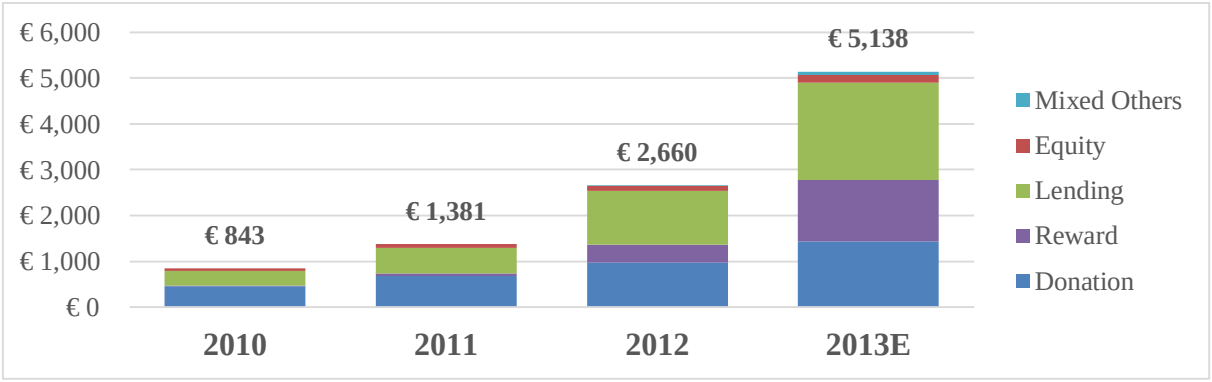


Figure 1 Developments in the crowdfunding market by types of model
Source: Adapted from 2013 Crowdfunding Industry Report (Massolution, 2013)

Structurally, the share of equity-based crowdfunding varied from 3.4% in 2011, to 4.3% in 2012 and is expected to drop to 3.3% in 2013. Even though equity crowdfunding has experienced high growth, it is expanding slower than other types of crowdfunding, which is possibly due to legal constraints still present in most countries. The median size of equity-based campaigns doubled in 2012 compared to 2011, reaching 190,000 USD (~ 147,800 EUR), and was the highest among all types of crowdfunding platforms. Average funding probability for equity crowdfunding was 45%, which is in line with the 50/50 probability identified for other crowdfunding models.

Geographically, almost 96% of all equity crowdfunding projects done in 2012 were in the North American and European regions (see Figure 2). By 2013, these regions will account for 98% (Massolution, 2013). The split by category and purpose in 2012 for equity crowdfunding is as follows: Business and Entrepreneurship - 29.1%, Social Causes - 23.3%, Information and Communication Technology - 14.9%, Film and Performing Arts - 14.6%, Energy and Environment - 5.1%, Others – 13.0% (Massolution, 2013). This indicates the weight on start-ups and creative businesses, which possibly have limited access to other sources of finance. It also includes sectors with traditionally less profit-oriented scope, which should get a benefit from crowdfunding as some investors assign some value to social benefits.

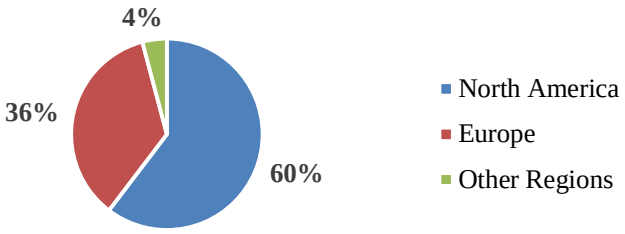


Figure 2 Global equity crowdfunding market, 2012: split by regions
Source: Adapted from 2013 Crowdfunding Industry Report (Massolution, 2013)

3.2 Project owners

For project owners, one clear advantage of crowdfunding is the ability to raise capital even without the right stage or connections to business angels or VC funds. Apart from the financing raised directly from the crowdfunding round, successful companies also gain a lot of publicity, and the chance to promote and showcase the existence of a market interested in its product or service. This may attract business angels and VC funds for further rounds of financing. By utilizing crowdfunding, the venture avoids expensive disclosure as it does not have to comply with the regulations for other equity deals (Pierrakis & Collins, 2012). This lowers the cost as well improves the speed of fundraising. Moreover, investors in equity crowdfunding may also have some other motivation than just the financial return, which can make the model even cheaper for the project owner.

In addition to raising capital and bridging the financing gap, crowdfunding poses a wide range of benefits for project owners, such as collecting feedback on critical aspects of a product before it is released to the general public in the marketplace. For example, crowdfunding campaigns can serve as market assessments of potential demand and as profiling tools for customer demographics and pricing preferences, and ultimately signal whether the product or idea has mass-market potential (De Buysere, Gajda, Kleverlaan, & Marom, 2012). Additionally, crowdfunding brings the opportunity to market-test the product and build upon feedback, expand the target audience and reduce marketing costs through word-of-mouth endorsements or social media and achieve intangible benefits such as professional networking (European Commission, 2013b). According to Kleemann, Voß, & Rieder (2008), companies are primarily motivated to use crowdfunding for cost reduction purposes. In this perspective, investors are seen as active partners who contribute to product innovation, improvement and configuration.

At the same time, initial crowdfunding response, such as number of funders and amount of money raised within a specific time horizon, is an important evaluation tool for seeking funding in subsequent rounds of financing (Pierrakis & Collins, 2012).

Nevertheless, initiating a crowdfunding round is a decision that should be taken with caution. A successful round may lead to accelerated growth thanks to the advice and publicity from the crowd and the potential establishment of business angel or VC connections. However, an unsuccessful round may be correspondingly damaging, due to negative publicity and the sign of lack of interest and confidence in the product or service provided. Another point that should lead to caution is the sensitivity of the venture to intellectual property rights and protecting the secret sauce of the venture.

Details need to be provided publicly, as opposed to only for a low number of people when raising capital privately through VC, business angels, or bank financing.

In equity crowdfunding, it is important for entrepreneurs to consider the conditions of the platform. The way in which equity stakes and possibly voting rights are given away to a large pool of investors can have important implications for the venture at a later point in time. One unfortunate incidence was the case of Smarchive, a German company which successfully raised capital through an equity crowdfunding round on the platform Seedmatch. When the firm needed a secondary round of financing and secured VC investors, it faced the legal intricacies of the platform's contract terms. One major problem was the lack of "drag along" and "tag along" clauses, meaning that each individual investor would have a veto right over any major decision made in the company. The VC fund was not interested in participating in a venture in which all 160 investors needed to be consulted with. The rules of the platform in this case almost blocked the venture's opportunity for further finance and growth. The firm managed to get all investors to agree to be either bought out or pooled and the platform has later changed the rules (Weverbergh, 2013). However, the example serves to show the importance of the contracts made as well as risks for project owners to engage in equity crowdfunding.

3.3 Investors

The possibility for unsophisticated investors to invest directly in early stage ventures is new. Equity crowdfunding allow for equity investments and exposure to the small and risky businesses, leaving out intermediaries and allowing investors to decide exactly how to spend their money and which projects to invest in. The availability of these companies also gives investors better opportunities to diversify their portfolio and gain exposure to venture capital.

Crowdfunding is conditioned by both extrinsic and intrinsic motivations. Equity crowdfunding, in particular, is seen as a mechanism of spreading risk in an investment portfolio, given that funds can be committed in smaller batches across several ventures (Pierrakis & Collins, 2012). While VC and angel investments are generally high-risk, high-reward projects, crowdfunding seeks to balance illiquidity of a financial placement with moderate returns. Important non-financial benefits include the sense of belonging, i.e. being part of entrepreneurial venture (Pierrakis & Collins, 2012) and possibility of interaction, engagement and direct communication with founders (European Commission, 2013b).

Investors may also get voting rights, protecting their interests, especially in avoiding excessive dilution. However, it might not always be possible to vote by mail or over the internet on company

decisions (European Commission, 2013b), which makes it difficult for investors to participate. In this regard, it is also worth considering whether any investor will have the resources and incentive to monitor management as long as ownership consists of a high number of individuals with small stakes.

As previously mentioned, the valuation is a crucial factor for both project owners and investors. Since there is no existing market in which the securities are traded to indicate the value, much emphasis must be put on the valuation. This can be hard especially with limited information, perhaps without any positive cash flow to date, especially for unsophisticated investors. The platforms are vetting for direct fraud, but even if project owners are sincere, it may be difficult to evaluate his or her competences and the true value of the ventures potential and probability of failure. According to the Financial Conduct Authority and the International Organization of Securities Commissions, it is estimated that investors could potentially lose the entire investment in 50-70% of ventures (Aramendía, 2014). Moreover, investors need to account for illiquidity, as there is no active market for these securities. Hence cashing out may only be possible if the venture is sold or goes public.

3.4 Legal aspects

One purpose of equity crowdfunding is to bring an essential advantage to ventures by circumventing the expensive disclosure requirements and extensive process of an IPO, while at the same time allowing the sale of ownership to the general public. However, since equity crowdfunding specific legislation in most countries has not yet been enacted or finalized, platforms generally abide by securities regulation as they seem to act as investment services intermediaries.

Legal requirements, such as disclosure and administrative responsibility towards shareholders that are numerous and geographically dispersed, could discourage companies from utilizing equity crowdfunding. To escape the legal obstacles platforms use a number of legal structures to circumvent requirements. For instance, platforms create indirect investments vehicles via a crowdfunded fund, which encompasses a portfolio of companies and offers the ability to buy a share of the fund, a process less complicated than acquiring equity. Some platforms offer a nominee structure, where it acts as a single legal shareholder that represents all investors who committed money to a project. At the same time, platforms could encourage additional legal construction to avoid securities regulation by setting up investments contracts that imitate equity to certain degrees. Investors could obtain cash-flow rights as a percentage of revenue, but lose their equity-holders status, and rather become creditors (Massolution, 2013).

When regulation has been adapted to allow ventures not to comply with disclosure requirements, however, attention turns to investor protection. The rules are in place to prevent fraud

and allow investors insight into company performance. In addition to platforms performing vetting for fraud and the benefits of the all-or-nothing model, for which investments are not received unless the target is reached, Pierrakis & Collins (2012) argue that social media plays an important part in allowing investors to assess the credibility of project owners.

3.4.1 Europe

At the moment of writing, there is no directive in the EU that would set a normalized legal framework of crowdfunding for member states. Currently, crowdfunding falls under the EU Prospectus Directive (2003/71/EC), which states that national lawmakers have the freedom to implement country-specific promotion regimes for offerings under 5,000,000 EUR and, at the same time, offerings that fall below the threshold of 100,000 EUR do not require a prospectus. As a result, there is no harmonization of legislation of EU member states between 100,000 and 5,000,000 EUR range, in which most equity crowdfunding investments are expected to be accomplished. In regards to equity crowdfunding platforms, there are also differences among EU member states concerning a transaction structure of a platform as "acceptable". Crowdfunding platforms may also be subject to the Markets in Financial Instruments Directive, in accordance with national interpretations (European Commission, 2013b). The complicated regulation makes it difficult to set up equity crowdfunding platforms, as it may be hard to even qualify which regulation it would be subject to. For instance in Denmark, it would require that platforms be accepted as securities brokers, meaning that they would also need to be backed by 0.3-1.0m EUR in equity, which in itself would prevent many from setting up the platform. Moreover, equity stakes are not allowed to be offered to the public, which makes it doubtful that the platforms, even with sufficient finance, would be able to operate in accordance with the current model (Rühne, 2014). Few European countries, including for instance Italy, have adopted a specific crowdfunding regulation similar to the one in USA in an attempt to encourage entrepreneurship and job creation (Krüger & Belaïd, 2013).

United Kingdom

Crowdfunding models, such as rewards-based, donations-based and peer-to-peer lending, are largely unregulated in the United Kingdom. However, as of April 1, 2014, equity crowdfunding regulation in the U.K. has been clarified by the Financial Conduct Authority's "*regulatory approach to crowdfunding over the internet and the promotion of non-readily realisable securities by other media*". The regulation sets forward the categories of investors who can access equity crowdfunding opportunities. For common retail clients, there is now a stipulation that investors must confirm that

they will not invest more than 10% of their net investible assets in equity crowdfunding products (Financial Conduct Authority, 2014). Before April 1, only high-net worth individuals and/or certified investors were able to access such investments, although for most platforms this is done by self-certification with no formal check-up. The regulation has also added new rules in order to secure transparency and control of the information provided on the platforms (Krüger & Belaïd, 2013). In addition, the government has made it more attractive for investors to utilize equity crowdfunding by implementing a tax advantage for these investments.

According the ECN the new regulation of the Financial Conduct Authority (FCA) and the 10% cap will not reduce investment risk, given that the rule cannot be reliably enforced and the 2016 regulation progress monitoring term is too long a period to efficiently reflect market conditions and implement relevant adjustments (European Crowdfunding Network, 2014).

Germany

Legal coverage of equity crowdfunding for platforms stems from the ability to offer and transfer securities or investment products. As such, equity crowdfunding falls under the provisions of the German Banking Act (*Kreditwesengesetz*), which implies that, as a general rule, platforms require a written license from the German Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*). However, there are exemptions for platforms: if only investment broking and contract broking services are provided; only newly issued investment products are offered. Given these stipulations, platforms have to obtain a license under the German Trade, Commerce and Industry Regulation Act (Aschenbeck-Florange, et al., 2013). Under the law, companies cannot issue more than 100,000 EUR in shares, using equity crowdfunding, within a period of 12 months.

In Germany, it is not legal to offer voting rights to the public. Therefore German equity crowdfunding platforms often offer ‘silent partnerships’, which in practice is equity stakes in terms of financial claim, but without required participation in decision-making (European Crowdfunding Network, 2013a)

3.4.2 USA

According to the Securities Act of 1933, equity interests are qualified as securities and imply comprehensive registration with the Securities and Exchange Commission (SEC), as well as significant fees. The Jumpstart Our Business Startups Act (JOBS Act), signed into law in April 2012, has the potential to critically change the crowdfunding landscape in the United States (U.S. Securities

and Exchange Commission, 2012). Although Title II of the Act was signed in September 2013, it caters to accredited investors only. Title III of this Act, which as of May 2014 was pending implementation, will allow unaccredited investors to tap into equity-based crowdfunding. According to the JOBS Act entrepreneurs and small business owners will be able to raise up to 1m USD (~0.75m EUR) through crowdfunding platforms, within a 12-month period, without registering with SEC. Maximum dollar investment per investor depends on individual annual income or net worth (if annual income or net worth is under 100,000 USD, individuals are permitted to invest a maximum of 2,000 USD or 5% of their annual income or net worth, whichever is greater, per 12-month period; if greater than 100,000 USD, up to 10% of annual income or net worth, whichever is greater, per 12-month period, not exceeding 100,000 USD). As of April 2014, only accredited investors (with min. 1 MUSD in net worth or 200,000 USD annual salary for the past three years) are allowed to register and invest on equity crowdfunding platforms. It is therefore expected that equity crowdfunding in the United States will encounter higher investor interest and stronger traction compared to reward- or donation-based investments, with the passage of Title III of the JOBS Act,.

Equity crowdfunding is still in its early stages of evolution. The development of a regulatory framework in key global markets may have a crucial impact on the prospects of this funding and investment type of platform. According to a CFA Institute issue brief regulators have to focus on six key areas: 1. Integrity of platforms operations; 2. Transparency by issuers and platforms; 3. Investor access and appropriateness; 4. Due diligence and safeguards; 5. Small and Medium Enterprise access and focus; 6. Corporate governance protections (Aramendía, 2014). In Europe, in particular, regulation has to include the particularities of all member states, to ensure that the platforms, the owners, and the investors are protected.

4. Finance theory

4.1 Financing for positive NPV investments

According to conventional corporate finance theory, all positive net present value (NPV) projects should be financed (Berk & DeMarzo, 2011). However, a number of assumptions are required for this to hold in practice, among others perfect capital markets and symmetric information. With imperfect capital markets, there might be some firms or projects with positive NPV that are still unable to raise the capital needed. For example are banks constrained by regulation with respect to how risky loans or how many risky investments they can make. Since startups in general are

considered very risky and with high default probability, a bank may not provide the finance even though a correspondingly high interest rate would make the investment profitable on expectation. VC funds and business angels also typically prefer to operate within a certain sector or stage in which they have a competitive advantage and may achieve excess return. Due to the transaction and search costs connected to finding profitable investment opportunities, it also often requires a certain scale or the right connections in order to attract VC or angel investments. Thus, these investors may also choose to pass on positive or zero NPV ventures. Such constraints can make it difficult even for valuable ventures to be successful, leaving room for alternative ways of financing to provide capital to small or unconnected projects and companies.

4.1.1 Capital structure and information asymmetries

Capital structure decisions are highly important in the context of an entrepreneurial firm. In finance theory, capital structure refers to how a firm finances his assets by a mix of different financial securities (Brealey, Myers, & Allen, 2013). Carpenter and Petersen (2002) articulate that in small firms information asymmetries are higher, as available public information is scarce. As a result small firms are seen as risky investments, and receive only limited amounts of financing at higher prices (Shane & Cable, 2002). Capital decisions and the use of both debt and equity have significant consequences for bankruptcy risk, operations, firm performance and growth potential. Entrepreneurs finance their ventures by internal or external sources. In cases where the entrepreneur does not possess internal financing options, he or she must raise capital through external sources by issuing debt or equity.

In addition to equity, an entrepreneur may acquire external funding in the form of debt. Most of the external debt finance is provided to small businesses by financial institutions like commercial banks. Collateral and guarantees are required to grant loans and to offer credit on favorable terms. In contrast to equity, the entrepreneur carries most of the risk himself and traditional debt providers are passive investors. While they do not seek control, they only bring the financial capital. Nonetheless debt holders may assist in monitoring in firms with high financial risk.

In a perfect market, the value of the firm is not affected by its choice of capital structure (Modigliani & Miller, 1959). However, due to information asymmetries, the market for startups is imperfect, which may cause firms with profitable investment opportunities to have difficulties raising capital. For a given venture or project, the project owner is likely to have superior knowledge regarding the expected performance and the likelihood of success compared to investors (Berk & DeMarzo, 2011). This may cause adverse selection, or a lemon problem, in that investors cannot tell

the good firms from the bad due to private information held by the owner, and the ones that are willing to sell will be those owning the bad companies. Ahlers et al. (2012) state that even more information asymmetries are present in crowdfunding, due to lack of previous records and disclosure requirements, making an assessment of true value difficult for investors. This further means that even positive NPV ventures might be unable to raise the necessary funding.

Pecking order theory

To understand the preferences of entrepreneurs with regards to financing sources, the pecking order theory must be regarded. The theory states that owners seek to fund their companies through internal sources first. Without sufficient internal sources, a company owner prefers to raise debt rather than equity, because full ownership of the business is maintained and benefits from the tax deductions of interest expenses are achieved (Myers & Majluf, 1984). Another argument relates to the existence of private information. To avoid adverse selection, managers with positive private information must send credible signals to investors to support the claim of a company's promising future. Simply stating in public that the company is expected to do well is not a credible signal, as managers of both good and bad companies will have the incentive to say so when raising capital. However, in order to take on new debt, the manager must be convinced that the company will be able to meet the payments. On the other hand, a manager or owner will only have the incentive to issue new equity if the equity is fairly or over-priced. Knowing the signals each of these send to investors, a manager or owner will always prefer to issue debt rather than equity (Berk & DeMarzo, 2011). Watson and Wilson (2002) found that the pecking order theory was most prominently visible in closely held firms, where information asymmetries would be most recognizable. Berger and Udell (1998) established that new firms are more informational opaque than existing companies. Additionally, Norton (1991) found that small, high-growth companies generally followed the pecking order theory in the setting their capital structure. When considering the case of equity crowdfunding, it seems reasonable to believe that the project owners chose this due to lack of other options, disregarding benefits aside from the ability to raise capital.

Trade-off theory

Ventures might not have the same incentive to take on debt as do larger corporates, even if that had been a possibility. The reason for this argument is that a positive EBIT is required for a company to take advantage of the tax deductibility (Berk & DeMarzo, 2011), which is uncommon for early stage ventures. According to the trade-off theory, the value of a levered company equals the value of

the company unlevered plus the present value the tax shield minus the present value of cost of financial distress, i.e. not being able to meet your debt payments:

$$V(L) = V(U) + PV(TS) – PV(CFD)$$

Due to a high probability of default for startups, the expected cost of financial distress is likely to be high, which are normally paid for by equity holders as banks expect this when a loan is granted, and without being able to utilize the tax shield fully, there is little advantage for this type of companies to raise debt rather than equity. There are some agency cost and benefits of leverage. The risks include a possible debt overhang or debt covenants, which both have the potential to make managers unable to make positive NPV investments at a later stage. The benefits usually associated with high leverage include closer monitoring of managers to avoid wasteful investments, such as private benefits, and risky investments, which will be discouraged from the threat of bankruptcy. However, these benefits are not likely to be a big concern for ventures as the ownership is concentrated and the owner is the CEO (Berk & DeMarzo, 2011). Thus the cost of having debt may be more likely to exceed the benefits for an early stage venture.

When choosing equity financing, and especially crowdfunded equity, the company has an incentive to decrease the extent to which information asymmetries exist (Berk & DeMarzo, 2011). With less private information, investors have less uncertainty, which should then serve to bridge the valuation gap between the owner and the investor. According to Pierrakis & Collins (2012), the internet and social media are being used in order to limit information asymmetries, indicating a clear advantage of crowdfunding using technological advances to favor financial markets. As an example, a well-developed profile on social media with many references etc. serves to show the credibility of the entrepreneur. The use of the internet and cutting out intermediaries also reduces transaction cost, which is another hinder for perfect capital markets (Berk & DeMarzo, 2011).

4.1.2 Ownership structures

Typically for startups, the owner and the manager is the same person, thus incentives are aligned. However, when there are many owners, or shareholders, of a company, it is not feasible with direct control and the day-to-day operations are delegated to a CEO, thus creating a separation of ownership and control. The incentives are no longer aligned, when the CEO compensation is not fully correlated with the value of the company, leading to agency problems between the manager and the shareholders (Berk & DeMarzo, 2011). Agency problems pose a potential risk for investors in equity crowdfunded projects. The interests of the founder may be different from that of investors. The founder may be

more risk averse, since he or she might have all wealth tied up to the company. There could also be an emotional connection to the project, a drive to establish a big or influential company or a desire for being in control, all which could be more important than profit to founders. The differing incentives may cause problems with regards to the monitoring of management in the ventures. In listed corporations, the framework of corporate governance exists exactly for this purpose. It consists mainly of the board of directors, whose purpose is to participate in major decisions, caretaking the interests of the shareholders, compensation policies, and regulation (Berk & DeMarzo, 2011). However, the lack of legal framework, such as disclosure and board structures, as well as the sudden dispersion in ownership without any outside controlling investor to monitor may limit the ability of shareholders to exercise their rights to enforce own interests. One problem is the small stakes owned by each individual investor. It may cause active monitoring to be too expensive for a single investor to undertake, thus creating a free rider problem, in which all investors are better off if someone else monitors, and resulting in a case where no one will actually monitor what goes on in the company.

4.2 Venture capital financing

Young ventures are generally financed by angel and venture capital investments when bootstrap financing opportunities are exhausted. While angel finance and venture capital can represent relatively small stake of ownership of a business, they do provide some important benefits, which increase the probability of success. However, entrepreneurs face a trade-off when they choose to issue equity to external investors, due to the loss of equity stake.

There are important differences between angel finance and venture capital, although both are equity financing suited for young ventures. The investments of business angels are not intermediated as the funders place their own money into companies. The business angel networks generally consist of high net worth individuals, with a high-risk, high-return investment profile. They are often successful entrepreneurs who have cashed-out on a previous venture and are able to contribute with both human and financial capital to new ventures (European Commission, 2013a). The venture capital market is intermediated and regulated, given that venture capitalists invest funds on behalf of venture capital funds, raised from outside entities, both companies and individuals. Venture capital firms have structured methods of identifying, growing and selling promising young companies. Due to focus of funds, they can be expected to bring in some expertise and experience for a specific industry or geographic region. As previously mentioned, there is a substantial difference in the amounts provided in each deal from business angels and VCs respectively, with VCs often have larger resources available.

Two major differences between VC and equity crowdfunding are the sophistication of the investors and the flexibility of the business model. As mentioned before, with regards to information asymmetries, the private information held may cause a gap in the valuation which the entrepreneur deems fair and the price the investor is willing to pay. In VC investments, there are a number of measures to mitigate such discrepancies in valuation. These include for instance the opportunity to make staged investments depending on reaching certain milestones, or having the equity stake received by the VC fund depend on whether the forecasts are actually achieved. VCs also sometimes require preferred shares or liquidation preferences. In addition, VC funds will usually require the management team to invest personally so that they both enjoy the upside and suffer the downside, if the company does not perform as expected. This ensures both the incentive for the manager to be truthful and realistic in the information provided prior to making the deal, while preventing moral hazard once the deal has been completed, ensuring the alignment of interests. Such measures are not yet available within crowdfunding, as platforms do not offer the possibility of withholding parts of the funded amount depending on reaching milestones, and the investor cannot know with certainty how much of the entrepreneur's personal wealth is tied up in the project. Pierrakis & Collins (2012) suggests that platforms consider the opportunity to offer staggered investments in order to take advantage of these measures from VC.

4.3 Investor motivation

According to the efficient market hypothesis, no positive NPV investments should be possible from a financial investor perspective, since these are limited by the ability to get private information. However, this also means that any investor holding the market portfolio should expect to receive a fair return for the risk assumed (Berk & DeMarzo, 2011). As crowdfunding is likely to have more information asymmetries, this might present a danger for unsophisticated investors as a fair return cannot be expected simply by diversifying exposure. However, evidence also shows that unsophisticated investors do not necessarily hold the market portfolio due to, for example, familiarity bias, overconfidence, sensation seeking, or simply caring about wealth relative to peers, encouraging investors to divert from the market portfolio in an attempt to earn excess return (Berk & DeMarzo, 2011). Thus one might argue that the mere existence of crowdfunding is not the factor to encourage risk taking among unsophisticated investors, but simply an opportunity for investors who would do so in any case.

5. Literature review

Attracting outside capital is a significant problem for any venture. The lack of collateral, stable cash flows and the information asymmetry between the entrepreneur and the investors hinders the ability of ventures to raise capital. Schwienbacher and Larralde (2010) investigate the circumstances when entrepreneurial ventures should focus on crowdfunding rather than on other forms of funding. Their analysis yielded some pieces of advice for potential contributors. They articulate the importance of networks as communication between entrepreneurs and the people that believe in their project is more valuable and effective than formal channels of communication. Moreover, they suggest that knowing how to efficiently communicate with Web 2.0[2] is essential. Dushnitsky (2013) also highlights communication with contributors. Especially the marketing campaign, with a targeted and dynamic video pitch, is key to a successful crowdfunding round, but the entrepreneur also needs to keep engaging with contributors by updating on the site and be open to advice and creative input from investors. This is supported by Burtch, Ghose, & Wattal (2013), who find marketing to be closely correlated with the success of crowdfunded projects. Reducing information asymmetry is an important aspect of successful funding. Entrepreneurs need to make their businesses look attractive for potential investors, while publicizing all relevant information. Entrepreneurs need to establish a platform that would motivate shareholders to participate actively in the company operations and have to welcome any sort of feedback from investors, as it could benefit their start-up's operations. Furthermore, projects need to have an interesting edge and being innovative in order to improve the success rate of funding (Schwienbacher & Larralde, 2010).

One study compares two main crowdfunding models, rewards-based and profit-sharing, and finds that funding needs relate to the type of model, with pre-purchasing and rewards-based being on the low side and profit-sharing on the high side (Belleflamme, Lambert, & Schwienbacher, 2013b). This is consistent with the statistical findings regarding the global crowdfunding market, where the average equity crowdfunded project attracted investments in a double-digit factor of other project types. The study also highlights that the profit-sharing model signals high-quality products, and is generally more suitable to early-stage investments because of higher uncertainty. Finally, according to the research, the chances of success for a crowdfunded project depend on the amount of non-monetary or community benefits provided to the investor.

[2] Web 2.0 refers to dynamic web, focused on allowing people to connect, collaborate and share information online.

According to Pierrakis & Collins (2012), not all types of companies are equally suited for crowdfunding. First of all are companies operating with goods that the average investor understands more likely to be successful in raising funds, making consumer goods firms more suited than high tech companies or those that involve complex issues in general. Another advantage with consumer goods is that you can exploit the advantage of promoting and showcasing the existence of a market for purpose of attracting professional investors later on. Moreover, ventures that are highly sensitive to sharing financial details and trade secrets not well fit for crowdfunding, whereas those focusing on social gains may benefit from the non-financial motivation this gives investors. Gompers et al. (2010) argue that entrepreneurs having previously founded ventures are generally better at starting and growing new companies. However, they are also likely to already have connections to professional investors and other personal resources, thus taking out a great deal of the benefit of engaging in crowdfunding. Hence these entrepreneurs should be better performing, but less likely to start a crowdfunding round in the first place.

Mollick (2014) sheds light on how entrepreneurial actions may affect the ability to attract external financing through crowdfunding and his analysis, based on a dataset that includes over 48,500 observations, highlights that the project quality along with personal connections on social networks are associated with success.

Belleflamme, Lambert, & Schwienbacher (2013a) investigate the characteristics of individual crowdfunding practices on a hand-collected dataset of 44 start-ups. A striking result that contradicts the findings of other studies is that the use of social networks does not seem to enhance the amount of funds raised. Furthermore, the entrepreneurial initiatives that generate products tend to attract larger amounts of capital than those that offer services.

A central contribution to the limited extant empirical literature on factors that influence the success rate of fundraising in equity crowdfunding is provided by Ahlers et al. (2012). They argue that the typical crowdfunding investor will lack the sophistication and experience of business angels as well as the scale of the investment, which makes it both difficult relatively costly to value the investment opportunities. Thus investors will look for signals of project quality, providing a good incentive for project owners to make information available on the platform. They have performed an initial empirical examination of the effectiveness of different types of start-up indicators and characteristics to convince small investors to allocate financial resources in equity crowdfunding. They examined the influence of 4 categories of factors, including the financial roadmap, external certification, board experience, risk level, previous investment and speed of investment. The dataset

was tested for industry, year and location fixed effects. Their findings reveal that from the broad categories of factors, it appears that the risk level, measured among others by equity offered; the number of board members; the financial roadmap, characterized by the exit strategy; along with the board experience, measured by education degrees, are crucial for the success of fundraising. Additionally, financial forecasts and internal governance are important mechanisms that augment the likelihood of funding.

Furthermore, despite the common belief that external certification including patents and government grants would boost success, Ahlers et al. (2012) highlight that external certification had either little or insignificant influence on the success rate. Pierrakis & Collins (2012) agree with regards to the importance of signals, but highlight the signals that certain other investors send. E.g. the participation of sophisticated investors such as business angels may indicate financial viability, whereas friends and family show trust in the commitment of the entrepreneur.

Belleflamme, Lambert and Schwienbacher (2013a) also explore the drivers of fundraising success and they find that nonprofit organizations should be able to raise larger amounts and thereby be more successful in attaining their targeted funds. This result is consistent with the argument that non-profit entrepreneurs find it easier to raise financial resources from donors and other potential investors, as their operations are not purely profit-driven. Despite that, Mollick (2014) points out that non-profit sharing crowdfunded projects either gain small or fail big, hence solely being non-profit does not ensure success.

Etter, Grossglauser, & Thiran (2013) also investigate which start-ups are likely to succeed using a dataset of campaigns from Kickstarter, a reward-based crowdfunding platform. They examine the success predictors based on two categories: time-series of money pledged and social attributes. Their findings suggest that the predictors that use time-series of money pledged, i.e. how much money is provided early in the funding window, appear to reach high prediction accuracy with more than 85% of correct predictions after only 15% of the duration of a campaign. Furthermore, the social attributes appear to have a reduced predictability rate in general, but they bring a substantial boost in the first moments of a campaign, especially when other signals are not available.

To sum up, evidence from previous research on crowdfunding points to ventures being more successful in raising capital through this financing model provided they possess certain characteristics. These include being early stage, having an innovative idea, having high project quality, offering products rather than services and preferably within consumer goods. It is also argued to be important with a large and experienced board, a clear exit strategy, and giving away

responsibility by offering high equity stakes. Ambiguous results have been found with regards to whether social orientation is a promising trait to attract investors. Regarding the project owner, he or she is more likely to be successful with previous experience and a substantial social network. Lastly, more investors are attracted to deals which sophisticated investors or friends and family of the project owner also have invested in.

6. Data and methodology

6.1 Data sources

For the purpose of the research, the data has been collected from active equity crowdfunding platforms. To identify the specific list of platforms, the website thecrowdcafe.com[3] has been used as a market sizing reference tool. It contains a global database over different types of crowdfunding platforms. The list of equity crowdfunding platforms has further been compared to other available lists to avoid exclusion. To narrow down usable sources of data, each equity crowdfunding platform has been assessed and checked for following requirements: (1) platforms should be active, with at least one completed equity-crowdfunded project before 28 February 2014 and no capping on the number of investors; (2) platforms should automatically allow for viewers to register and openly observe data on completed projects; (3) platforms should keep online data on all completed equity crowdfunding projects, not only selected case studies.

A considerable number of platforms are from the United States, where access to data is blocked by the requirement to provide investor accreditation certification. As a result of the assessment, 10 equity crowdfunding platforms matched all requirements and were selected for the sample.

Table 1 Summary of sampled platforms

Platform	*Country*	*Region of activity*	*%-share of funds raised*	*%-share of number of projects*
Banktothefuture	United Kingdom	United Kingdom	2.1%	2.1%
Companisto	Germany	Europe	8.0%	8.3%
Crowdbnk	United Kingdom	United Kingdom	1.5%	0.3%
Crowdcube	United Kingdom	United Kingdom	41.9%	29.0%
Eureeca	United Kingdom	MENA	1.0%	1.7%
Fundedbyme	Sweden	Global	6.1%	6.9%
Invesdor	Finland	Northern Europe	4.1%	12.8%
Seedmatch	Germany	Germany	20.7%	17.6%
Seedrs	United Kingdom	Europe	12.5%	15.5%
Symbid	Netherlands	Europe	2.2%	5.9%

[3] http://www.thecrowdcafe.com/crowdfunding-platforms/database/

The identified equity crowdfunding platforms are located in the EMEA region. The platforms are split geographically between United Kingdom – 5, Germany – 2, and one each for Sweden, Finland, and Netherlands.

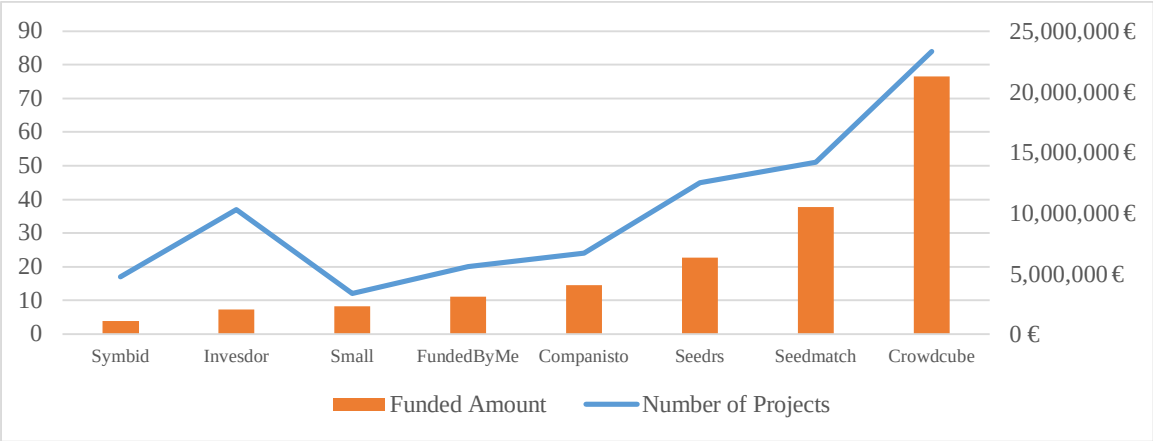


Figure 3 Distribution of Funded Amounts and Number of Projects per Platform

All available data on completed equity crowdfunding projects has been collected. However, only campaigns of individual companies were included in the sample. As a result, two observations from "Seedrs" were excluded given that they are funds investing in two or more companies.

6.2 Variables and dataset construction

The main goal of the research is to explore the effect of certain project-specific characteristics on the equity crowdfunding investment decision-making process.

Two different models of equity crowdfunding platforms have been used in the sample, the all-or-nothing model, i.e. only if the target amount is met, money is collected from investors, or keep-it-all, in which all funds are passed on to the venture no matter whether the target has been met or not. The largest platforms fall into the first type, hence only projects with funding above 100% are kept on the platforms. Since most observations in the sample are successful in raising the targeted amount, and due to differences in platform rules, the success factor used in this study is the actual amount raised from investors, i.e. the venture raising the highest amount is considered the most successful independent on the target set up. In order to explore the impact of factors on the decision-making process more thoroughly, the total amount raised has also been disaggregated into number of investors contributing to a given project and the average amount invested by each. This allows seeing whether certain explanatory variables impact the amount raised through attracting more investors, by attracting higher amounts from each investor, or from a combination. Thus regressions for three

different dependent variables have been used, *number of investors*, *average amount*, and *total investment*. Explanatory variables have been structured into three groups: 1) company characteristics, 2) financial indicators, and 3) team composition.

Data was extracted from each platform using an automated data-scraper software - Visual Web Ripper. The software scans webpages, retrieves specified data, and exports it to relevant file formats. For each platform, a hierarchical sitemap has been developed with relevant fields from where data would be collected. This allowed a systematic and comprehensive extraction of all data pertinent to a project. While quantitative figures were directly exported to Excel, all qualitative data was manually scanned and translated into variables, as explained in details in the following section.

Dependent variables

For each investment, platforms provided information on the total amount invested, in local currency and converted to EUR[4] (*total investment*), the number of investors who committed their funds in the specific campaign (*investors*). In addition, the average amount of funding per investors (*average amount*) has been calculated for each project. Each of the three dependent variables has further been converted to a logarithm to allow for exponential effects of the explanatory variables due to high variation in first mentioned.

Company characteristics

Company information comprises data from the campaign summary and the detailed company overview, for each investment project. Each platform uses a different industry category classification (*industry*), and given this consideration, we have re-assigned each company to one of the following areas: consumer products; entertainment; IT & telecom; professional and business services; and other industries. Additionally, the basic information was manually scanned for any environmental or ethical scope or business implication (*environmental/ethical*). Given previous research has found evidence of a 'big city effect', a dummy variable for companies located in big cities has been established[5] (*big city*). Dummy variables were created for each of the variables mentioned above.

Furthermore, the information regarding the development stage and company position in the business lifecycle was set as a categorical variable (*stage*), with four positions: seed, start-up, early stage, and growth. For some platforms, deals are already split into these categories, and for the ones

[4] Values converted to EUR from local currencies, using the average of observations through period exchange rates, for each respective year, provided by the European Central Bank

[5] For the purpose of this sample, major cities in the sample are considered Hamburg, Berlin, Munich, Amsterdam, London, Dubai, and Ammam

without, a category was assigned based on description of the company on the platform. For the purpose of regressions, these have been converted into numerical values, 1-4, with 1 being seed stage.

Finally, company age at funding date (*company age*) has been established. In cases where date of incorporation was not stated at the platform, the approximate date was found via online information sources, mainly the professional networking websites LinkedIn and Xing.

Financial indicators

This section describes the financial indicators that were used in the analysis. The financial indicator for *pre-money valuation* has been derived from the pledged amount and the equity stake received by investors. The variable thus refers to the valuation of the company prior to the funding.

Pre-Money Valuation = Funding Amount * (1/Actual Ownership – 1),
where *funding amount* is the total amount of money raised for a project,
actual ownership is the total ownership of the investors.

Firstly, what can be interesting to investors is for what reason the venture is attempting to raise capital, i.e. what will the capital provided be used for. Although most platforms do not expressively contain a section describing the purpose of raised financing, the qualitative information has been analyzed and five funds usage categories (*purpose of finance*) have been assigned. To get a deeper understanding of the financial affairs of the crowdfunding investments, two other variables have been investigated. The *previous crowdfunding rounds* measure describes whether the company had any previous crowdfunding rounds. The second is p*revious business angel investments*, which refers to whether the company has a business angel invested in the company prior to the crowdfunding campaign. The data for both variables have been identified in the project description on each project's platform webpage.

Team composition

Most platforms identify the CEO of the fundraising company either in a special summary or in a common team section on each project's webpage on the platform. Several variables were extracted from those summaries including: *team size, CEO gender, CEO age, CEO previous ventures,* and *CEO years of experience.* Since the different platforms do not have a standardized list of requirements for the summaries, some of the variables were not provided on the project webpage of all platforms. The information has, in these cases, been taken from LinkedIn and Xing, given that these are likely places investors would look for information. As the purpose of the research is to identify what information matters to investors, a general principle used in the data collection has been to extract information as

it is observed by investors. As such it is not necessarily important with actual facts, but the perception of investors. For instance, if information regarding industry experience of the CEO is not readily available in the description on the platform or on his or her personal LinkedIn profile, the experience is set equal to zero. This is an important assumption for the results, as it is not believed that unsophisticated investors will look much beyond these and therefore cannot take such facts into account. This is supported by Pierrakis & Collins (2012), stating that crowdfunding investors use social media to evaluate project owners.

6.3 Descriptive statistics

The dataset used in this study contains data on 290 equity crowdfunding campaigns (summarized in Table 2 below), collected from ten crowdfunding platforms in the EMEA region, from the inception of each platform to February 2014, with a total funding value of 50.7 million EUR, and backed by 38,004 investors[6].

Table 2 Descriptive statistics

	# Obser-vations	Mean	Std	Min	Max
Dependent Variables					
Total amount raised	290	174,976 EUR	305935	0	3,098,741 EUR
Number of investors	245	155.1	194.1	0	1,298
Average investment	245	4,144 EUR	17,155.9	0	170,515 EUR
Company Characteristics					
Big City	290	0.40	0.49	0	1
Stage	290	2.14	0.97	1	4
Company age (in years)	288	2.36	2.56	0	24.4
Environmental/ Ethical	290	0.08	0.27	0	1
Financial Indicators					
Previous CF rounds	290	0.12	0.33	0	1
Previous BA investments	290	0.13	0.34	0	1
Team Composition					
Team size	290	2.8	2.0	1	12
CEO age	290	36.8	10.0	21	70
CEO gender	290	0.11	0.31	0	1
CEO previous Ventures	290	0.48	0.50	0	1
Industry experience	290	5.3	7.3	0	37

On average, each project has raised 174,976 EUR, the average number of investors for deals in which this information was available is 155, with an average amount of 1,168 EUR from each investor. The average age for a company at the time of the crowdfunding round is 2.4 years. Previous

[6] Number of investors, and hence also the average investment per investor, was unavailable for Seedrs

crowdfunding and business angel investments were received in 12% and 13% of cases, respectively. On average, founders sold a 12% ownership stake, with the average pre-money valuation being 2.25 million EUR.

At the funding time, CEOs were on average 37 years old, with 5.3 years of industry experience, having founded ventures in 48% of cases, and leading a team of 3 people. Only 11% of CEOs from the sample are female.

The location of most of the projects is either from UK, Germany and Nordic countries. Projects from these regions account for 94% of the cases included in the dataset. Only 4% of the cases were from the Netherlands and another 2% from MENA. Moreover, four out of ten ventures are located in big cities.

The largest category sector-wise is consumer products with 30% of the sample, followed by IT & telecom with 26% and professional and business services with 23%. In addition, 17% were concentrated on entertainment products and services, with 4% remaining for other industries. Out of the total sample, 8% of projects market themselves as having an environmental or ethical scope.

As for the purpose of funds, the two most common categories are product development and marketing/launch of product or service, which account for 40% and 41% respectively. 19% would focus their allocation of the funds on building an infrastructure, while 17% of the ventures intend to use the financial resources for geographical expansion. As implied by the numbers, some companies describe more than one purpose of the amount sought in the round. One in ten campaigns lacked any information regarding the prospective usage of raised capital.

6.4 Bias

The sample used for this study is collected from primary data sources, i.e. the platforms in which each of the deals have been completed. The advantages of this method are that no information is excluded or limited by what is contained in a database.

However, equity crowdfunding in its current form has only been available for a limited time period, which limits the observations by the number of deals that have actually been completed so far. Furthermore, the data is limited to the deals from platforms disclosing information on completed rounds. Consequently, US platforms are for instance excluded as data is only available to certified investors. Consequently, the sample looks to be representative apart from the missing American data. This limits the geographical diversity to contain mainly Northern European companies, as the platforms in this region are the ones were information is publicly available. However, in equity crowdfunding, 98% of deals are expected to have been within Europe and North America in 2013.

For most platforms, companies that did not reach the bar, for which they receive the investments made, are not shown either.

Having a small sample increases the minimum detectable effect, leading to a possibility of not identifying an effect when there is in fact one. However, as of the moment of writing, the sample covers all major platforms with openly available data, which should increase the credibility of the evidence. Nonetheless, it leaves room for additional findings at such time as the financing model is more established and more observations are available.

There is also a sample selection bias which must be considered when analyzing results. This arises from the fact that not all types of individuals and companies would chose equity crowdfunding as a financing method in the first place. For instance could an overrepresentation be expected of CEO's knowledgeable about use of internet and social media, creative persons likely to be early adopters of technology, entrepreneurs with lack of own funds and connections to sophisticated investors, high risk projects that do not qualify for bank finance, industries not currently attractive to VC funds etc. Moreover, the limited presence of failed rounds leads to a bias, in that success is not measured as the ability to achieve targeted funds, but rather as raising a higher amount than the average successful company. Thus it should be kept in mind that variables found to have a negative effect does not mean that those companies cannot raise capital through crowdfunding, only that they raise lower amounts.

6.5 Regression method

In order to evaluate the effects on the above-mentioned dependent variables, Ordinary-Least-Squared (OLS) regressions will be performed. The analysis will include bivariate regressions, as well as multivariate regressions for selected variables in which certain controls are added to evaluate the actual effect from the explanatory variable in question. Since several platforms have been used in this sample and due to the variety in rules and focus of different platforms, platform fixed effects have also been accounted for in all regressions. The four biggest and most successful platforms in terms of percentage raised are kept separately, while the 6 small platforms have been pulled as only few observations exist from each. The fixed effect is included in order to see the effect of the selected variables even within platforms.

7. Results

In this section, the data set will be analyzed with regards to identifying success criteria for ventures in equity crowdfunding. Firstly, notable correlation coefficients (Table 10 in appendix) among the variables will be presented, after which an in-depth analysis of simple and multivariate regressions will be performed.

7.1 Correlations

It seems that whether the target amount is reached or overfunded depends more on the number of investors than the average amounts contributed by each individual. This indicates the existence of a crowd-effect, in which few investors early on lead to many followers. In this case, project owners will have to attract the crowd in order to be successful. This corresponds to the argument by Etter, Grossglauser, & Thiran (2013), stating that investors look for the projects, which have already been approved by others, limiting the time and effort required to do own due diligence.

Companies that have been through at least one successful round of equity crowdfunding generally raise higher amounts. So do ventures, which have a business angel invested in the company. Referring to Pierrakis & Collins (2012), this may be seen as a quality stamp on the venture as most unsophisticated investors to not perform sufficient due diligence themselves, thus attracting many investors. Being second round and having a business angel invested in the venture are, however, also positively correlated. This further indicates that many ventures find business angels between rounds, which may confirm that having a successful round of crowdfunding does in fact give rise to alternative financing opportunities and good connections. Nonetheless, it should be kept in mind that the sample, for which a business angel or previous round has been identified, is small, and results here might simply be by chance. On the other hand, the lack of secondary rounds could indicate that a successful round gives good connections and opportunities for further financing, limiting the need for additional rounds. One question that remains, should this connection be verified, is why ventures would raise a second or third round of finance if it already has a business angel or VC fund on board. Although theory says that equity crowdfunding is more suitable for early stage ventures, the later stages within the sample set are positively correlated with a higher target amount. The reason for this could be that all observations are early stage, but within that range, more funding is typically needed the farther the venture is in the process, and the higher are valuations, thus owners can seek to raise a higher amount without giving up too much equity. The correlation may, however, also be influenced by secondary

rounds that are later stage than first rounds. Company age is positively correlated with a higher total invested amount, but also with stage and target amount, which could be the explanation.

Stage is also correlated with purpose of funding. Product development and marketing is more present for earlier stages, while geographic expansion and infrastructure improvements come in later stages. This can be explained by different needs typical for different stages, but may also be partly biased by the fact that purpose of funding may have influenced the stage classification.

As could be expected, CEO age is positively correlated with industry experience and having founded a venture previously. The team is likely to be bigger when the CEO is young, the venture is in early stage, and the CEO has not previously founded a company.

Being female has negative correlations to both the number of investors and the average amount provided by each investor, leading to lower success rate given the definition. However, there might be some sample selection bias in that the ventures with a female CEO are negatively correlated to pre-money valuation and the target amount, thus being smaller and having either less need for finance or being less ambitious with regards to expansion. Female entrepreneurs are mostly present in consumer products, and also tend to be younger. Explaining the latter could be population trends, and the increased presence of working women in younger generations.

Founders of IT & telecom companies in the sample tend to be older and more have done previous ventures, whereas founders of consumer products ventures are younger and less experienced in comparison. A possible explanation is that this sector requires substantial know-how, whereas consumer products are easier to understand. Looking at the two industries, there is also a correlation to company age, with IT & telecom companies being younger and those of consumer products being older. This could indicate a trend of founders starting up a new venture, grow fast, sell it for large profit, then starting over with a new. On the other hand, founders of consumer products companies seem more inclined to build slower and keep the company for longer. IT & telecom companies are negatively correlated with number of investors, confirming the point of Pierrakis & Collins (2012), that unsophisticated investors have less knowledge about high tech, and are less likely to invest in fields they do not understand, whereas consumer products, apps, and entertainment is easier to relate to. It can also be seen that environmental or ethical ventures are correlated with higher CEO age.

Lower equity stakes are offered in Germany and higher in UK. In addition, the number of investors is higher for German ventures and lower in UK. There are some clear differences in percentage of target reached depending on the platforms, which is due to the rules of the platform in question. Finally, there is some evidence of specialization or clustering of sectors within different

platforms, Professional and business services from Seedmatch, consumer products at Crowdcube, and IT & telecom ventures at Invesdor and the smaller platforms.

7.2 Regression analysis

The following will explain the results from the regressions. An analysis will be made of selected parameters' influence on the amount raised in an equity crowdfunding round, split into the number of investors and the average invested amount. The parameters are split into three categories, concerning the team, financials, and company characteristics respectively in order to analyze what information impacts whether and by how much an investor contributes to the company. All explanatory variables have been analyzed by first making a bivariate regression on each of the three dependent variables, after which different controls have been added to selected regressions in order to confirm the existence of a relationship.

7.2.1 Company characteristics

The average amount provided by each investor as well as the number of investors seem to be higher for ventures located in big cities, leading to a significantly higher total investment for these ventures. The effect on total investment is still significant when controlling for platform fixed effects. Thus having established a venture in a big city seems to lead to more investments. When using industry as control variables in a multivariate regression, while also including platform fixed effects, the big city factor affects the total investment as well as average investment (Table 11 in appendix). The reason may be that companies with growth ambitions for example are more likely to set up in a large city, and it may also be a contributing factor to media attention as more people will have heard of a company located in a larger city.

Table 3 Bivariate regressions with company characteristics factors

X \ Y	Number of investors	Average investment	Total amount raised
Stage	0.01	0.15***	0.16***
w/platform FE	*0.16**	*0.01*	*0.18*
Company age	-0.00	0.00*	0.00
w/platform FE	*-0.00*	*0.00*	*0.00*
Big city	0.31***	0.16*	0.46***
w/platform FE	*0.09*	*0.13*	*0.26**
Environmental/Ethical	0.13	-0.15	0.03
w/platform FE	*0.30****	*-0.20**	*0.13*

Note: The table shows betas of regressions with one explanatory variable, log(y) = a + b*x + e
Coefficients in italic are same regressions, but controlling for platform fixed effects.
* p<0.05; ** p<0.01; *** p<0.001

When isolated, the stage of the venture positively impacts the average and total investment. However, this effect is no longer apparent when controlling for platform fixed effects, thus it seems the platforms attracting the highest amounts are the ones focusing on later stage ventures compared to seed investments. Interestingly, the regressions now show that within platforms, later stage ventures do attract investments from a higher number of people. This may be explained by a lower perceived risk of later stage venture due to less uncertainty by small and unsophisticated investors. Controlling also for the companies in secondary rounds (see Table 12 in appendix), however, the stage of the venture cannot be said with certainty to have an effect. Thus the effect previously found may be skewed due to the effect from secondary rounds that are likely to be later stage than the first round for a given venture.

There is no evidence found of company age impacting the success of a crowdfunding round after controlling for platform fixed effects.

Describing the venture as addressing environmental or ethical concerns has a positive effect, within platforms, on number of investors, which is offset by lower amounts per investor, not significantly impacting the total amount. One explanation could be the fact that investors are motivated by non-financial incentives associated with ventures having an ethical or environmental scope, while larger investors might put more emphasis on financial return, fearing that ethical concerns might let the entrepreneur prioritize differently.

With regards to the sector, professional and business services and consumer products raise highest amounts. However, there is no significant correlation when controlling for platform fixed effects. Thus it seems that the biggest and most successful platforms are the ones with focus on these two industries. Deriving from this, it can be inferred that these two industries might be most suitable for equity crowdfunding, whereas some platforms choose to focus on another sector as a niche market. The reason for this may be, consistent with Pierrakis & Collins (2012), that unsophisticated investors will choose deals that operate in industries which the investor understands.

7.2.2 Team

The first parameter concerning the team is the age of the CEO, who is also typically the founder or one of the founders in early stage ventures. From the simple bivariate regression, a significant negative beta has been estimated with regards to number of investors. Within this sample, having an older CEO is correlated with attracting fewer investors. This is somewhat surprising from the perspective of experience, as an older CEO is more likely to have many years of experience within the industry or to have experience with managing startups. Previous research states that a good video

pitch is crucial to a successful crowdfunding round (Dushnitsky, 2013), and emphasizes the importance of Web 2.0 communication (Schwienbacher & Larralde, 2010). Thus, one possible explanation is that younger people on average are better at utilizing the internet or better at making creative campaigns that attract the wider public. Since CEO age is correlated with sector of the ventures, a multivariate regression including both CEO age and the different sectors has been performed (Table 13 in appendix) with the dependent variable being number of investors. The negative beta for CEO age is, however, still significant, thus the difference in sectors chosen for different age groups is not the reason for the correlation. When controlling for platform fixed effect, the beta is no longer significant. Thus the CEO age is somehow correlated to which platform is used, with the younger entrepreneurs using the large trendy platforms with many investors and older ones using the smaller platforms, maybe for a more niche focus with less investors, but higher amounts per investor, as there is no significant difference in the total amount raised. This also implies that investors may not use the age of the CEO as reasoning for whether or not to invest in a company, but using a particular platform, the majority may just happen to be of a certain age group.

Table 4 Bivariate regressions with team factors

X \ Y	Number of investors	Average investment	Total amount raised
CEO age	-0.01**	0.00	-0.01
w/platform FE	*0.00*	*-0.01*	*-0.00*
Industry experience	-0.01	-0.00	-0.01
w/platform FE	*-0.00*	*-0.01*	*-0.01*
Previous venture	-0.18*	0.01	-0.19*
w/platform FE	*0.03*	*-0.04*	*-0.05*
CEO gender	-0.17	0.04	-0.10
w/platform FE	*-0.02*	*-0.07*	*-0.08*
Team size	0.03	-0.04	-0.03
w/platform FE	*-0.01*	*0.02*	*-0.01*

Note: The table shows betas of regressions with one explanatory variable, log(y) = a + b*x + e
Coefficients in italic are same regressions, but controlling for platform fixed effects.
* p<0.05; ** p<0.01; *** p<0.001

Weber & Zulehner (2010) found a strong significant effect of female first hires on the survival of companies. It can be implied that a potentially higher survival rate would motivate investors to commit their funds to a project in greater amounts, holding other things constant. However, this research shows that having a female CEO has a negative effect on the success of the companies in this sample, although the results are not significant. It therefore cannot be rejected that the gender of the CEO is without impact on the funded amount.

The industry experience of the CEO has a negative effect on number of investors. One reason may be that industry experience is not as highly valued as for example general consulting experience

or experience with other types of startups, as this was not considered experience for the purpose of this study. Another possibility is that most entrepreneurs with many years of experience within the industry go through other means of financing than crowdfunding, as they already have a good network for assistance, promoting, and financing. In this case, due to selection bias, it might be that the entrepreneurs with industry experience, who still seek equity crowdfunding, have limited access to influential people in the industry or are in industries where private money is not always available. When controlling for platform fixed effects, CEO experience does not have a significant effect on the success criteria, and it can therefore possibly be due to chance or, following up on the latest argument, that CEOs having worked many years in an industry and trying to start own venture are more inclined to choose the smaller, niche platforms.

Gottschalk, Greene, Hoewer, & Mueller (2014) show that portfolio and serial entrepreneurs do not have superior survival chances when starting a new venture. Given this fact, previous ventures would have no impact on funding amount. On the contrary, findings by Eesley & Roberts (2010) assess that entrepreneurial experience increases firm revenues, which could, potentially, serve as a positive signal for investors, hence fundraise larger amounts. However in the analyzed sample, as with industry experience, CEOs having started previous ventures seem to have a negative effect on average amounts raised in the crowdfunding round. The result is significant for number of investors as well as total investment. Since repeat entrepreneurs are likely to have established connections to business angels, VC funds, or possible strategic investors, one might follow same logic as for experience, namely that the ones having successfully established connections previously are inclined to use other means of funding, as argued by Gompers, Kovner, Lerner, & Scharfstein (2010). As previously shown, the CEOs with previous ventures in this sample has a positive correlation with the IT & telecom sector, needing finance for product development, and being in early stage, all of which are also correlated. However, the significance of the negative correlation to number of investors and total amount raised does not disappear when controlling for sector or stage. Hence the trend of repeat entrepreneurs to be in IT & telecom and raising capital in early stage in order to achieve fast growth, does not account for the full negative effect on success. Controlling for platform fixed effects, however, eliminates the effect from venture experience of CEO. Thus, within a platform there is no significant difference on the amount raised by CEOs with or without previous venture experience. From the sample, it is not comprehensive to conclude any causal links in this regards, but evidence shows some connection between venture experience, country, and platform.

The team size, i.e. the number of people described in the platform as constituting the founding or executive team, has not been found to have any significant effect on the raised amount in equity crowdfunding. In another study of equity crowdfunding, Ahlers et al. (2012) reach the conclusion that the number of board members has a significant effect on number of investors. However, number of board members might be correlated with later stage as well, since seed stage ventures rarely have a board in place, thus capturing effects beside the team itself.

7.2.3 Financials

Consistent with results from previous research (Ahlers, Cumming, Guenther, & Schweizer, 2012), a positive effect from the equity stake offered is found on the total investment. Looking at the segregation of this variable, the equity stake has a significant negative effect on number of investors, which is more than offset by a positive effect on average investment. Controlling for platform fixed effects, only the positive effect from average investment can be identified. According to Ahlers et al. the rationale for the positive effect is that entrepreneurs willing to give up more control should send a positive signal to investors and hence attract more funding. Nonetheless, for some platforms the equity stakes do not always carry voting rights, which makes the interpretation somewhat ambiguous. Furthermore, there is a natural correlated between the equity stake offered and the amount the company seeks to raise. A causal effect therefore cannot be determined with certainty.

Table 5 Bivariate regressions with financial factors

X \ Y	Number of investors	Average investment	Total amount raised
Equity target	-1.26***	2.12***	0.97*
w/platform FE	*0.05*	*1.15**	*1.33*
Previous BA investments	0.63***	-0.22*	0.48***
w/platform FE	*0.23**	*0.04*	*0.33**
Previous CF rounds	0.30**	0.11	0.31***
w/platform FE	*0.25***	*0.03*	*0.21**

Note: The table shows betas of regressions with one explanatory variable, log(y) = a + b*x + e
Coefficients in italic are same regressions, but controlling for platform fixed effects.
* p<0.05; ** p<0.01; *** p<0.001

Regarding purpose of finance (Table 14 in appendix), the number of investors is significantly negatively affected by the absence of information on this point, followed by product development and geographical expansion, which are the variables with the second and third highest negative beta. Product development and geographical expansion also affect the total investment by the highest negative effects. Controlling for platform fixed effects, only the lack of information impacts number of investors negatively, while effects for other categories are not found to be significant. Due to the correlation between stage and purpose of finance, it is also relevant to control for this factor.

Significant negative effects are now found for no information as well as geographic expansion on number of investors, while product development no longer impacts. No significant effect is now found total investment. This confirms previously noted results, namely that projects with less information provided tend to attract less investments, and that investors, especially unsophisticated investors, need information as a signal of reliability (Ahlers, Cumming, Guenther, & Schweizer, 2012). It is further consistent with the theory presented, which indicates that an equity issue should be done with minimum information asymmetries, and thus project owners should have an incentive to reduce the private information in order to establish reliability.

Having done previous successful equity crowdfunding rounds has a significant positive effect on the number of investors as well as total investment. This is what could be expected, as a previously successful round shows positive signals from many other investors trusting the team and the idea, and the firm must have been successful in some respect to have survived to another stage. Controlling for platform fixed effects, same results are found.

The final financial variable to be investigated is the previous investment from a business angel. The companies being backed by at least one business angel seem to attract more investors as well as a higher average contribution from each investor. Chahine, Filatotchev, & Wright (2007) find that firms using business angels are anticipated to generate higher wealth, hence business angel involvement should serve as a positive signal for unsophisticated investors with limited ability and resources to perform due diligence on potential deals. Since a venture often needs to be in a certain industry, and of a certain size for the business angel to have a large enough commitment to justify resources spent on due diligence, guidance, monitoring etc., as well as business angels moving more upstage to reduce risk, it is likely that business angel commitment in a venture is correlated with later stage and size of the company, which could explain the observed effects. Therefore the regression needs to be controlled for these effects before reaching any conclusion as to the signaling value of business angel investments in itself. When controlling for stage or sector (Table 15 in appendix), the positive betas in all three regressions are still significant. Also when adding platform fixed effects, there is a significant positive effect on number of investors and total invested amount, indicating that the commitment from business angels sends a positive signal to the crowd. Nonetheless, a counter-argument could be that business angels, as sophisticated investors, are better at choosing deals that are will succeed, and thus the companies are simply better, which is the fact attracting investors. However, given previous evidence from Pierrakis & Collins (2012), it is likely that unsophisticated investors, with limited resources and ability to perform proper due diligence and post investment

support, will see the commitment of a professional investor as a quality stamp to the project. This especially so as the business angel commitment does not affect the amount invested per investor, thus not necessarily attracting the big investors, but attracts the crowd. It is also greatly advertised when ventures have a business angel engaged and invested, indicating that project owners also believes this commitment will attract more investors. Corporate governance may also be an important aspect when a business angel or VC fund are invested in a crowdfunded project. The reason for this is that exactly the lack of governance when ownership is dispersed is a key concern for equity crowdfunding. Thus it is reasonable to believe that a business angel not only serve as a signal of quality, but also an assurance that the business angel will monitoring the management team post-investment, as the large investor will have both the incentive and ability to do so.

Finally, the presence of companies with business angel commitment in the sample may be evidence of support for the theory of Pierrakis & Collins (2012). Here it is argued that equity crowdfunding has the potential not only to support seed stage ventures that have not reached the scale or connections for business angel investments, but also to fill the finance gap that is often present between minor business angel investments and the scale and project size necessary to be interesting for VC funds.

7.2.4 Analysis summary

In general, having more precise information on the platform leads to more investments made in the deal. This is especially seen from the negative impact of lack of information regarding the purpose of raising capital. On the other hand, information on other social media such as LinkedIn has not been found to have significant effect on the success of an equity crowdfunding round, contrary to findings by other research papers. Measures of team composition and experience are not found to be of major importance for investors' decisions to contribute to a given campaign. This may be related to the fact that this information is often not displayed on the platform website, but requires investors to search for the company and the CEO on other pages. It could also be such that the team reliability is close to impossible for unsophisticated investors to evaluate solely from a video pitch and company's own description, and so they rather focus on other signals. Such signals include for instance the commitment of a business angel or previous successful equity crowdfunding rounds. Figure 4 include a summary of the main effects found from the research. Overall, while the team is not found to impact the level of investments, financial information provided seems crucial, which is consistent with findings of Ahlers et al. (2012). Company characteristics impact to some extent, but are much related to the platform, thus causal effect cannot be established with certainty.

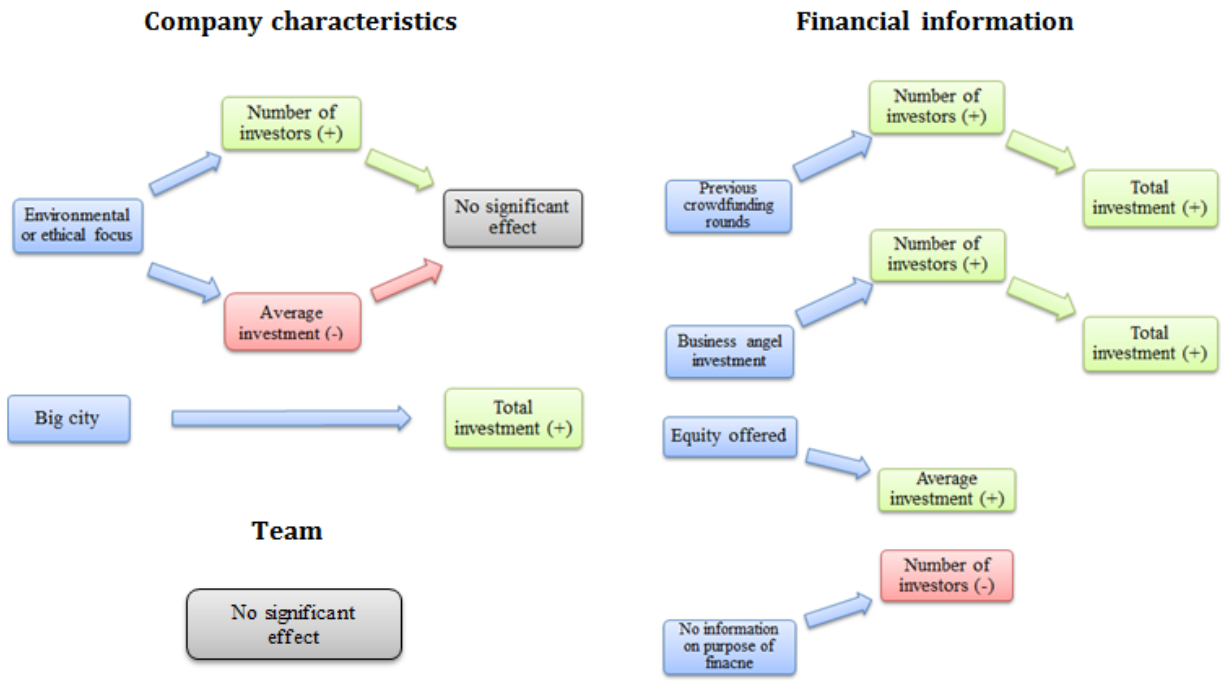


Figure 4 Results summary

8. Venture capital and business angel comparison

To develop a better understanding of the particularities of equity crowdfunding in Europe, the parallels and difference between the subject in focus and venture capital and business angel financing have been traced. As main sources, the latest available annual statistics compendiums from the European Private Equity and Venture Capital Association (EVCA, 2013) and The European Trade Association for Business Angels, Seed Funds, and other Early Stage Market (EBAN, 2012) have been used.

The first base of comparison is the financing specific outcomes. EVCA splits venture capital investments into three stages: (1) seed stage, containing companies at initial concept development, (2) start-up, including companies doing product development and initial marketing, and (3) later stage ventures, seeking operations expansion and growth. In 2013, the total VC financing in Europe amounted to 3.38bn EUR, out of which 3.4% were ventures in the first stage, 55.2% - second, and 41.5% - third. EBAN estimates the European business angels financing market to be 5.1bn EUR in 2012, based on the data from observed business angel networks. Although EBAN does not provide categories for angel investments, most of them are described as seed and very early stage. In the sample, four stages have been identified: seed, start-up, early stage, and growth, with respective shares in the total of 17.8%, 38.5%, 18.6%, and 25.0%. Given these figures, the first difference can

be observed: in equity crowdfunding the funds contributed are more evenly spread over the different stages compared to VC, a higher share of seed ventures and a lower share of growth/later stage ventures.

From another angle, the individual investment size for each type of financing source can be compared. In 2013, European VCs invested an average of 1,114,767 EUR per company, compared to 174,800 EUR for business angel investments (European Private Equity and Venture Capital Association, 2013), and about 50,000 EUR for securities crowdfunding (European Commission, 2013b). Equity crowdfunding acts in the same investment range as business angel financing. Even average seed-stage VC commitments were 276,600 EUR – almost double that of the equity crowdfunding sample, hence equity crowdfunding does not position itself in direct competition with VC. One explanation for the differences in the size of commitments could be investor sophistication, since more advanced investors, such as VC funds, generally manage larger pools of money and invest only in a number of hand-picked ventures. Kaplan and Schoar (2005) find that private equity and venture capital funds demonstrate resilient performance track, hence the implication that VC investment process implies skill more than luck. Amit, Brander, and Zott (1998) show that previous experience of VC investment professionals allows them to identify and aid, skilled, but unproven entrepreneurs. General partners of VC funds have refined due diligence capabilities in assessing new ventures, but also enhanced monitoring, advice, incentivizing and helping skills. These strengths could in turn motivate investors to commit larger amounts to specific investment opportunities. Business angels, on the other hand, have generally previous industry or business operations experience, but engage in little initial due diligence. This seems more similar to equity crowdfunding investors, where due diligence has a narrow scope, as it is accomplished through the publicly available project information and direct communication with company owners. VCs offer sufficient capital necessary for growth and scalability, when bootstrapped finances are insufficient. VCs bring relevant industry and operational experience, which allows ventures to devise and implement a viable strategy, and also relevant networking connections, which help young companies establish customer and partner relationships or attract fellow investors for follow-up funding. Business angels are preferred when owners seek financing as well as a mentoring partner, while not yet having the scale to attract VC financing. Along with capital, equity crowdfunding offers funders a direct contact and feedback mechanism with the consumer, as well as cost reduction advantages while retaining strategic and operational control.

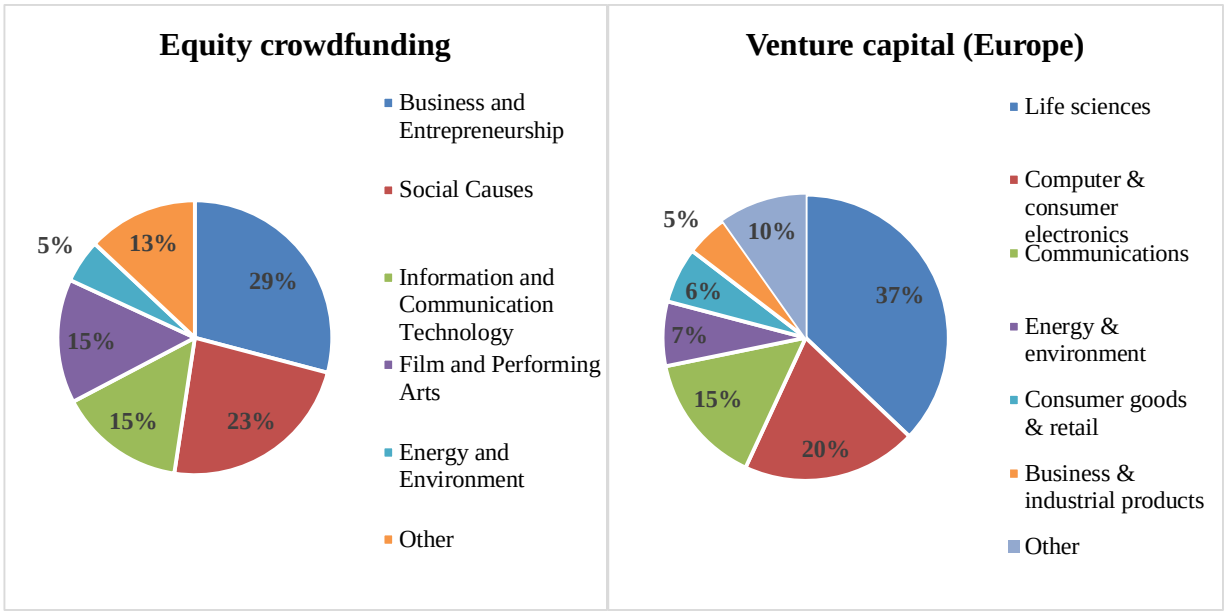


Figure 5 Global equity crowdfunding market, 2012: split by industry categories (left)
European venture capital market, 2013 split by industry categories (right)

Source: Adapted from 2013 Crowdfunding Industry Report (Massolution, 2013) and EVCA Annual Statistics (European Private Equity and Venture Capital Association, 2014)

In 2013, VCs committed 37% of aggregate funds in Europe to life sciences companies, followed by computer & consumer electronics with 20%, and communications with 15% (European Private Equity and Venture Capital Association, 2014). On the other hand, in a sample of 262 business angel deals, from the United Kingdom, in 2012-2013, about 31% included internet and ICT focused companies, 16% consumer-oriented, and about 10% with a life sciences scope (UK Business Angels Association; Deloitte LLP, 2013). Both VCs and business angel statistics differ from that of the sample, where the leading category is consumer products (30%). However, similar to VC data, computer and IT category takes the second position, with 26%. This may be related to the arguments that unsophisticated investors prefer to invest in products they understand, which is more likely for consumer products than computer electronics for instance. The difference in sophistication of investors thus leads to skewed sector focus.

The success of young ventures is, generally, a resultant of contractual incentives and investment motivations, exhibited by different group of investors. Kaplan & Strömberg (2003) find that, in VC-backed firms, cash flow rights are often separated from control rights, and are subject to change given the attainment of some performance milestones. For the business angels' perspective, Goldfarb, Hoberg, Kirsch, & Triantis (2008) find that deals with more angel investors have weaker cash flow and control rights, compared to deals backed by VCs alone. Equity crowdfunding follows with generally limited or non-existent control rights. In equity crowdfunding, this option of adjusting the

control rights is not yet possible. This puts equity crowdfunding at a disadvantage, as this sort of measures to mitigate discrepancies in valuation between the project owner and the investor are not viable. As a result, for equity crowdfunding companies, the alignment of incentives between management and investors is weakened both by insignificant control rights and ownership dispersion. At some platforms, companies are also required or have the option not to give voting power to the investors. The motivation for committing funds a specific venture is also different. VC funds seek to achieve an optimal target return and risk profile, which could translate into higher commissioned fees. Business angels may also commit their money for reasons other than financial, such as altruism and personal fulfillment from supporting new ventures with knowledge and experience, or the thrill in engaging in an entrepreneurial work setting. Such behavior is closer related to that of equity crowdfunding investors, who seek to balance intrinsic and extrinsic motivations.

Whereas team composition has not been found to impact the investment decision in equity crowdfunding, many VC funds argue that the team is the most important criterion for investing (Harroch, 2013b). This may reflect the expertise and resources available at VC funds, while a small and unsophisticated investor does not have the capabilities to properly assess the quality and commitment of the team.

Risk is a defining element for all types of venture stage investments. A comparison on this criterion would have important implications for both investors and funders. In a sample of almost 8000 deals, accomplished across all venture sectors in the United States, between 2003 and 2012, only 32% yielded positive results, returning more than one times the initial investment (Correlation Ventures, 2013). At the same time, in 39% of cases, ventures went out of business. In study of business angels investment exists, Mason and Harrison (2002), calculated that 39.8% of deals yielded a negative IRR, with 34% at a total loss and 13% at a partial loss or break-even. For equity crowdfunding, no data is yet available on the survival and return rates for ventures, although Financial Conduct Authority and the International Organization of Securities Commissions estimate a total loss of investments in 50-70% of equity-crowdfunded ventures. Consequently, this figure is both higher than the corresponding ones for VC and business angel investments.

9. Limitations

The findings of the empirical research need to be understood in the light of several limitations. The dataset covers 290 observations from 10 crowdfunding platforms from the Europe and Middle East region throughout the years 2011-2014. American crowdfunding platforms could not be included in

the analysis due to the current regulation restrictions, which only allow accredited investors and high-net worth individuals to invest in equity crowdfunding projects. These aspects may induce some small sample bias as the dataset may not be representative enough and may not capture the entire range of factors that affect the capital allocation decisions of potential investors. At the same time, the UK platform Seedrs, which accounts for 45 observations or 15.5% of total, lacked data for the number of investors and, implicitly, the average investment. Hence, this could have amplified the small sample bias, for regressions with dependent variable other than total invested amount.

As equity crowdfunding is a recent phenomenon, the timeframe of the dataset only covers 4 years and 94% of the cases are from UK, Germany or Nordic countries, hence this may also affect the generalizability of the findings. Therefore it may be doubtful to what extent the dataset allows sketching direct associations and defining practical implications of the findings on a global level. Nonetheless, it was expected that Europe and North America would account for 98% of all crowdfunding deals in 2013 (Massolution, 2013), thus it seems mainly US deals are missing from the sample in order to have a representative geographical sample for crowdfunding in its current state. After the implementation of Title III of the JOBS Act in the US, regulation will be similar that of the countries where equity crowdfunding platforms are active in Europe and it can be argued that similar results may be found when the market is open also to smaller investors. It should also be kept in mind that although the platforms in the study are limited to this geographic areas, investors from all over the world can in principle invest in these deals, which should allow for the applicability of the findings globally. However, due to familiarity bias and language barriers, it is likely that at least the majority of investors are local. In any case, crowdfunding is at an embryonic phase, thus the finding can provide useful insights for future researchers regarding what factors could serve as drivers of success for equity crowdfunding initiatives.

Regarding the validity of the findings in the future, there is some doubt in research as to whether equity crowdfunding will continue to be targeted at early stage ventures and minor creative projects or will expand to include other types of companies and professional investors (European Crowdfunding Network, 2013b). As equity crowdfunding is still at a very early stage of development, it is likely that this affects both the project owners and investors seen in this sample, as these are all early adopters of the method. The question thus remains as to whether the results have validity far into the future, but the evidence strongly gives the indication of the behavior in this early stage, and provides information valid for investors and project owners that are applicable going forward. Furthermore, the evidence from early stage may guide further research and serve as comparison for

similar studies performed at a time in which equity crowdfunding is a more established method as well as studies focusing on the performance of equity crowdfunded projects post investment.

The research design also implies some constrains. As the paper is an initial step toward understanding equity crowdfunding investment decision making process, the analysis includes only simple bivariate and multivariate regression models. Future research might also build larger datasets and explore the relationships identified in this analysis and test them in more comprehensive statistical models. Finally, the research does not directly take country specific factors into account or adjust for differences in legal framework. Nonetheless, the platform fixed effect should account for this to some extent due to geographical boundaries of each platform.

10. Conclusion

Following the research from this study, equity crowdfunding is a viable financing opportunity for many ventures in a range of early stages. The most successful companies seems to be the ones producing or selling products that the average investor understands, whereas the more technically complex ventures might have more luck seeking out professional investors with specific expertise. This also includes companies with important trade secrets to be concerned about, as information must be released to the public in order to be successful in raising funds from the crowd. Furthermore, equity crowdfunding has been found to be a complementary rather than substituting source of financing to business angels and VC funds. It appears that equity crowdfunding rounds may serve either as seed financing to establish contacts to business angels, or the company can seek capital on a platform when looking for larger funds, in which case being backed by a business angel leads to more success.

There is some evidence of herding, as the number of investors is more likely to lead to high total amounts than a high average amount contributed by each investor. The research suggests that financial information presented by companies has a significant effect on the success rate of an equity crowdfunding campaign. Specifically, previous investment rounds, from crowdfunding or business angels, increases the total number of investors and raises the total investment value. Investors seem to seek positive signals and evidence from more experienced parties, given limited time, knowledge and experience for a proper investment due diligence. The lack of information regarding the purpose of raised financing has a major negative impact on the number of investors. This supports the theory that project owners should attempt to decrease the level of asymmetric information, and the lack of justification for raising capital may speak against the team's credibility. At the same time the amount of equity offered positively impacts the average investment. In this case, owners are targeting higher

funding amounts as a tradeoff for control, but with the goal of raising enough investment that could significantly affect growth prospects and financial performance. The high equity stakes offered also shows a willingness to give up control of the company, which may attract some investors.

The results suggest that a company located in a big city raise a higher amount in equity crowdfunding campaigns compared to those located in other areas. Big cities concentrate financial resources in a given country and offer better opportunities for marketing, networking and client generation. Additionally, an environmental or ethical focus exhibited by ventures seems to increase the number of investors, but decreases the average investment, hence having no significant impact on the total amounts of funds. This may be a case of alignment of incentives, when founders seek to develop an environmental or ethical venture, and investors attempt to balance their intrinsic motivation and passion for such type of cause with a respective financial reward. On the other hand, many larger investors may avoid these ventures as CEOs are expected to focus less on financial return.

Surprisingly, no team characteristics have exhibited any significant influence on the success rate of equity crowdfunding projects. Prospective investors might have encountered difficulties in collecting the information on the team, given limited data on the project webpages, but also assessing the credibility on outside data sources. At the same time, even previous industry experience or started ventures do not reflect any significant implications for the investment process. One reason, however, is the fact that founders with solid previous background, may have established connections in the industry and with investors, and hence lack incentives to seek equity crowdfunding. The sample of equity crowdfunding deals could thus be overrepresented by teams who failed to establish an industry network.

While the research had an explorative and descriptive scope, it offers considerations for future studies. First, given the impressive growth achieved by equity crowdfunding platforms in the last three months, prospective research could develop models with a higher statistical power, while using this study as a basis for hypothesizes formulation. Second, while the geographical focus of this research is the EMEA region, once the United States adopts Title III of the JOBS Act, a comparative analysis between these two areas could be accomplished. Furthermore, contrasting between equity crowdfunding and other fundraising models, specifically the lending, would develop a greater understanding of new sources of financing, alternative to business angel or venture financing. Additionally, combining as examining of pure equity crowdfunding and mixed models could translate into better conclusions regarding the state of investor engagement in equity crowdfunding. Third, future research could focus on better understanding the investor motivation, analyzing both intrinsic

and extrinsic incentives, and the preference for active vs. passive involvement. Similar to Ahlers et al. (2012), other potential signaling effects driven from grants, awards, or intellectual property rights could be tested on a larger population. Finally, qualitative and quantitative analysis of equity crowdfunding platforms could serve as guidance for understanding which platform-specific factors affect the success of a fundraising campaign. Including tax advantages in this investigation, for both investors and owners, could shed a light on pertinent changes to the regulatory frameworks for equity crowdfunding, which are currently developed or updated around the globe.

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Appendix

Table 6 Definition of variables

Variable	Description
Funding amount	Total amount of money raised for a project, in Euro
Investors	Total number of funders who have committed to invest in a project
Average investment	Average funding amount per investor, in Euro
Target Amount	Sum of money founders seek to raise using the specific equity crowdfunding campaign
Funding Level	Ratio between Funding Amount and Target Amount, in percent
Actual Ownership	Total ownership of the investors
Pre-Money Valuation	Difference between the ratio Funding Amount and Actual Ownership and Funding Amount
Previous CF Rounds	Dummy variable equal to 1 if company has had previous rounds of crowdfunding; 0 otherwise
BA investments	Dummy variable equal to 1 if company has had previous business angel investments; 0 otherwise
Stage	Categorical variable for the four stages: Seed=1 , Start-up=2, Early stage=3, Growth=4
Product development	Dummy variable equal to 1 if the money will be used for product development; 0 otherwise
Marketing/Launch	Dummy variable equal to 1 if the money will be used for marketing and product launch; 0 otherwise
Geographic expansion	Dummy variable equal to 1 if the money will be used for geographical expansion; 0 otherwise
Infrastructure	Dummy variable equal to 1 if the money will be used for infrastructure; 0 otherwise
No information	Dummy variable equal to 1 if the no information on use of funds available; 0 otherwise
Professional and business services	Dummy variable equal to 1 if the company is from the professional or business service industry; 0 otherwise
Consumer products	Dummy variable equal to 1 if the company if the company is from the consumer products industry; 0 otherwise
IT & telecom	Dummy variable equal to 1 if the company is from the IT or Technology industries; 0 otherwise
Entertainment	Dummy variable equal to 1 if the company is from the entertainment industry; 0 otherwise
Other	Dummy variable equal to 1 if the company is from other industry; 0 otherwise
Company age	Difference between the company establishment date and the funding date
Environmental/Ethical	Dummy variable equal to 1 if the project's scope is of environmental or ethical nature; 0 otherwise
Big city	Dummy equal to one if the project's location is major city; 0 otherwise
CEO age	CEO age in years
Previous ventures	Number of previous ventures of the CEO
Previous experience	Number of years of experience in the industry of the CEO
Team size	Number of team members
CEO gender	Dummy variable equal to 1 if CEO is a female; 0 otherwise

Table 7 Annual project distribution by platform

	No Data	*2011*	*2012*	*2013*	*2014*	*Total*
Companisto	0	0	5	17	2	24
Crowdcube	0	6	16	41	21	84
FundedByMe	0	0	0	17	3	20
Invesdor	0	0	0	34	3	37
Seedmatch	0	4	22	23	2	51
Seedrs	0	0	5	33	7	45
Small Platforms	1	0	0	4	7	12
Symbid	0	0	10	4	3	17
Total	1	10	58	173	48	290

Table 8 Annual project distribution by location

	No Data	*2011*	*2012*	*2013*	*2014*	*Total*
Germany – Big City	0	2	14	21	2	39
Germany – Small City	0	2	15	20	4	41
MENA – Big City	0	0	0	1	4	5
Netherlands – Big City	0	0	2	1	1	4
Netherlands – Small City	0	0	6	3	0	9
Nordics – Big City	0	0	0	50	6	56
United Kingdom – Big City	0	2	11	38	17	68
United Kingdom – Small City	1	4	10	39	14	68
Total	1	10	58	173	48	290

Table 9 Annual project distribution by industry

	No Data	*2011*	*2012*	*2013*	*2014*	*Total*
Professional and Business Services	0	5	19	36	8	68
IT & telecom	0	0	10	47	18	75
Consumer Products	1	3	17	51	14	86
Entertainment	0	2	10	31	7	50
Other Industries	0	0	2	8	1	11
Total	1	10	58	173	48	290

Table 10 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Number of investors (1)	1.00													
Average investment (2)	**-0.14***	1.00												
Total amount raised (3)	**0.38*****	**0.22*****	1.00											
Stage (4)	-0.11	-0.00	**0.22*****	1.00										
Company age (5)	-0.10	0.03	**0.12***	**0.47*****	1.00									
Environmental/Ethical (6)	0.05	-0.05	0.07	0.01	0.11	1.00								
CEO age (7)	**-0.19****	-0.07	0.08	**0.24*****	**0.38*****	**0.18****	1.00							
Industry experience (8)	**-0.13***	-0.04	0.04	0.08	0.02	0.00	**0.49*****	1.00						
Previous venture (9)	**-0.13***	0.07	-0.01	-0.00	-0.03	0.04	**0.17****	**0.36*****	1.00					
CEO gender (10)	**-0.14***	-0.05	-0.09	0.04	0.06	-0.06	-0.07	-0.04	-0.09	1.00				
Team size (11)	**0.20****	0.03	0.05	**-0.21*****	-0.03	0.03	-0.10	0.03	-0.05	-0.07	1.00			
Equity target (12)	**-0.28*****	0.05	0.09	**0.16****	-0.02	-0.08	0.11	0.07	-0.04	0.02	**-0.31*****	1.00		
Previous BA investments (13)	**0.46*****	-0.05	**0.27*****	0.08	-0.02	0.04	-0.07	0.01	-0.00	-0.10	**0.12***	**-0.15***	1.00	
Previous CF rounds (14)	0.05	-0.02	0.09	**0.16****	0.10	-0.07	0.02	0.02	**0.18****	-0.06	-0.05	-0.05	**0.23*****	1.00

* p<0.05; ** p<0.01; *** p<0.001

Table 11 Multivariate regressions with big city factor

	Number of investors(log)	Average investment (log)	Total amount raised (log)
Big city	0.31***	0.16*	0.46***
Platform fixed effect	NO	NO	NO
R-Squared	*0.05*	*0.02*	*0.09*
Big city	0.09	0.13	0.26*
Platform fixed effect	YES	YES	YES
Control for sector			
Big city	0.25***	0.14*	0.42***
Professional and business services	0.39	0.09	0.53
IT & technology	-0.07	0.02	0.06
Consumer products	0.34	0.11	0.55
Entertainment	0.33	-0.08	0.34
Other	-0.33	0.61	0.16
Platform fixed effect	NO	NO	NO
R-Squared	*0.14*	*0.05*	*0.16*
Control for sector			
Big city	0.08	0.13*	0.25***
Professional and business services	0.28	0.21	0.54
IT & technology	0.14	0.04	0.27
Consumer products	0.35	0.15	0.57
Entertainment	0.27	0.06	0.42
Other	-0.05	0.48	0.31
Platform fixed effect	YES	YES	YES
R-Squared	*0.04*	*0.04*	*0.06*

Multivariate regression for big city log(y)= a + b1*x1 + b2*x2+...+bn*xn
All regressions done both with and without platform fixed effect
* p<0.05; ** p<0.01; *** p<0.001

Table 12 Multivariate regressions with stage

	Number of investors(log)	Average investment (log)	Total amount raised (log)
Stage	**0.01**	**0.15*** **	**0.16*** **
Platform fixed effect	NO	NO	NO
R-Squared	*0.00*	*0.05*	*0.04*
Stage	**0.16***	**0.01**	**0.18**
Platform fixed effect	YES	YES	YES
Control for secondary rounds			
Stage	**-0.02**	**0.15*** **	**0.14*** **
Previous cf round	0.31**	0.00	0.24**
Platform fixed effect	NO	NO	NO
R-Squared	*0.02*	*0.05*	*0.05*
Control for secondary rounds			
Stage	**0.14**	**0.00**	**0.16**
Previous cf round	0.16*	0.02	0.13
Platform fixed effect	YES	YES	YES
R-Squared	*0.07*	*0.00*	*0.04*

Multivariate regression for stage log(y)= a + b1*x1 + b2*x2+...+bn*xn
All regressions done both with and without platform fixed effect
* p<0.05; ** p<0.01; *** p<0.001

Table 13 Multivariate regressions with CEO age

	Number of investors(log)	Average investment (log)	Total amount raised (log)
CEO age	**-0.01****	**0.00**	**-0.01**
Platform fixed effect	NO	NO	NO
R-Squared	*0.03*	*0*	*0.01*
CEO age	**0.00**	**-0.01**	**0.00**
Platform fixed effect	YES	YES	YES
Control for sector			
CEO age	**-0.01***	**0.00**	**0.00**
Professional and business services	0.53	0.14	0.71
IT & telecom	0.03	0.04	0.19
Consumer products	0.48	0.16	0.71*
Entertainment	0.48	-0.04	0.52
Other	-0.20	0.65	0.31
Platform fixed effect	NO	NO	NO
R-Squared	*0.13*	*0.04*	*0.09*
Control for sector			
CEO age	**0.00**	**-0.01**	**0.00**
Professional and business services	0.29	0.29	0.64
IT & telecom	0.16	0.12	0.39
Consumer products	0.37	0.23	0.68
Entertainment	0.3	0.16	0.56
Other	-0.02	0.55	0.41
Platform fixed effect	YES	YES	YES
R-Squared	*0.04*	*0.05*	*0.04*

Multivariate regression for *CEO age* log(y)= a + b1*x1 + b2*x2+...+bn*xn
All regressions done both with and without platform fixed effect
* p<0.05; ** p<0.01; *** p<0.001

Table 14 Multivariate regressions with purpose of finance

	Number of investors(log)	Average investment (log)	Total amount raised (log)
Purpose of finance:			
Product development	-0.59***	-0.15	-0.6
Marketing/Launch	-0.33**	-0.06	-0.23***
Geographic expansion	-0.56***	-0.10	-0.5
Infrastructure	-0.54***	0.13	-0.29*
No information	-0.76***	0.22	-0.34
Platform fixed effect	NO	NO	NO
R-Squared	*0.13*	*0.06*	*0.11*
Purpose of finance:			
Product development	-0.28	-0.21	-0.37
Marketing/Launch	-0.16	-0.09	-0.11
Geographic expansion	-0.32	-0.14	-0.31
Infrastructure	-0.29	-0.07	-0.26
No information	-0.45*	0.04	-0.24
Platform fixed effect	YES	YES	YES
R-Squared	*0.07*	*0.04*	*0.04*
Control for stage			
Product development	-0.59***	-0.11	-0.54**
Marketing/Launch	-0.33**	-0.07	-0.21
Geographic expansion	-0.56***	-0.12	-0.53*
Infrastructure	-0.54***	0.09	-0.32
No information	-0.76***	0.23	-0.34
Stage	-0.00	0.14***	0.12**
Platform fixed effect	NO	NO	NO
R-Squared	*0.13*	*0.10*	*0.13*
Control for stage			
Product development	-0.24	-0.21	-0.34
Marketing/Launch	-0.17	-0.09	-0.12
Geographic expansion	-0.37**	-0.14	-0.37
Infrastructure	-0.28	-0.07	-0.26
No information	-0.42*	0.05	-0.21
Stage	0.16*	0.01	0.18
Platform fixed effect	YES	YES	YES
R-Squared	*0.12*	*0.04*	*0.08*

Multivariate regression for purpose of finance log(y)= a + b1*x1 + b2*x2+...+bn*xn
All regressions done both with and without platform fixed effect
* p<0.05; ** p<0.01; *** p<0.001

Table 15 Multivariate regressions with previous business angel investment

	Number of investors(log)	Average investment (log)	Total amount raised (log)
BA investment	0.63***	-0.22*	0.48***
Platform fixed effect	NO	NO	NO
R-Squared	*0.11*	*0.02*	*0.04*
BA investment	0.23*	0.04	0.33*
Platform fixed effect	YES	YES	YES
Control for sector			
BA investment	0.59***	-0.22*	0.45***
Professional and business services	0.48	0.15	0.68*
IT & telecom	0.04	0.03	0.18
Consumer products	0.5	0.15	0.71*
Entertainment	0.42	-0.02	0.49
Other	-0.23	0.66*	0.32
Platform fixed effect	NO	NO	NO
R-Squared	*0.21*	*0.05*	*0.13*
Control for sector			
BA investment	0.25**	0.03	0.35**
Professional and business services	0.31	0.25	0.63
IT & telecom	0.18	0.09	0.38
Consumer products	0.41	0.2	0.7
Entertainment	0.32	0.11	0.54
Other	-0.02	0.54	0.4
Platform fixed effect	YES	YES	YES
R-Squared	*0.07*	*0.03*	*0.06*
Control for stage			
BA investment	0.63***	-0.22***	0.44***
Stage	0.01	0.15***	0.14***
Platform fixed effect	NO	NO	NO
R-Squared	*0.11*	*0.07*	*0.08*
Control for stage			
BA investment	0.2*	0.04	0.29*
Stage	0.15*	0	0.16
Platform fixed effect	YES	YES	YES
R-Squared	*0.08*	*0*	*0.05*

Multivariate regression for BA investment log(y)= a + b1*x1 + b2*x2+...+bn*xn
All regressions done both with and without platform fixed effect
* p<0.05; ** p<0.01; *** p<0.001