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Published in:
Economics of Innovation and New Technology

DOI:
10.1080/10438599.2018.1396660

Publication date:
2018

Document version:
Accepted manuscript

Citation for polished version (APA):
Clauss, T., Breitenecker, R. J., Kraus, S., Brem, A., & Richter, C. (2018). Directing the wisdom of the crowd: the importance of social interaction among founders and the crowd during crowdfunding campaigns. *Economics of Innovation and New Technology*, 27(8), 709-729. <https://doi.org/10.1080/10438599.2018.1396660>

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Directing the wisdom of the crowd: The importance of social interaction among founders and the crowd during crowdfunding campaigns

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Abstract

Crowdfunding plays an important role as an alternative funding source for technology ventures. No earlier studies particularly investigated the importance of social interactions during such crowdfunding campaigns. Hence, we particularly take the interaction between the project owner and the community as well as among community members into account. We empirically investigated potential success factors for crowdfunding projects of entrepreneurs on the base of 430 projects from the German crowdfunding platform Visionbakery. Our results show that social interaction during a crowdfunding campaign indeed increases the likelihood of its success. As comments from crowd members on particular projects might be positive or negative and can also provide additional argumentation or raise questions, comments can cause a dialog among crowd members. This shows that herding might not only be related to the number of contributors but also to their shared attributes and perceptions. Our discussion of theoretical and managerial implications closes with recommendations for future research on this evolving topic.

Introduction

Entrepreneurial ventures can typically consider various alternative sources for fundraising. However, if the entrepreneurial opportunity is based on technological innovation, it is in general very difficult to get financed in a freely competitive market place (Hall, 2002, 2005, 2010; Hall & Lerner, 2010). Especially

when entrepreneurs pursue technological developments, which are typically cost-intensive and uncertain (Colombo & Grilli, 2007), bank loans are only available for very few companies. Alternative sources like business angels or venture capitalists usually provide higher amounts of funding than needed for new technological developments, require companies to be willing to give away shares and often require founders to waive parts of their autonomy and decision rights (Bergemann & Hege, 2005; Hall, 2010).

Against this background, crowdfunding offers innovative ventures a new access for funding (Cosh et al., 2009), ranging from early pre-financing to full equity investments, as very small to very big amounts of funding can be covered (Angerer et al., 2017; Gobble, 2012). The raising importance of crowdfunding as an alternative financing can be seen as the annual volume of the global crowdfunding industry in 2015 was estimated at 34 Billion USD and was forecasted to surpass the venture capital industry (Barnett, 2015). With business & entrepreneurship being one of the three most distinctive sectors of crowdfunding, it is shown that crowdfunding is particularly used by entrepreneurs for financing of new ventures (e.g. Schwienbacher & Larralde, 2010).

Considering the high practical relevance of crowdfunding, researchers recently started to investigate the conditions under which crowdfunding can succeed (e.g. Colombo et al., 2015b; Mollick, 2014). Investment decisions are usually made under uncertainty, as funders need to rely on fragmented and incomprehensive information about entrepreneurial ventures. Crowdfunding can utilize the opportunities of online platforms to provide information to potential investors which signal project quality and reliability (Ahlers et al., 2015). Studies mainly addressed two groups of information provided in crowdfunding campaigns: 1) quality signals related to the project, and 2) quality signals related to the founder (Kuppuswamy & Bayus, 2015b). Related to the first, Mollick (2014, provides insights into the relevance of the underlying project quality as well as project features such as the duration or the project type. Others focused on the type of offered rewards (Belleflamme et al., 2014; Colombo et al., 2015b) or the visual design (e.g. pictures, videos or texts) of a campaign (Marom & Sade, 2013; Mollick, 2014). Related to the second, studies analyzed the influence of factors that characterize the founder such as gender (Brem & Wassong, 2014; Colombo et al., 2015b; Greenberg & Mollick, 2016), the size of the private social network of the founder (i.e. No. of Facebook friends of founders) (Mollick, 2014) or the embeddedness into the community (i.e. number of funded projects) (Zvilichovsky et al., 2015). Although initial studies found that particular aspects related to crowd dynamics such as the effect of early contributions by others (Colombo et al., 2015b), herding effects (Zhang & Liu, 2012), and funding by friends and family (Agrawal et al., 2015) also play an important role, no studies particularly investigated the importance of social interactions of crowd members and founders during crowdfunding campaigns. This constitutes a relevant research gap, as the opportunities to post comments and updates for crowd members and the founders on crowdfunding platforms can facilitate dynamic interaction and might be a particular strength of the crowdfunding. This study therefore analyzes how the interaction between the project owner and the crowd as well as the interaction among the crowd members is related to success of crowdfunding campaigns.

We empirically investigate potential success factors for crowdfunding projects of entrepreneurs on the base of 430 projects from the German crowdfunding platform Visionbakery. Despite supporting previous findings, we show that a social interaction after the launch of the campaign is essential.

Resonance from crowd members and regular updates by the founder are additional success factors, as we assume that they enable a dialogue between founder and funders and thus reduce residual information opacity for funders.

Conceptual Background

Reasons for crowdfunding of entrepreneurial ventures

After the great economic crisis from 2008 on, especially small organizations and entrepreneurs found it difficult to buoy up in terms of receiving funding for their projects (Gompers & Lerner, 2004; Harrison, 2013; Prive, 2012). Especially for innovative projects, entrepreneurs suffered a lack of funding in an early stage (Cosh et al., 2009). This lack results from the difficulty of entrepreneurs to offer funders a credible and detailed information basis in order to estimate the risk of their investment decisions (Moss et al., 2015). This is because the output of entrepreneurial activities is associated with a high degree of uncertainty (Hall & Lerner, 2010). Although more detailed information about the cost earnings ratio will be produced over time, uncertainty is the highest when the project should be started and initial funding is needed (Bergemann & Hege, 2005).

Characteristics of crowdfunding

In order to overcome the above mentioned issues, crowdfunding emerged as an enabler for businesses of all kinds to receive funding by tapping the crowd instead of specialized investors (Bouncken et al., 2015; Kleemann et al., 2008). “Crowdfunding refers to the efforts by entrepreneurial individuals and groups - cultural, social and for profit - to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries.” (Mollick, 2014, 2). As potential funders contribute rather small amounts of money even if the success of the project is uncertain, the risk for a funder is not too high. Furthermore, crowdfunding raises money through an open call for supporting a project with financial resources (Belleflamme et al., 2014), which is in most cases facilitated through specialized multi-sided online platforms (Tomczak & Brem, 2013) such as Kickstarter, Indiegogo etc. (Scharwath, 2012). Hence, crowdfunding typically takes place in a professional web infrastructure that enables the founders to provide relevant information about the project in a compact yet comprehensive way. Therefore, crowdfunding provides a high information transparency to the public (Schwienbacher & Larralde, 2010) and addresses potential issues related to information asymmetry. Crowdfunding platforms are not only intermediaries of monetary transactions, but also build social capital relations among platform members, leading them to show support to other members (Colombo et al., 2015b). Hence, crowdfunding is accompanied by side effects through e.g. viral marketing which increase popularity, might facilitate the development of ecosystems or increase press attention (Mollick, 2014). Furthermore, within this social context crowdfunding is based on collective decision-making via a social media platform to evaluate and raise funding for entrepreneurial ventures (Bruton et al., 2015).

Crowdfunding can be incentivized in various ways (Kuppuswamy & Bayus, 2015b; Mollick, 2014). In the case of most prominent crowdfunding platforms, non-equity crowdfunding in return for a reward is conducted (Massolution, 2015). In this case, funders are compensated in exchange for some kind of reward (e.g. getting the future product for free or for a discount price) (Belleflamme et al., 2014). Two other kinds of non-equity crowdfunding are lending or donation-based crowdfunding in which either the funds are offered as a loan and returned together with an interest rate to the funder or no compensation exists (Kuppuswamy & Bayus, 2015b). Equity crowdfunding is a form of financing in which entrepreneurs make an open call via an online platform to sell a specified amount of equity to potential investors on the Internet (Ahlers et al., 2015). Although equity crowdfunding was recently legalized in the US and some other countries, it is still relatively rare as it captures less than 8% of the global crowdfunding volume (Massolution, 2015). Reward-based crowdfunding as compared to lending and equity-based crowdfunding shows a very dynamic pattern of support (i.e. U-shaped) from funders (Kuppuswamy & Bayus, 2015a), which is significantly different from the increasing pattern of support associated with herding with equity or lending-based crowdfunding (Zhang & Liu, 2012), or the decreasing pattern of support with donation-based crowdfunding (Burtch et al., 2013). Hence, reward-based crowdfunding is the approach which might depend the most on dynamic factors related to the crowdfunding campaign.

Generally, different payout modes can be differentiated for crowdfunding campaigns (Tomczak & Brem, 2013). Usually the fundraiser sets a goal or ultimate amount of money, which they are attempting to raise with their campaign. Most crowdfunding platforms use the so called all-or-nothing or threshold pledge approach (Belleflamme et al., 2010; Tomczak & Brem, 2013). In this model, the target sum of money which is set as the fundraising goal by the fundraiser when posting the campaign must be reached or exceeded in predefined pledging period in order to release the money to the founders. If this threshold amount is not met, all pledges are voided and returned to funders (Belleflamme et al., 2010). This approach protects less rational or overoptimistic funders from investing in projects that cannot raise enough money to survive (Bradford, 2012). In the keep-what-you-raise funding model on the other hand, founders 'can keep the money they raise even though their funding goals are not achieved' (Gerber et al., 2012, 3). However, to prevent the setting of arbitrary funding goals, different fees are charged by platform providers depending on whether the goal is met, not met or exceeded.

Following the current state of literature, two groups of actors are involved in the two-sided market of crowdfunding (Mollick, 2014; Tomczak & Brem, 2013). The funders are the subsidy-side, funding the money-side, the founders. They underline different influencing factors for participating in crowdfunding.

Perspective of founders

In order to get a clearer understanding of the actors involved in crowdfunding, the following section describes founders in more detail. The variety of types of founders is high. Whole industries (Grier, 2011), companies of different sizes (Burger-Helmchen & Pénin, 2010), or non-profit organizations (Brabham, 2009) relied on crowdfunding in the past.

The primary motivation to launch a crowdfunding campaign is to ensure the funding of a project (Boeuf et al., 2014). Crowdfunded campaigns can raise small amounts of capital, often under \$1000, to initiate a particular one-time project (Mollick, 2014). For entrepreneurs, crowdfunding is a way to seek relevant capital without giving away any shares and therefore associated with low risks (Kuppuswamy & Bayus, 2015a). Therefore, crowdfunding appears to be a viable source for entrepreneurial seed capital (Schwienbacher & Larralde, 2010). With crowdfunding, founders can access a market while raising external money at the same time (Burkett, 2011). The importance of crowdfunding for entrepreneurs is shown by the fact that 42 of the 50 highest funded projects on the global leading crowdfunding platform Kickstarter were initiated by an entrepreneurial venture (Bruton et al., 2015).

Another motivation is the expected support and feedback from the anonymous crowd through comments, suggestions, or optimizations (Bradford, 2012). Kleemann et al. (2008, identified a rising relevance of feedback for crowdfunding incentives from the crowd. In addition, founders get access to a wide range and variety of knowledge and feedback of the crowd (Colombo et al., 2015b; Surowiecki, 2004). Even if the crowdfunding campaign fails, crowdfunding platforms generally give founders the opportunity to take the feedback, tweak their campaign, and then relaunch it again. The quality of community feedback through the “wisdom of the crowd” was recently empirically substantiated by Mollick and Nanda (2015, who find a significant agreement between the funding decisions of crowds and experts. Hence, launching a crowdfunding campaign can be seen as an easy and low-cost approach to testing market acceptance of a new product or service concept (Bradford, 2012). Thus, market potential can be identified and used more efficiently (Belleflamme et al. 2010). If no or only a small amount of funding is contributed by the crowd, the project fails and can be killed before a substantial amount of resources is invested and before a lock-in situation for the founder arises.

Third, as crowdfunding bases on an open web-based call for funding, the visibility of an entrepreneurial venture increases. Hence launching a crowdfunding campaign can have a positive marketing effect as it increases popularity of the new venture by viral marketing or even press attention (Mollick, 2014). Furthermore, the reputation of the founder can be improved (Bradford, 2012).

Perspective of funders

Now, the funders or the ‘crowd’ will be described more detailed, followed by a reflection of their motivation, and their benefits of participating in a crowdfunding project. The group of funders are the crowd, who ‘[...] decide to financially support these projects, bearing a risk and expecting a certain payoff’ (Ordanini et al., 2011, 5). Usually, each member of the crowd is a registered user on the crowdfunding platform as the payment of a financial contribution needs to be facilitated and controlled. Funders are characterized as intelligent and qualified persons (Howe, 2008), however, there is no necessary qualification for the funders in terms of knowledge or solvency (Schenk & Guittard, 2009). The likelihood that an individual supports a crowdfunding project varies according to social status, preferences, or experiences. Generally, the openness for innovation, the enthusiasm for new ideas and accordingly the willingness to support new entrepreneurial ventures in an early stage are attributes of certain social groups (Rogers, 2010). The younger generation of ‘digital natives’ grows up in a digitalized world in which they share information and are less reluctant regarding online transactions. The likelihood

of an individual to participate in crowdfunding as a funder is rising with the number of projects which were already supported as well as their funding success (Brabham, 2008).

The decision to participate in crowdfunding is directly linked to the rewards that can be received from the contribution. Funders are motivated by extrinsic and intrinsic factors (Cholakova & Clarysse, 2015). On one hand, funders consider rational arguments and estimate their financial rewards but on the other hand social motivation or emotional incentives do play an important role. Mollick (2014, distinguishes three different types of extrinsic incentives related to the type of crowdfunding: 1) In lending-based crowdfunding, a certain interest rate on the capital invested is paid to the funders. 2) In equity-based crowdfunding, funders receive equity stakes of the entrepreneurial venture. 3) In reward-based crowdfunding, funders receive a certain reward for their support of a project. This reward can take various forms, such as being credited in a movie, being able to influence the design or functionality of a product, receiving a thank you message or a T-shirt etc. Alternatively, reward-based crowdfunding treats funders as early customers. In this case, they get special access to the products or services provided by the founded entrepreneurial venture (e.g. receiving this at an earlier date, better price, etc.)

Previous studies found that intrinsic primarily social incentives such as reciprocity (Faraj & Johnson, 2011) or community benefits (Belleflamme et al., 2014) are most relevant for the funders, whereas financial rewarding is less important (Allison et al., 2015; Lambert & Schwiendbacher, 2010). Hence, it is essential, that an emotional connection to the project or company can be established by those launching a crowdfunding campaign regardless of the expectations of financial returns (Eickhoff & de Vries, 2011). Although economic return is an important incentive, there are also some intrinsic incentives.

Obviously, contributions to crowdfunding projects, even in markets where crowdfunding is driven by altruism, appear to be primarily stimulated by the quality of the project (Ahlers et al., 2015; Burtch et al., 2013; Mollick, 2014). As funders should be emotionally affected in order to participate in crowdfunding (Cholakova & Clarysse, 2015), links to social capital are an important incentive for funders to engage (Ahlers et al., 2015; Colombo et al., 2015b). Social capital means ‘the sum of the actual and potential resources embedded within, available through, and derived from the social contacts of an individual or an organization’ (Nahapiet & Ghoshal, 1998, 243). This incentive is driven by the opportunity to engage with friends and peers as well as interact in a community of people with similar interests. Ordanini et al. (2011) find in their study that during an early initiation phase of a crowdfunding campaign most contributions come from friends of the founders. Furthermore, contributing to an idea demonstrates an interest in an idea or venture concept and can thus create a feeling of social identity with a group of other funders who share similar preferences and values.

Theoretical Framework

The importance of information to achieve funding

To start a crowdfunding campaign, founders have to apply to the platform with detailed information on the project or on the company such as homepage, pictures or videos (Belleflamme et al., 2014; Bruton et al., 2015). Providing the relevant information about the project, its background, the founders as well as

presenting these information in the right way, can be assumed to be a crucial element in facilitating a successful crowdfunding campaign (Mollick, 2014).

Naturally, crowdfunding is a setting with information opacity, which could hinder investments from funders. Although, crowdfunding offers various ways to provide information to the crowd information asymmetries between the investor and the founder exist (Ahlers et al., 2015; Hall, 2010). The entrepreneur has typically more detailed and reliable information about the likelihood of success than potential funders do. Entrepreneurs usually want to unveil as little information as necessary because particularly for new ideas, revealing sensitive information can significantly limit pioneer advantages and make the inventor prone to imitation (Hall & Lerner, 2010). This information asymmetry makes it difficult for funders to assess the success potential of a project. Therefore, a problem of adverse selection can arise, assuming that a substantial amount of the campaigns which are displayed on a crowdfunding platform are rather poor in quality (Leland & Pyle, 1977). Furthermore, average funders in crowdfunding are not likely to have the time, resources, and willingness to analyze the entrepreneurial venture and its business model in close detail (Ahlers et al., 2015). However, the success of some ventures that raised substantial amounts of crowdfunding (see e.g. Bruton et al., 2015, for examples) shows that funders seem to be able to infer the quality of an entrepreneurial venture by interpreting the available information in a crowdfunding campaign (Ahlers et al., 2015; Mollick & Nanda, 2015).

Following *signaling theory* (Spence, 1973), decision-makers will make use of observable cues (indices) as well as manipulable signals from the other party to justify assumptions about non-observable outcomes. The signaler (i.e. the project owner) possesses information about the project that is not available to outsiders (i.e. potential funders). In order to reduce information asymmetries between the founder and the less informed funders the founder deliberately sends positive quality signals to guide the decision-making of the funders (Block et al., 2017; Connelly et al., 2011). Specifically in this context, funders will interpret and compare observable attributes of a campaign that are thought to correlate with the underlying but unknown quality of the entrepreneurial venture in order to assess the value by estimating the conditional probability that it will eventually succeed (Stuart et al., 1999). Based on a given set of observable characteristics related to the project, the founders and the context, funders make an investment decision under information asymmetry (Ahlers et al., 2015; Moss et al., 2015). In order to increase the likelihood of receiving funding, founders thus need to provide the right information to send the right signals, which creates confidence in the project and convinces potential funders. Block et al. (2017, identify four characteristics of signal effectiveness. 1) Signals should be communicated frequently and with a high signal consistency in order to increase the likelihood that the receiver captures these signals. 2) Signals should be clear and understandable to ensure that these are interpreted in the expected way. 3) Signals should be provided in an environment that facilitates the interpretability. In this regard, particularly access to the interpretations of other receivers can lead guide the direction in which signals are interpreted (Connelly et al., 2011). As crowdfunding is regarded as a composition of rational investment decision-making and emotional involvement, the information provided needs to address both rational and emotional expectations of potential funders (Galak et al., 2011). Three types of information are of particular relevance: 1) characteristics of the project, 2) characteristics of the founder, and 3) social interaction among the crowd and the founder (Kuppuswamy & Bayus, 2015b):

Information about the project

Information which the founder provides in the description will be influential for the funding success (Estellés-Arolas & González-Ladrón-de-Guevara, 2012). Mollick (2014) empirically shows the importance of the underlying project quality (i.e. providing videos and early updates), the project duration and the project type are significantly related to funding success. Furthermore, the requested amount of funding which could also be seen as a quality indicator was shown to be negatively related to funding success. Other studies showed that the visual design (e.g. pictures, videos or texts) of a crowdfunding campaign enhances the success potential (Colombo et al., 2015b; Marom & Sade, 2013). Furthermore, it helps if the project is featured on the homepage of the crowdfunding platform (Qiu, 2013). Lastly, the type of offered rewards makes as significant difference (Belleflamme et al., 2014; Colombo et al., 2015b)

Information about the founder

Research shows that one of the most reliable predictors of an entrepreneurial ventures success is human capital (i.e. capabilities and skills for managing the founding process) (Unger et al., 2011). In line with signaling theory, funders seek information on the qualification of the founder – individual and company – as they get a more realistic anticipation of funding success (Bruton et al., 2015). Furthermore, funders tend to contribute to projects and also to project owners in which they believe in and with whom they can identify themselves (Schwienbacher & Larralde, 2010). Previous research shows that funding success is significantly related to individual quality signals like personal characteristics (including gender and race) (Colombo et al., 2015b; Kuppuswamy & Bayus, 2015b). For example the number of projects already published and their funding success indicate that the founder knows what she is doing. If a founder or the project goal is positively referred to in social media, the likelihood for a crowdfunding project to succeed is increasing (Mollick, 2014). Information about intentions, ethical concerns or individual values are also essential. Additionally, researchers analyzed the importance of social embeddedness of the founder. Contributions of the founder herself to other crowdfunding projects are positively related to the creator's internal social capital and thus increase the likelihood of funding success (Colombo et al., 2015b; Zvilichovsky et al., 2015). Social networks can substantiate the positive perception regarding the founder and hence influence the decision for or against funding of an entrepreneurial venture (Lawton & Marom, 2010). Researchers therefore showed that the closer founder, project and funder are related via social networks, the more likely the funding success (Zheng et al., 2014). The number of Facebook friends and LinkedIn contacts were therefore analyzed in their relation to funding success (Colombo et al., 2015b; Mollick, 2014).

Social interaction during the campaign

Although the concrete attributes, which facilitate social interaction during a crowdfunding campaign, have not been tested yet, previous findings substantiate that social interactions might take an important role during funding decisions. In line with the arguments of signaling theory, social interaction can increase the determinants of signal effectiveness (Block et al., 2017; Connelly et al., 2011), as it can guide the observability and interpretability of the signals of crowdfunding campaigns. Social interaction gives individuals (i.e. the crowd members and the project owner) the opportunity to openly highlight,

repeat, explain or even defend certain signals to others. Kuppuswamy and Bayus (2015b) suggest that social information such as others' funding decisions will play an important role in the ultimate success of a crowdfunded project. Different to professional investors, funders in crowdfunding projects are largely affected by subjective information (Iyer et al., 2009). Herzenstein et al. (2011) even find that subjective information affects the decisions of funders more than objective and verifiable information. Studies show, that social information might sometimes even crowd-out rational decisions based on quality. For instance, Simonsohn and Ariely (2008) report that bidders tend to herd into online auctions with more bids even though the number of bids is not necessarily an indicator of higher quality. This effect was shown to cause an acceleration and increasing patterns of support in the case of lending-based funding (Zhang & Liu, 2012). Colombo et al. (2015b) show the importance of early contributions for the success of a crowdfunding campaign. As funders will assess the previous performance of a campaign, a high number of early pledges will be interpreted as a social quality signal on its own or might at least influence the interpretation of other existing project information. This herding behavior might not even be irrational, as Mollick and Nanda (2015) empirically show that there is significant agreement between the funding decisions of crowds and experts. Brabham (2008) shows that 70% of the current funders had heard from the project via a blog on crowdfunding platform.

Based on these previous findings, it becomes quite evident, try to align their decision with others and use social signals to support their interpretation of available information. The social context seems to enable the development of a shared understanding of the crowd regarding the quality of an entrepreneurial venture. In platform-based crowdfunding situation, potential funders usually get the opportunity to post comments about the project (Mollick, 2014). In addition to the signaling effect by the number of other supporters to the project, these comments enable members of the crowd to share their perceptions, feelings, quality assessments and even other objective information about the project. This adds a qualitative dimension to the herding effect, as they can explicate enthusiasm as well as displeasure. Comments of other potential funders during the run time of the crowdfunding campaign might have an impact on the community experience and create mutual emotional attachment of funders. Furthermore, as members of the crowd can respond to others comments, multi-actor dialogues about the project can create a shared understanding of the project. Based on previous findings that the frequency of signals per se is an important characteristic of signaling effectiveness (Block et al., 2017; Fischer & Reuber, 2014) in terms of awareness, we assume, that it is not necessarily important if these comments are positive or negative. According to the empirical findings of Berger et al. (2010), also negative comments can be beneficial for the marketing of newly introduced yet unknown products. As crowdfunding campaigns usually propose entrepreneurial ventures, which are previously unknown, we assume that crowd resonance in general creates a greater awareness of a project and its signals. Based on this, potential investors might assess other signals and evaluate the conversation in the crowd. Therefore, we assume that comments from crowd members will have a stimulating effect on crowdfunding and will increase the likelihood of success. We hypothesize:

Hypothesis 1: Comments from crowd members during a crowdfunding campaign increase the likelihood that the project is successfully funded.

In addition to the increasing effect caused by community information sharing and potential herding effects, Kuppuswamy and Bayus (2015a) find a dynamic pattern of funders' support during reward-based crowdfunding campaigns instead of an exponential development. Studies suggest that early contributors to crowdfunding projects are often friends and family members. The majority of contributors who are strangers often contribute when a project gets closer to *conclusion* (Agrawal et al., 2015; Kuppuswamy & Bayus, 2015a). This dynamic shows that despite the herding and the signaling effect caused by increased project popularity (i.e. more comments from crowd members), other social interactions might play an important role for the funding decision. Ahlers et al. (2015) stress the importance of information going from the founder to the crowd in the case of equity crowdfunding, as these can deliberately send positive signals to potential funders to reduce information asymmetries. As effective signals should be clear and understandable (Block et al., 2017), founders can provide additional information during the crowdfunding campaign to disclose additional details about the project, explain or substantiate misleading or ambiguous information or to directly react to comments of crowd members. Crowdfunding platforms provide founders with two options to disclose information to the crowd while running a crowdfunding campaign: Updates and Comments. Updates fulfill a similar function as comments, but not as a direct response to the comments of others. Updates are a one-sided communication tool, which can be used during a campaign to provide additional information about the entrepreneurial venture. They typically provide information about the progress of the project such as breakthroughs or success, new team members etc. They enable founders to increase the credibility and legitimacy of the entrepreneurial venture during a crowdfunding campaign. From a signaling theory perspective, updates can deliberately provide new signals about the project quality. Mollick (2014) regards early updates as an indicator of project quality and finds empirical support for the effect of early updates on the success of crowdfunding campaigns. Block et al. (2017) show that updates have a positive effect on crowd participation for equity based crowdfunding. Following this line of research, we hypothesize:

Hypothesis 2: Updates from the founder to the crowd during a crowdfunding campaign increases the likelihood that the project is successfully funded.

Comments on the other hand allow founders to join the conversation of the crowd as they can directly respond to comments and critique from the crowd. Therefore, comments by the funder enable to direct the conversation of the crowd and potentially influence the dominant view of crowd members. For instance, if crowd members negatively comment on a project, the project owner might address concerns, provide arguments or evidence to increase confidence or just express gratefulness for helpful feedback on the project. From a signaling point of view, comments from funders might have two benefits. First, as the founder directly responds, she can guidance in interpreting certain information about the project. Second, comments of the founder show that she is willing to invest considerable time (Spence, 1973) and cares about potential funders. We hypothesize:

Hypothesis 3: Comments from the founder to the crowd during a crowdfunding campaign increases the likelihood that the project is successfully funded.

Finally, in the course of a social interaction of the crowd and the founder, projects might go through an ongoing discourse that might involve positive as well as negative opinions about the project. As both sides (i.e. members of the crowd and the founder) have the opportunity to respond to previous comments, the conversation might go through different phases. In line with our previous argument, it is quite likely that this ongoing conversation creates a greater awareness and is generally positive for the success of a crowdfunding campaign. However, in line with the signaling effect caused by a coherent collective interpretation in a larger group (Connelly et al., 2011), we assume that the concluding opinion about the project in the crowd will influence the investment decision of crowdfunders. We hypothesize:

Hypothesis 4: If a conversation among crowd members and the founder is concluded by a positive comment, this will increase the likelihood that the project is successfully funded.

Data and Methodology

Data

Trying to allow a broad approach to the field of crowdfunding, we relied on real data, which were provided and collected from a crowdfunding platform. We chose a crowdfunding platform that allows to launch campaigns without any thematic restrictions or specialties (e.g. social crowdfunding, sport crowdfunding, art crowdfunding etc.). We selected Visionbakery, which is the second largest crowdfunding platform in Germany (Visionbakery, 2015). Although Visionbakery is nationally bound, it provides a suitable unit of analysis in terms of its popularity in Germany, its age (founded in 2011), the number of crowdfunding campaigns, as well as the comparability in technical orientation to Kickstarter, which is the dominant crowdfunding platform in the world. Visionbakery (like Kickstarter) employs the all-or-nothing, reward-based crowdfunding model (Colombo et al., 2015). The provider of the platform charges a fee only if the project reaches its target limit and therefore is successful. Visionbakery has no lower and upper boundaries for the targeted amount of money of projects; therefore small as well as bigger funding projects from different industries are launched at this platform (Visionbakery, 2015). Geographically, crowdfunding research and practice has its origin in the US (Kappel, 2008). However, despite the limited international generalizability of our analysis, relying on Data from Germany increases the international coverage of crowdfunding research. Germany gains increasing importance in the international start-up scene, as for instance one third of business incubators within the European Union including the largest business incubator organization are located in Germany (Mubarak Al-Mubarak & Busler, 2010).

Visionbakery provided us a unique data set with all 446 crowdfunding projects started at their crowdfunding platform since the start in 2011. The data set includes the information that all founders have to provide when they start a crowdfunding project at Visionbakery. We got full information about

all projects and full access to all project web pages. We eliminated projects from our sample with incorrect or insufficient information, e.g. fantasy names, missing information, deleted projects. Thus, our final sample consists of 430 crowdfunding projects comprising of 231 (53.7%) successful funded and 199 (46.3%) non-funded projects. The same original data set, provided by Visionbakery, was analyzed with different research questions and different methods in 2016 (Kraus et al., 2016).

Measurement

To select appropriate variables for our study we screened the literature about existing empirical crowdfunding studies (e.g. Mollick 2014) and included variables that were previously studied in our study design. Further, we searched the project descriptions at the web pages for additional information, which could be relevant for funding success and extended our data set with information not previously discussed in the literature (e.g. social interaction of the project owner with the crowd). In this way, the data provided by Visionbakery were systematically expanded through qualitative content analysis (Mayring, 2014) of the provided information on each project web page. In extracting appropriate project information from the web pages, two independent researchers (raters) followed a mixed coding approach. The raters systematically searched for information that could be linked with predefined variables (e.g. pictures, videos, Facebook link, external project homepage) out from previous crowdfunding studies (deductive category assignment). When one of the two raters identified new information, which were not covered in the study design before, the set of variables was extended by creating a new variable (e.g. social interaction variables) covering this aspect (inductive category formation). The search process concerning new constructs was then repeated again for all projects that were already analyzed before (iterative process).

The two raters followed a clear predefined coding process. In a first step, the two raters assessed several projects together to get a common understanding about the available information and to increase validity and correctness of coding. After this training phase, the data set was divided in two subsamples and the two raters coded the remaining project information independently. A random set of 50 (11.6%) projects was reanalyzed by the raters to test interrater reliability. This test resulted in total agreement of both raters on all constructs. The high rater agreement results from the character of information extracted from the web pages and a clear predefined coding strategy for variables that allow interpretation. For a substantial part of the constructs the researchers has to count e.g. pictures provided at the web page or to decide if a certain criteria is present or absent (e.g. external web page or link to Facebook page). Only for a few constructs the coders had to interpret the meaning of information provided (e.g. positive and negative comments from the crowd).

In total, we considered 17 different variables in this study (see Table 1 for descriptive statistics):

Funding success: Funding success is the dependent variable. We measure funding success with a dummy variable. The variable has the value one if the project is successful (targeted amount of money was reached) and zero if the sum of contributions could not reach the predefined threshold value. This information was provided by Visionbakery.

Individual person: We differentiate between individual people and organizations (registered unincorporated associations, enterprises, and others). The dummy variable takes the value 1 if the project initiator is an individual person and 0 otherwise. The project team collected the information from the project web page.

Number of other projects: The variable captures the number of previous or parallel crowdfunding projects started by the project owner. The variables can be interpreted as proxy for crowdfunding experience. We measured the numeric variable by counting projects linked to the project owner ID provided by Visionbakery.

Number of projects supported: The variable measures in how many other crowdfunding projects the project owner himself/herself has invested. The number of supported projects is listed on the personal profile of the project owners at the crowdfunding platform. The project team collected the information.

Industry: Projects are categorized by Visionbakery. Due to the high number of industry categories, we aggregated these into seven different categories: ‘art, theater, design & fashion’, ‘movie and photo’, ‘music’, ‘social’, ‘events’, ‘games (sport and dance)’ and ‘other’. Therefore, we measure industry with a nominal variable, which is represented by six dummy variables in the regression analysis. The largest category ‘art, theater, design & fashion’ builds the reference group in the regression analysis.

Project goal: The desired amount of funding, which is defined by the project owner. Visionbakery follows the all-or-nothing payout model (Belleflamme et al., 2010; Tomczak & Brem, 2013). Hence, the crowdfunding amount will only be transferred to the founders if the predefined threshold value is achieved. Otherwise, the money transfer is cancelled. This strict knockout criterion reprimands the project owner to set realistic goals – high enough to finance the project idea and stimulate the crowd, low enough to allow a cash flow. The project goal is measured as an absolute metric variable in thousand Euros. The information is provided by Visionbakery.

Pictures: Pictures sometimes tell more than words, following this saying, explaining pictures for the projects are counted by two raters. The dummy variables pictures take the value of one if there are one or more pictures to support the funding project and zero otherwise.

Video: Visionbakery encourages the project owner to produce a video to introduce the project to a broader audience. Videos can be used to explain different aspects without long textual descriptions and emotions can be communicated more easily. The raters checked the presence of videos. The dummy variable has the value one if one or even more videos are present on the project site and zero if no video could be found.

Facebook: The dummy variable Facebook checks the presence of a separate Facebook link for the project. The variable has the value one if there is a Facebook link on the project webpage and zero if not. The two raters manually collected the information about Facebook presence.

Homepage: An additional homepage is another option of presenting relevant and encouraging information around the crowdfunding project and the founders. This dummy variable checks the presences of an individual homepage for the project and takes the value of one if there is an external homepage and zero otherwise. We manually assessed the presence of a homepage for each project.

Picture/Logo of the project owner: A picture of the project owner shows more, deeper information about the person. In case of organizations (registered clubs, enterprises or others), the logo

mirrors the corporate identity and is the equivalent of an individual portrait picture. We manually assessed the presence of a picture of the project owner or a logo of the organization at the project web page and transformed it into a dummy variable. The variable takes the value of one if there are pictures or logos to support the funding project and zero otherwise.

Duration of the crowdfunding campaign in days: We analyze the duration of a project as well as it might be an indicator of the self-perception of the founder. A too short funding period may be perceived as too self-confident. If it is too long however, this might signal that the founder is not convinced by the own project. The numeric variable *duration* measures the number of days the project is open for funding. We calculated this variable by means of starting date and end date of the project provided by Visionbakery.

Rewards: The project team analyzed the number of incentives offered to funders, as rewards can encourage them to give money in expectation of being rewarded in return (e.g. by receiving a free sample of the product, becoming a member of a community etc.), personal or material. With this metric variable we measure the number of different rewards offered to funders.

Updates: Project owners are supposed to inform the crowd about new developments, tendencies or modifications to the project. This job is time consuming and could be a signal of dedication to the project and the crowd. We measure with this metric variable the number of updates on the project web page initiated by the project owner after project launch. Data was provided by Visionbakery.

Comments from the crowd: Right below the project presentation, there is the chance for the crowd to comment on the specific project. The raters counted the overall number comments of the crowd for each project. The metric variable capture if and how often the crowd member comment on the project.

Last comment positive: The two raters of the project team went through all comments posted by the crowd at the project web page and classified their positive neutral or negative meaning. Positive comments are e.g. congratulations expression of positive attitude toward the project. Neutral comments are general statements or information or welcome greetings on the crowdfunding platform. Negative comments are statements about e.g. missing information or missing incentives. A dummy variable capture if the last comment of the crowd is positive.

Project owner comment: The raters of the project team counted the number of comments by the project owner as response to the comments of the crowd. The metric variable therefore captures if and how often project owners' response to comments of the crowd.

Insert Table 1 about here

Method

Due to the dichotomous character of the dependent variable *funding success* (0=non funding, 1=successful funding), we conducted binary logistic regression analysis to test our hypotheses. Thus, we model the probability of successful funding of a crowdfunding project. First, we estimated a model considering all variables, which capture *information about the founder* and *information about the project* (Model 1). This model reexamines some success factors from previous studies. Second, we extended this

model by including the variables *comments from the crowd*, *last comment positive*, *project owner comments* and *updates* to test our hypotheses (Model 2).

To evaluate the goodness of fit of the binary logistic regression analysis we calculated pseudo R-square measures (Nagelkerke and Cox & Snell), the percentage of right classified data sets, and the area and the Receiver Operating Characteristic (ROC) curve (Hosmer Jr et al., 2013). For all statistical tests in our study, we use the significance level of 5% as threshold to interpret a result as being significant. Finally, in addition to the binary logistic regression analysis, we calculated the probabilities for successful funding in respect to different variables values. Based on Model 2, we calculated these probabilities for all variables by changing the value of a particular and keeping the rest of the variables the same. Thus, for calculating the probabilities to get funded (not funded) we changed only the value of one variable in the reference model. The variables in the reference model have the following values: Each dummy variable takes the value zero and the numeric variables take the mean value (See Table 1 for variables type and mean values).

Findings

The results of the goodness of fit statistics of Model 1 and Model 2 are satisfying. The Hosmer and Lemeshow test statistics are not significant and therefore indicate that the models fit the data well (Hosmer Jr et al., 2013). The results clearly show that the consideration of *information about social interaction during the campaign* improve the model fit. The Cox & Snell pseudo R-Square value and the Nagelkerke pseudo R-square value are about 0.194 and 0.260 for Model 1 and 0.334 and 0.446 for Model 2. The percentage of correctly classified data sets is for Model 1 about 66.3% and for Model 2 about 76.5%, which exceed the value of 53.7% expected in case of random assignment in both cases. The calculated area under the ROC curve is about 0.756 (Model 1) and 0.841 (Model 2), which indicate acceptable discrimination by Model 1 and excellent discrimination by Model 2 (Hosmer Jr et al., 2013).

The result of Model 1 shows five significant variables. Concerning the information about the founder we can report that the variable *individual person* is significantly negative ($B=-0.753$, $p=0.002$). Hence, an individual person as project owner has compared to an organization a lower probability of successful funding. The coefficient for *number of projects supported* is significant positive ($B=0.315$, $p=0.006$), meaning that the probability of success increases if the project owner invest herself/himself in other projects. The *number of other projects* is not significant in our model. Concerning the *information about the projects* we can report, that *social* projects ($B=0.815$, $p<=0.026$) have a higher probability to succeed in the crowdfunding process compared to project belonging to other industries. The coefficient of *project goal* is significant negative ($B=-0.127$, $p<0.001$). Thus, the percentage of success is higher for smaller funding projects than for projects with a high target limit. The coefficient of *rewards* is significant positive ($B=0.105$, $p=0.002$). The probability that a project is successfully funded increases with the number of rewards. All other variables capturing information about the project (*pictures*, *picture of project owner/logo*, *video*, *Facebook*, *homepage*, *duration in days*) are not significant in Model 1. (See Table 2)

The findings of Model 2 indicate six significant coefficients. The extension with variables capturing *information of social interaction during the campaign* lead to changes concerning three variables considered in Model 1. The variables *number of project supported* and the number of *rewards* are no longer significant. These variables might have some relevance to explain successful funding of crowdfunding campaigns but other variables seem to be more relevant. The coefficient of *duration in days* is significant to the 5% level ($B=-0.022$, $p=0.016$) in Model 2. This finding indicate that shorter funding projects are more successful than projects with a long-lasting funding period.

The variable *comments from the crowd* has a significant positive coefficient ($B=0.379$, $p=0.006$). Positive comments of the crowd therefore increase the probability of successful funding. Hence, Hypothesis 1 is supported. The number of *updates* has a significant positive coefficient ($B=0.286$, $p<0.001$). The project owner is able to increase the probability of success if he/she keeps the project web page updated and the crowd informed. Hence, Hypothesis 2 is accepted. The variable *project owner comments* shows no significant relationship ($B=-0.140$, $p=0.299$). Therefore, we have to reject Hypothesis 3. Finally, the coefficient of the variable *last comment positive* is significant positive to the 5% level ($B=0.822$, $p=0.028$). Thus, we accept Hypotheses 4. (See Table 2)

Insert Table 2 about here

Table 3 shows the change in probability based on the main effects model for each variable change in comparison to the reference model. In the reference model – where all dummy variables have the value zero, and all numeric variables take the mean value – the probability that the project gets funded (not funded) is about 42.2% (57.8%). Table 3 displays the changes of the probabilities for successful and unsuccessful funding changes depending on single variables (i.e. keeping all other variables constant). If e.g. the number of *comments from the crowd* is zero (no comments from the crowd) , the probability that the project get funded decreases from 42.2% in the reference model to 33%. If there are 10 *comments from the crowd* the percentage of successful funding increases to 95.6%. Providing regular *updates* (e.g. 10 updates) on the project homepage also increase the probability of success to 85.1% compared to a decrease in the probability of success to 24.6% if the project owner does not update (*update=0*) the project web page. If the last comment of the crowd is positive (dummy variable last comment positive takes the value 1) the probability that the project get funded increase to 62.4% compared to 42.2% in the reference model. See Table 3 for examples of all other considered variables.

Insert Table 3 about here

Conclusions

The goal of the study was to reflect and test the importance of social interactions during crowdfunding campaigns. Furthermore, we reexamine some design factors of crowdfunding projects from previous studies (e.g. Colombo et al., 2015b; Mollick, 2014). Together, we contribute to the recent discourse about the success factors and provide clear design implications that can be utilized by founders in order to

design and maintain crowdfunding campaigns. Our overall results show six relevant success factors for crowdfunding campaigns, which can be divided in social and framework factors. These are summarized in Table 4.

Key research insights: The importance of social interaction during the campaign

The focus of our analysis lays on the social interaction among the crowd and the founder during a crowdfunding campaign. Our results show that social interaction during a crowdfunding campaign increases the likelihood of funding success. We find that comments from the crowd exert a positive effect. This finding is in line with those studies that propose a herding effect caused by contributions of others (Colombo et al., 2015b; Kuppuswamy & Bayus, 2015a; Zhang & Liu, 2012). Based on the logic of signaling theory, however, our finding adds a qualitative dimension to the herding effect. As comments from crowd members on particular projects might be positive or negative and can also provide additional argumentation or raise questions, comments can cause a dialog among crowd members. This dialog can guide the interpretation of quality signals sent by the project owner. Through repeated social interaction within the community, comments are relevant for others to get a better understanding of the project over time. In line with Brabham (2008) who shows that a significant share of contributors learn about projects via a blog on crowdfunding platform, this highlights that comments and discussions by crowd members are an important marketing tool and should be moderated during the campaign. This finding implies that crowd members should be encouraged to comment of the project because this creates a greater awareness for the crowdfunding project and enables potential founders to develop a collective interpretation of the quality signals of a project.

Our analysis further supports the relevance of dynamic interaction between the founder and the crowd (Ahlers et al., 2015; Moss et al., 2015). We find that regular updates from the project owner are a relevant success factor. This finding extends the previous finding by Mollick (2014) who shows that early updates have a positive effect on a crowdfunding campaign. However, regular updates can significantly reduce the information asymmetry, are a sign of engagement of the founder and create awareness during a crowdfunding campaign. Consequently, founders should provide regular updates about the project and keep the crowd informed about what is going on. It might also be advised to celebrate successes and milestones as these substantiate the quality of the project and the crowds' perception about the likelihood that the project succeeds.

Interestingly, comments from the founder, which could enable an ongoing dialog between the crowd and the founder, do not show a significant empirical effect of the success of a crowdfunding campaign. This can be interpreted as an indicator, that whereas the communication among members of the crowd embedded in positive resonance can be informal, the expectations about the founder might be different. Instead of directly joining the informal social conversation with the crowd through comments, more structured and official updates on the project seem to be preferable. Furthermore, we see that it is important whether the conversation among the crowd members and the founder is concluded with a positive or a negative comment. Although this finding is interesting per se, it might also add to the previous finding. Comments by the founder might not be beneficial in general. However, as it is

important to steer the conversation into a positive direction, comments from the founder might have a particular importance when the conversation runs the risk to be negatively concluded and interference of the founder would be helpful. Therefore, founders might use comments in order to address potential negative opinions and to steer the conversation into a positive direction. In line with our findings, it is likely that independent moderators who monitor conversations of crowd members and interfere whenever this is necessary could also fulfill this task.

Additional research insights in comparison to previous studies

As we incorporated variables related to seemingly important information about the founder and the project into our analysis, we additionally contribute to the more general discussion about the design factors of crowdfunding campaigns.

We see that factors related to the person and its internal social capital might not be as important as previous studies suggested. We find that the likelihood of success of campaigns launched by an individual project owner is lower as compared to campaigns launched by an organization. Therefore, founders are advised to team up in order to demonstrate shared responsibility and complementary competences.

We see that the effect of internal social capital (i.e. the number of projects supported, availability on Facebook) (Colombo et al., 2015b; Kuppuswamy & Bayus, 2015b; Zvilichovsky et al., 2015) vanishes if the variables about social interaction during the campaign are added to the model. Reflecting on previous findings (Agrawal et al., 2015; Colombo et al., 2015a) this internal social capital might be helpful to raise early (smaller) contributions from the ego network (i.e. family and friends). However, the lion share of funding and thus the success of the project depends on convincing strangers through dynamic social interaction.

Regarding the information about the project, we reveal mixed findings compared to previous studies. We find that the likelihood of receiving funding depends on the type of entrepreneurial venture. Social projects are likelier to succeed than others are. In particular reward and donation-based crowdfunding is built around the supportive and social idea (Burtch et al., 2013; Mollick, 2014). If the purpose of the crowdfunding project is of a social nature, doing good might be a strong motivator to support a crowdfunding project and might also reduce the risk aversion of potential funders. As launching crowdfunding campaigns for social projects increases the likelihood of success, it might be advised to proactively address the positive social effects of the project or potential concerns regarding social sustainability issues.

Rewards, in contrast to the findings of Colombo et al (2015b) yield no significant effect in our model. This might indicate that crowdfunders are obviously more driven by intrinsic motives such as the community aspect when funding entrepreneurial ventures. A potential reason for this difference is that we rely on data from a German crowdfunding platform as compared to other studies that primarily use data from Kickstarter in the US. Furthermore, in contrast to others (Colombo et al., 2015b; Mollick, 2014), the use of visuals (i.e. photos or videos) does not significantly influence the outcome of the campaign.

We confirm previous results of Mollick (2014) who shows that an increasing target funding volume is negatively associated with success. Funding goals higher than 30,000 Euro have only a 2%

chance to succeed. This finding calls for breaking down the founding of entrepreneurial ventures into smaller interesting and manageable sub projects. Achieving the goal in a successful initial project even with a small target funding volume, might be the foundation for further successful crowdfunding projects. Previous projects increase the awareness of potential funders, help to build a group of loyal supporters for upcoming projects and provides the founder with relevant experiences of designing a crowdfunding campaign (Greenberg & Gerber, 2014; Janofsky & Loten, 2015).

We also support previous findings that a longer duration of the crowdfunding reduces the likelihood for success (Mollick, 2014). Hence, crowdfunding campaigns should be kept short in order to increase the likelihood of success. This finding might be explainable by two aspects. First, from the perspective of signaling theory, a short project duration might be interpreted as a sign of self-confidence of the project initiator and thus indicate a higher likelihood of a project which is under control. Second, a shorter duration of the crowdfunding campaign requires potential funders to make their decision faster. Hence, the decision might be based primarily on emotions and intuition as compared to a longer rational decision-making process (Miller & Ireland, 2005).

Insert Table 4 about here

Limitations and Outlook

While this paper contains several meaningful findings and concrete management implications, as any other research, it also holds a number of limitations. First, this paper considers only reward-based crowdfunding projects. Other types of crowdfunding (e.g. equity crowdfunding) are intentionally not considered. Hence, we recommend using the same research approach for equity or mixed crowdfunding projects. Second, the data set comes from a German crowdfunding platform. As crowdfunding is strongly influenced by legal regulations (Tomczak & Brem, 2013), which are considerably different already within the countries of the European Union, the geographic scope of crowdfunding studies in general should be extended to reach greater international coverage of results. Third, we only tested our hypothesis based on numerical data such as counts and proportions. However, comments from founders and funders as well as updates vary in their characteristics such as content, length or emotional message. Therefore, future studies could build on our findings and analyze their effects in closer detail, for example by content analyzing updates and comments. Finally, we encourage longitudinal studies to analyze effects during a particular crowdfunding campaign in more detail to allow to draw conclusions about timing effects. Finally, we suggest conducting more detailed analyses of the dynamic processes leading from social interactions to the funding decision and eventually the success of a reward-based crowdfunding campaign. In particular for the last question, a more detailed understanding of the behavior of backers is necessary, which calls for new methodological approaches and data sources (e.g. interviews or surveys) to complement the existing databases from crowdfunding platforms. As examples, the following research questions could be addressed.

- What is the right point in time to launch an update?

- How and when should founders interfere into the discussion of crowd members? Are immediate or later responses to positive or negative comments from the crowd advisable?
- How are certain decision variables of potential investors (e.g. confidence in the project, identification with the project, social status in the crowd) influenced by crowd resonance?
- What are the moderating effects of comments by certain members of the crowd (e.g. opinion leaders, backers, other project owners) on the link between crowd resonance and campaign success?

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Tables

Table 1. Descriptive statistics

Variables	Mean	Standard deviation	Min	Max	Type of variable
<i>Dependent variable</i>					
Funding success	0.537	0.499	0	1	Dummy
<i>Information about the founder</i>					
number of other projects	1.300	0.914	1	6	Metric
number projects supported	0.593	1.704	0	23	Metric
individual person	0.600	0.490	0	1	Dummy
<i>Information about the project</i>					
Project goal (in thousand Euro)	7.300	39.470	0.056	705.181	Metric
Pictures	0.679	0.467	0	1	Dummy
Picture of the project owner	0.935	0.247	0	1	Dummy
Video	0.774	0.418	0	1	Dummy
Facebook	0.486	0.500	0	1	Dummy
Homepage	0.691	0.463	0	1	Dummy
Duration in days	43.221	16.375	1	211	Metric
Rewards	7.367	3.989	1	27	Metric
<i>Social interaction during the campaign</i>					
Comments from the crowd	1.044	4.741	0	80	Metric
Updates	2.819	4.682	0	41	Metric
Project owner comments	0.563	1.647	0	21	Metric
Last comment positive	0.212	0.409	0	1	Dummy

Number of observations: 430

Table 2. Results of the logistic regression analysis

	Model 1				Model 2			
	B	Wald	p-value	Exp(B)	B	Wald	p-value	Exp(B)
Constant	-.549	.566	.452	.578	.137	.028	.867	1.147
<i>Information about the founder</i>								
number of other projects	.073	.206	.650	1.076	.055	.110	.740	1.056
number projects supported individual person	.315**	7.611	.006	1.370	.067	.456	.500	1.070
	-.753**	9.203	.002	.471	-.839**	9.416	.002	.432
<i>Information about the project</i>								
Industry		7.190	.304			5.731	.454	
movie & photo	.580	2.169	.141	1.787	-.016	.001	.973	.985
music	.416	1.246	.264	1.516	.336	.655	.419	1.400
social	.815*	4.957	.026	2.259	.707	3.117	.077	2.029
events	.415	.975	.323	1.514	.423	.870	.351	1.527
games (sports and dance)	.191	.201	.654	1.210	.465	1.044	.307	1.593
other	.037	.009	.924	1.038	-.144	.104	.748	.866
Project goal	-.127***	16.402	.000	.881	-.168***	18.930	.000	.845
Pictures	-.113	.166	.684	.893	-.335	1.130	.288	.715
Picture of the project owner	.386	.723	.395	1.472	.388	.631	.427	1.473
Video	.396	1.670	.196	1.485	.081	.056	.814	1.084
Facebook	.409	3.155	.076	1.505	.371	2.048	.152	1.449
Homepage	-.009	.001	.970	.991	-.089	.113	.737	.915
Duration in days	-.011	2.579	.108	.989	-.022*	5.841	.016	.978
Rewards	.105**	9.628	.002	1.111	.069	3.378	.066	1.071
<i>Social interaction during the campaign</i>								
Comments from the crowd					0.379**	7.426	.006	1.461
Updates					0.286**	29.978	.000	1.331
Project owner comments					-.140	1.081	.299	.869
Last comment positive					.822*	4.798	.028	2.274
<i>Model goodness of fit statistics</i>								
Chi-Square Model				92.934**				174.604**
Chi-Square Block								81.670***
Homser & Lemeshow Test				13.702				4.438
-2 Log likelihood				500.789				419.119
Cox & Snell R-Square				.194				.334
Nagelkerke R-Square				.260				.446
Correct cases classified				66.3%				76.5%
Area under ROC				.756				.841

Notes: Level of Significance: *** p < .001; ** p < .01; * p < .05;

Number of observations: 430;

Binary logistic regression with dependent variable: Funding success: 0= 'no funding' and 1= 'funded 100% or more.'

Cut off value for classification= .5

Table 3. Change in probability of successful (non-successful) funding

	Probability for ...	
	funding	no-funding
Reference Model	42.2%	57.8%
<i>Information about the founder</i>		
Number of other projects = 0	25.2%	74.8%
Number of other projects = 5	47.2%	52.8%
Number projects supported=0	41.3%	58.7%
Number projects supported=0	57.9%	42.1%
Individual person	24.0%	76.0%
<i>Information about the project</i>		
Industry		
movie & photo	41.9%	58.1%
music	50.6%	49.4%
social	59.7%	40.3%
events	52.8%	47.2%
games (sports and dance)	53.8%	46.2%
other	38.8%	61.2%
Project goal = 1,000 Euros	67.9%	32.1%
Project goal= 30,000 Euros	1.6%	98.4%
Pictures (yes)	34.3%	65.7%
Picture of the project owner (yes)	51.9%	48.1%
Video (yes)	44.2%	55.8%
Facebook (yes)	51.4%	48.6%
Homepage (yes)	40.1%	59.9%
Duration= 10 days	60.5%	39.5%
Duration= 80 days	24.4%	75.6%
Rewards= 1	32.0%	68.0%
Rewards= 10	46.7%	53.3%
<i>Social interaction during the campaign</i>		
Comments from the crowd = 0	33.0%	67.0%
Comments from the crowd = 10	95.6%	4.4%
Updates= 0	24.6%	75.4%
Updates= 10	85.1%	14.9%
Project owner comments= 0	44.2%	55.8%
Project owner comments= 10	16.3%	83.7%
Last comment positive (yes)	62.4%	37.6%

Notes: In the Reference Model, all dummy variables have the value 0 and all metric variables take the mean value. Probabilities calculated based on Model 2

Table 4. Key Managerial Insights

<i>Social Aspects</i>	<i>Framework</i>
<p><i>Keep the crowd informed with updates:</i></p> <p>The funders are interested in your process. Let them know what you are doing. Information about the product. technological progress. new team members. press releases – everything is worth an update.</p>	<p><i>Setting small funding goals:</i></p> <p>Aim low and do not get greedy. Remember that successful projects lead to high attention. strong self-confidence and a certain number of loyal supporter for your next project. Split your larger scope into sub projects which are each particularly interesting and less costly.</p>
<p><i>Generate resonance and reply on comments to attract the crowd:</i></p> <p>Encourage the crowd to comment on your project. Funders are like lemmings. they follow the crowd opinion. Push them to be part of your project.</p>	<p><i>Setting up short project duration:</i></p> <p>Short projects indicate self-confidence. Better define short projects to keep attention high. Use your network (e.g. Facebook follower), inform them and make them excited before the official project starts.</p>
<p><i>Ensure that the conversation comes to positive conclusion.</i></p> <p>Use comments in order to address potential negative opinions and to steer the conversation into a positive direction. Potentially use independent moderators who monitor conversations of crowd members and interfere whenever this is necessary.</p>	
<p><i>Team up!</i></p> <p>Launch a campaign as a group. not as a single person. This supports your idea and you have your first supporters in your own team.</p>	
<p><i>Highlight social benefits.</i></p> <p>Private interests are less likely to receive funding – find projects with public interests, blend public and commercial interests and highlight the social benefits of your project. Convey enjoyment for others.</p>	