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UNDERSTANDING THE ROLE OF SOCIAL PRESENCE IN CROWDFUNDING: EVIDENCE FROM LEADING U.S. AND GERMAN PLATFORMS

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Research paper

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Abstract

As a novel opportunity to acquire capital from the masses, crowdfunding has attracted great attention in academia and practice. So far, little is known about the factors that promote the success of crowdfunding projects, however. In this paper, we examine in how far the social presence perceived on a project's website influences the success of the respective crowdfunding project. Based on a data-driven analysis of 2.000 project websites from the largest crowdfunding platforms in the U.S. and Germany, we show that the perceived social presence has a significant influence on the success of crowdfunding projects. The obtained results indicate that using socially rich pictures and a socially rich description in the project presentation positively affects the success of a crowdfunding project. A socially rich profile page of the founder(s) in contrast appears to have a rather limited effect. The success of crowdfunding projects seems to be dependent on the participation behavior of the founder, however. Our results indicate that having backed other projects positively influences the success of one's own initiative. The number of answered comments might have a negative effect on the success of the initiative, though.

Keywords: Crowdfunding, Success Factors, Social Presence, Data-Driven Analysis.

1 Introduction

As a novel opportunity to acquire capital for projects from millions of individuals, crowdfunding has attracted great interest in academia and practice (Mollick, 2014). Crowdfunding initiatives are based on an open call that is made by ventures or individuals via the internet to a large group of people in order to raise money for specific purposes (Schwienbacher and Larralde, 2010). Especially for entrepreneurs, crowdfunding suggests itself as a novel paradigm to initiate, expand, or advertise business ideas (Belleflamme et al., 2013, Muller et al., 2013). Recent studies show that it can indeed be a viable strategy for entrepreneurs to source capital in order to realize innovative business ideas (Jung et al., 2014). However, there is also evidence that a considerable amount of crowdfunding initiatives fails (Xu et al., 2014).

It is hence necessary to create a better understanding of the still new phenomenon and its mechanisms in order to estimate, if and under what circumstances crowdfunding initiatives are likely to be successful. Essentially, crowdfunding initiatives create a two-sided market in which the founders develop and/or maintain a personal relationship with the investors (the so-called backers) to sell their product, project, or service (Zvilichovsky et al., 2015). This relationship is built and/or maintained using crowdfunding platforms (CFPs) and typically involves social aspects such as trust and reputation (Agrawal et al., 2014, Zheng et al., 2016). In this respect, the founder-investor relationship in crowdfunding markets bares similarities to the seller-buyer relationship that is developed in other online markets, in particular in the e-commerce domain (Agrawal et al., 2014).

To explain the success of crowdfunding projects, recent research increasingly focuses on studying the complex mechanisms of the crowdfunding market (Greenberg et al., 2013, Li et al., 2016). Most studies, however, still concentrate on analyzing basic aspects such as the monetary size of crowdfunding initiatives, the number of presented pictures, and/or the inclusion of additional media like videos (Greenberg et al., 2013, Koch and Siering, 2015, Zheng et al., 2014). In contrast, more complex aspects such as the richness of the presented information or social aspects often tend to be ignored. Thematically related studies in the e-commerce domain indicate that especially social aspects such as the perceived social influence, social support, or social presence can significantly affect the building of a seller-buyer relationship, though (Zhang and Benyoucef, 2016). In particular, the perceived social presence has been shown to be an important determinant for the successful building of seller-buyer relationships as it positively influences the purchasing intention on e-commerce platforms (Cyr et al., 2007, Hassanein and Head, 2007, Shen, 2012, Weisberg et al., 2011). Building upon the observation that the founder-investor relationship in the crowdfunding domain bares similarities to the seller-buyer relationship in the e-commerce domain, we hypothesize that the social presence perceived on a crowdfunding site will also have a positive impact on the development of the founder-investor relationship and hence influence the success of a crowdfunding initiative. To verify this assumption, we present the results of a study, in which we examined the role of social presence in crowdfunding initiatives. Taking the social presence theory as a new lens to analyze the success factors of crowdfunding projects, we particularly investigate the following research questions: *"How is social presence generated on crowdfunding project sites? How does social presence influence the success of crowdfunding initiatives?"*

To answer these research questions, we adopted a data-driven strategy and investigated the websites of 1.000 projects on Kickstarter, the largest CFP in the U.S., and the websites of 1.000 projects on Startnext, the largest CFP in Germany. Analyzing the projects of two large platforms, which slightly vary with respect to their architecture, size, and the provided features to document crowdsourcing initiatives, allowed us to triangulate the results and to strengthen the validity of our findings. As both platforms cover different regional segments of the crowdfunding market, this strategy also allowed us to analyze the results for cultural differences regarding the influence of social presence that might potentially be present. In so doing, we followed a call for a more comprehensive analysis of crowdfunding platforms in different regions of the world (Beier and Wagner, 2015). The results of our research contribute to gaining a better understanding of the mechanisms that affect the success of crowdfunding initiatives. By applying the established social presence theory in the crowdfunding domain, we provide a new perspective consisting of social factors as drivers of crowdfunding success, which hardly has been explored so far. Moreover, we show how established theories can be transferred to obtain new insights into the internet-based crowdfunding domain. By following a theory-driven instead of a phenomenon-based research approach, we contribute to further advancing the still nascent, yet emerging stream of research in this domain (McKenny et al., 2017, Short et al., 2017, Thies et al., 2016).

We proceed as follows: next, we discuss the background and related work. In section 3, we develop the research model and hypotheses. Our research approach is described in section 4. In section 5, we present the results of our study. We discuss the results and elaborate on the implications for academia and practice in section 6. In section 7, we summarize our work and give an outlook on future research activities.

2 Theoretical Background

In this section, we provide background information on the concept of crowdfunding, the social presence theory, and related work that focuses on the success of crowdfunding initiatives.

2.1 Concept of Crowdfunding

Beyond the traditional financial resources provided by banks, business angels, or venture capital firms, a new method of financing has become established in recent years that raises money online (Beier and Wagner, 2015). This form of acquiring capital is called *crowdfunding* and allows ventures and individuals to make a direct call via the internet to the public to raise money from the crowd for innovative and

new projects (Schwienbacher and Larralde, 2010). Crowdfunding emerged from the concept of crowdsourcing, which, in a broad sense, refers to the outsourcing of specific tasks to an undefined large group of people (Belleflamme et al., 2013, Thies et al., 2014). Extending the definition of crowdsourcing provided by Kleemann et al. (2008), Belleflamme et al. (2013, p. 8) describe crowdfunding as *"an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes"*. The crowd can be described as a large number of individuals who come together at a specific location. In the context of crowdfunding, these specific locations are the CFPs (Moritz and Block, 2014).

CFPs can significantly differ in their mode of operation (Beier and Wagner, 2015). Different types of crowdfunding models have been proposed based on what backers receive in exchange for their contribution (Belleflamme et al., 2015, Huhtamäki et al., 2015). For instance, backers can receive a product or service or other non-monetary rewards (i.e., reward- and donation-based crowdfunding), equity shares (i.e., equity-based crowdfunding), or a particular interest rate (i.e., lending-based crowdfunding) (Belleflamme et al., 2013). In this study, we focus on reward- and donation-based crowdfunding, as both are currently the most prevalent funding practices (Beier and Wagner, 2015, Mollick, 2014). Note that the literature on crowdfunding typically differentiates between reward- and donation-based crowdfunding since both types differ in the motives of the project initiators and supporters (Allison et al., 2015, Gerber et al., 2012, Song et al., 2015). However, and in line with Beier and Wagner (2015), we consider reward- and donation-based crowdfunding as one type of crowdfunding in this study because in practice most reward-based CFPs also cover donation-based exchanges.

Reward- and donation-based CFPs are quite similar to traditional e-commerce platforms. On these CFPs, project initiators intend to sell their project, product, or service to potential customers. Similar to an e-commerce website, the point of sale in this context is represented by the project site on the CFP. CFPs allow project initiators to add different types of content to their project sites, such as textual descriptions, pictures, or videos. Therefore, project initiators must optimize the presentation of their project sites so that visitors will be stimulated to invest into the project (Agrawal et al., 2011, Beier and Wagner, 2015). On CFPs, backers often pay many weeks or months before a product is planned to be produced and there is always a risk that an initiative fails and that the product will not be produced at all (Gerber and Hui, 2013). In the e-commerce domain, research has shown that the establishment of relationships between sellers and buyers can mitigate the buyers' risk perception and result in an increased buying behavior (Cyr et al., 2007, Pavlou and Fygenson, 2006). Consequently, research on crowdfunding assumes that the establishment of social connections between project founders and backers might also play an important role in the success of crowdfunding campaigns (Gerber et al., 2012). However, on CFPs, like on many other online platforms, establishing social connections between the different parties is difficult due to the physical, temporal, and social distance (Ba and Pavlou, 2002, Cyr et al., 2007).

2.2 Social Presence Theory

An important factor in the establishment of relationships in online environments is *social presence* (Cyr et al., 2009). The social presence theory was first proposed and described by Short et al. (1976, p. 65) as *"the degree of salience of the other person in a mediated interaction and the consequent salience of the interpersonal interaction"*. Salience refers to the relative significance of other individuals in the interaction (Kehrwald, 2008). The theory evolved through research on efficiency and satisfaction in the use of different telecommunication media (Short et al., 1976). The perceived social presence varies between different (telecommunication) media. For instance, talking face to face is considered to have the highest social presence while written communication is considered to have a low social presence as it conveys less social cues, such as facial expressions, gestures, or sounds (Fulk et al., 1987, Short et al., 1976). Consequently, social presence describes the feeling of being socially present with another person at a remote location and it classifies different communication media where the degree of social presence is linked to the degree of awareness of other individuals in a communication interaction. According to

Short et al. (1976), communication is most effective if the communication medium has the appropriate social presence required for the level of interpersonal involvement and for a given task.

In recent years, the social presence theory has received increased attention in the e-commerce literature as researchers recognized that e-commerce websites typically lack human warmth and sociability (Cyr et al., 2007, Gefen and Straub, 2003, Hassanein and Head, 2005). According to the results of these studies, social presence has been identified as an important factor that can positively influence various other important factors, such as trust, enjoyment, or perceived usefulness, and that can positively influence an individuals' purchasing intention. Social presence is provided by visible actions and fostered by the combination of messages that are sent and the way those messages are interpreted and answered by others. Examples of website elements and/or features that can promote social presence are socially rich texts and pictures (Cyr et al., 2007, Hassanein and Head, 2005), personal profile pages (Kear, 2010), and participation through posting and reading of community messages (Tonteri et al., 2011).

Following the existing social presence theory literature, there are two main strands of social presence: the *media richness view* and the *relational view* (Kehrwald, 2008). The media richness view focuses on social presence as a media attribute, which refers to the media's ability to convey social cues and approximate the characteristics of face-to-face interactions (Daft and Lengel, 1986, Short et al., 1976). The relational view focuses on the relational aspects of communication and refers to the individuals' ability to demonstrate a state of being available for interpersonal actions (McLeod et al., 1997, Murphy and Collins, 1997, Shin, 2002). When developing our research model, we follow these two perspectives.

2.3 Related Work

In recent years, researchers have begun to devote substantial attention to different aspects of crowdfunding, such as the underlying economics of crowdfunding (e.g., Agrawal et al., 2014, Belleflamme et al., 2015), models to predict the outcome of crowdfunding campaigns (e.g., Greenberg et al., 2013, Mitra and Gilbert, 2014), or the dynamics of crowdfunding campaigns (e.g., Kuppuswamy and Bayus, 2013, Mollick, 2014). Recent studies have also focused on the factors that lead to the success of crowdfunding projects (e.g., Ahlers et al., 2015, Beier and Wagner, 2015, Koch and Siering, 2015, Vismara, 2016, Wang et al., 2015, Xiao et al., 2014). According to the results of these studies, various project- and founder-specific success factors have been identified. Referring to the project-specific factors, researchers found that certain attributes related to the project site could influence the success of a crowdfunding campaign. For instance, Koch and Siering (2015) show that including a video, pictures, and a well-formulated project description can increase the funding success. In a similar way, Mollick (2014) demonstrates how spelling errors in the project description and the inclusion of a video can influence the success of crowdfunding campaigns. Moreover, Mitra and Gilbert (2014) demonstrate that the success of a crowdfunding campaign can be fostered through certain phrases used in the project description. In addition to the project presentation, studies also report that the success of a crowdfunding campaign is related to the founders and how they participate in the CFP. Referring to the founder-specific factors, Zvilichovsky et al. (2015), for instance, confirm that the founder's project experience and the founder's personal backing behavior can play an important role in the success of crowdfunding projects. CFPs typically also provide the ability to exchange additional information with the community, for instance, through the use of updates or comments. In this context, Xu et al. (2014) analyzed how founders keep potential backers aware of a campaign's progress through updates and what kind of updates they post during the campaign. According to their results, crowdfunding campaigns with project updates have a significantly higher success rate than campaigns without project updates. In addition, Thies et al. (2014) show that the founders' participation in social media can also foster the crowdfunding success.

Regarding the social presence theory, research in the e-commerce domain has shown that social presence is an important factor in establishing social connections and facilitating online transactions. Thus, social presence might also be a vital driver of the success of crowdfunding initiatives. However, current research on crowdfunding does not provide an answer regarding the role that social presence plays in the success of crowdfunding campaigns. With respect to the media richness view of social presence, we

identified a few studies that have focused on certain attributes related to the project site, such as the project description or the number of pictures on a project site (Koch and Siering, 2015, Mitra and Gilbert, 2014, Mollick, 2014). However, the social cues embedded in these elements have not been investigated so far. For instance, it is not clear if a more emotional product description might lead to a higher success rate than an unemotional description. It is also not clear if project pictures containing humans might lead to a higher success rate than pictures without humans. With respect to the relational view of social presence, it is unclear how the founders' participation on the CFP can foster the crowdfunding success. By drawing on the social presence theory, we therefore analyze the effects of social cues that are embedded in different project- and founder-specific features on CFPs in order to derive a better understanding of crowdfunding success.

3 Research Model and Hypotheses Development

In this study, the social presence theory is used as theoretical lens to investigate the success of crowdfunding initiatives. Figure 1 depicts our research model. Following the social presence theory literature, we differentiate between a media richness view and a relational view (cf. section 2). In our context, the media richness view represents the extent to which the project site of a crowdfunding campaign provides a socially rich presentation, for instance, through the use of a socially rich project presentation or a socially rich founder profile. The relational view focuses on the founder's participation behavior on the CFP. In the following sections, we explain the constructs and hypotheses of our research model in detail.

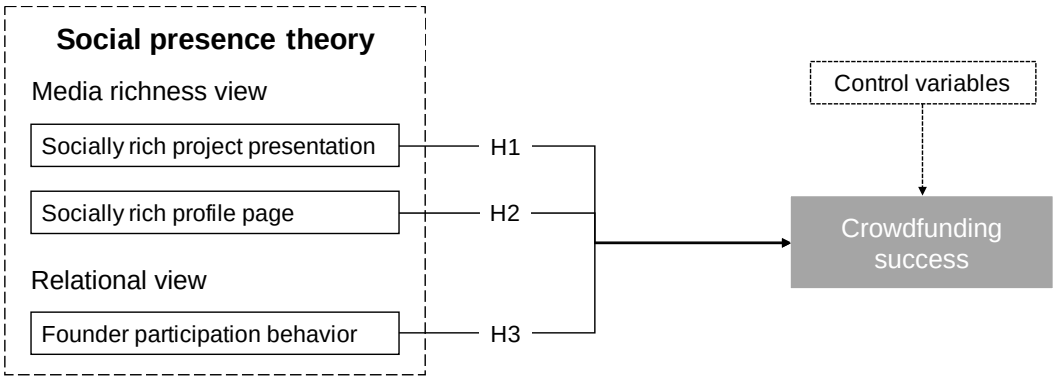

Figure 1. Research model to investigate the effects of social presence on crowdfunding success

3.1 Media Richness View

In the e-commerce context, online sellers face the problem of making their products or services appear attractive to potential costumers (Kim, 2002). Given their impersonal, anonymous, and automated characteristics, e-commerce platforms are often considered to lack emotional and social appeal (Chen et al., 2005). On e-commerce platforms, the social proximity and face-to-face interaction between salespeople and consumers is replaced by a complex socio-technical system, which is often not well understood by consumers and thus can hamper the consumers' purchasing behavior (Cyr et al., 2007, Gefen and Straub, 2003). On reward- and donation-based CFPs, project sites represent the point of sale between founders and potential backers. Therefore, founders encounter similar challenges as on traditional e-commerce platforms to make their crowdfunding projects appear attractive to potential backers. An increased sense of social presence can be achieved by stimulating the imagination of interaction with other individuals. On e-commerce platforms, social presence can, for instance, be generated by the use of socially rich text, human pictures, human videos, or human audio (Cyr et al., 2007, Hassanein and Head, 2005, Kumar and Benbasat, 2002, Lombard and Ditton, 1997). Social presence is closely related to information richness (Straub, 1994) and a critical construct in the media richness theory (Daft and Lengel, 1986). Therefore, factors derived from the media richness theory, such as a medium's ability to handle multiple information cues simultaneously or its ability to facilitate rapid feedback (Daft and Lengel, 1986), can be applied to the social presence theory. As described in section 2, social presence can be characterized

as an attribute of a medium that defines its capacity to transmit information about verbal and non-verbal social cues, such as facial expressions, vocal tones, gestures, or body language (Short et al., 1976). In general, the application of specific content formats, such as text, pictures, or videos, enhances the quality of communication depending on the content's media richness (Beier and Wagner, 2015, Koch and Siering, 2015). On reward- and donation-based CFPs, such as Kickstarter or Startnext, the project site typically consists of a project description and optionally one or more pictures and videos (Koch and Siering, 2015). This content is created by the founders of the crowdfunding project. Research on e-commerce has shown that presenting a product on an e-commerce platform with an emotive product description and with pictures of humans who interact with the products results in higher perceptions of social presence and positively influences the consumers' purchasing intention as well as the loyalty (Cyr et al., 2007, Gefen and Straub, 2003, Hassanein and Head, 2005). Following the social presence theory and findings in the e-commerce literature, we expect that a socially rich project presentation through an emotive project description and through human pictures increases the likelihood that backers will donate for the project. Therefore, we hypothesize:

H1a: Providing social presence through emotive words in the project presentation has a positive impact on the crowdfunding success.

H1b: Providing social presence through human pictures in the project presentation has a positive impact on the crowdfunding success.

To participate in crowdfunding initiatives, many reward- and donation-based CFPs, such as Kickstarter or Startnext, require users to register and to create a personal profile page (Wang et al., 2015). The profile page typically displays the user's account name, the date the account was created, and a list of projects that the user has backed or founded. Moreover, users can add additional information to their profile pages, such as a profile description or a picture. The profile page of a user can be accessed by other users whenever the account name appears on the CFP, for instance, when a user posts comments on a project site. Allowing users to present themselves through profile pages also is a common feature of online communities and social networking platforms. In this domain, recent research has shown that individuals are more likely to participate in an online community if a personalized profile is presented and if the profile has a socially rich description and a picture (Arnold and Paulus, 2010, Ellison et al., 2007, Kear, 2010). In online communities, profile pages enable people to connect with each other and can help to create trusting relationships (Kim, 2000). A profile page can signal that the individual is available and willing to engage and connect with other members in the community, which corresponds to the relational view of social presence (Kehrwald, 2008, Nicol et al., 2003). According to the social presence theory, a website that provides personal information can generate a higher personalized feeling and convey a greater sense of human warmth and sociability (Kear, 2010). By providing personal information, a potential backer can get a better picture of the founder or the founding team members. Therefore, we assume that a socially rich profile page of the founder increases the likelihood that backers will donate for the project. Similar to the project presentation, we focus on the social information embedded in the description and the pictures of the founder's profile page. Specifically, we hypothesize:

H2a: Providing social presence through emotive words on the founder's profile page has a positive impact on the crowdfunding success.

H2b: Providing social presence through human pictures on the founder's profile page has a positive impact on the crowdfunding success.

3.2 Relational View

Research on online communities has shown that the perception of others, which refers to the extent how other individuals appear to exist and how they behave in the community, has a positive trust building effect (Shen and Khalifa, 2009). Trust can be developed if an individual behavior conforms to the expectations of others and decreases if the individual behaves in another, unexpected way (McKnight and Chervany, 2001). Interaction and participation in an online community can enhance the social presence and can lead to greater product sales (Kumar and Benbasat, 2006). Cyr et al. (2007) also found that, in

an e-commerce context, visible interactions of other individuals could positively influence the consumers' perception of social presence and establish trust between the seller and the buyer. On e-commerce platforms, interaction can be achieved through online word-of-mouth systems, such as rating and review systems or product commenting systems (Amblee and Bui, 2011). Consumers can, for instance, use such systems to exchange product-related information or to share their shopping experience. The content generated by these systems is a vital trust-building factor and supports the intention to shop online (Hassanein and Head, 2007, Pavlou and Dimoka, 2006).

Today, many CFPs provide features that enable founders and backers to interact and participate with each other (Beaulieu et al., 2015). On CFPs such as Kickstarter and Startnext, potential backers can ask questions in the form of comments and founders can reply to these comments. If potential backers ask questions in the comment section, they usually expect to get a timely answer from the founder (Antonenko et al., 2014, Kraus et al., 2016). Thus, backers can vet the founder's commitment to the project based on the reply speed and the content. Frequent and dedicated replies indicate efforts by the creator to reach out to current and potential backers (Wang et al., 2015). It is a way for the founders to stay in a vibrant exchange with potential backers. Prior research indicates that passionate creators show strong and positive emotions toward their projects and are excited to mobilize resources to turn their ideas into reality (Chen, Yao and Kotha, 2009). Based on the frequency of the founder's reply to comments, we assume that potential backers will perceive that the founder of a project is available and willing to engage and connect with the backers, which corresponds to the relational view of social presence. If founders participate in the community through their replies, potential backers might be influenced towards a positive funding decision. The feeling of the social presence of the founder can lead to a higher level of trust convincing them to invest into the project. Therefore, we hypothesize:

H3a: Providing social presence through a high number of responses in the comment section has a positive impact on the crowdfunding success.

For the founder, another way to actively participate in the crowdfunding community is to back other projects. Tonteri et al. (2011) found that the sense of a virtual community could be achieved through active and passive participation. An individual that actively participates in the community expects social and personal benefits. Many founders use the CFP not only for their own purpose (i.e., to get projects funded) but also to invest into projects of other founders, thus supporting the community (Zheng et al., 2014). Through the lens of the social presence theory, this backing interaction might support the founder to develop a greater intimacy with the crowdfunding community (Li and Wang, 2013) and thus strengthen the relationship between the founder and potential backers. Therefore, we hypothesize:

H3b: Providing social presence through the backing of other projects has a positive impact on the crowdfunding success.

4 Research Methodology

To answer our research questions, we followed a data-driven research strategy, which is considered as an appropriate method to verify theory-oriented approaches in the crowdfunding context (Huhtamäki et al., 2015, Koch and Siering, 2015). Data for this study was obtained from the leading U.S. CFP Kickstarter and the leading CFP in Germany, Startnext. These platforms are specialized on reward- and donation-based crowdfunding and follow the "all-or-nothing" business model, in which a minimum pledge goal must be reached within a limited timeframe. Only if the founders manage to collect the necessary amount of money, the sum will be transferred. Otherwise, the project will be cancelled (Li et al., 2016). To gather data from Startnext and Kickstarter, we implemented a web crawler and scraper in R based on the best practices provided by Huhtamäki et al. (2015). To identify the number of emotive words in a text segment, the NRC Word-Emotion Association Lexicon developed by Mohammad and Turney (2013) was employed for the sentiment analysis. Each word in this multilingual dictionary is tagged with zero or more emotions, which can be anger, anticipation, disgust, fear, joy, sadness, surprise, and trust. If a word is tagged with at least one emotion, we count it as an emotive word. To identify humans on pictures, we utilize the closed-source Microsoft Cognition Services, respectively the Face API

(Microsoft, 2017). This API is capable of detecting one or more human faces displayed on an image and can extract face attribute features. If at least one human face is detected, we classify the picture as socially rich.

We collected data from 1.000 projects on Startnext and from 1.000 projects on Kickstarter. Before analyzing the gathered data, we applied data cleansing methods on the sample. First, we removed all projects from the data set that were cancelled or suspended. Second, we identified and removed projects that were outliers, i.e. projects having a duration shorter than ten days or projects with descriptions of less than 100 words. Third, we removed so-called blockbuster projects, i.e. projects reaching more than 1000% of their pledge goal (Wang, 2015) and projects with extraordinarily high pledge goals of more than 100.000 Euro / USD. In so doing, we ended up with 830 projects from Startnext and 780 from Kickstarter. In particular, we collected data for the following variables, which are depicted in Table 1.

The media richness view is represented by the degree to which a project presentation as well as a founders' profile page is socially rich. In order to measure if a project presentation is socially rich, we assessed the number of emotive words that are used to describe the project (*social richness of project description*) as well as the number of pictures accompanying the project description that contain humans (*social richness of project pictures*). Comparably, we assessed if a founder's profile page is socially rich by measuring the number of emotive words the founder used to describe him/herself (*social richness of profile page*) and the number of pictures containing a personalized picture of the founder (*social richness of profile pictures*). While the used software is not able to recognize specific faces, we assume that a socially rich picture in the founder's profile depicts an image of the founder himself/herself and/or his/her social environment, thus providing social cues about the founder. The relational view is represented by the participation behavior of the founder. It was measured by determining the *number of answered comments* and the *number of previously backed projects*. As dependent variable, we assessed if a project successfully reached its pledge goal, which is the most common measure of crowdfunding success in entrepreneurship- and finance-oriented studies (Mollick, 2014). We used a dummy variable *successful*, which takes the value one if the project has been successfully funded and zero otherwise.

Factor	Variable	Description
Socially rich project presentation	Social richness of project description	No. of emotive words in the project description.
	Social richness of project pictures	No. of pictures with humans on the project page.
Socially rich profile page	Social richness of profile page	No. of emotive words in the profile description.
	Social richness of profile pictures	No. of personal pictures in the founder's profile.
Founder participation behavior	No. answered comments	No. of answered comments by the founders.
	No. previously backed projects	No. of previously backed projects.
Control variables	Goal	Pledge goal to successfully fund the project.
	Duration	No. of days a project accepts funds.
	No. words in project description	No. of words in the project description.
	No. pictures in project description	No. of pictures on the project page.
	No. words in profile description	No. of words in the profile description.
	No. founders	No. of founders for the project.
	No. comments	No. of comments on the project page.
Dependent variable	Successful	Whether the project reached the pledge goal.

Table 1. Variable descriptions

The research model incorporates additional control variables known to affect the crowdfunding success (Koch and Siering, 2015, Mollick, 2014). The pledge goal of crowdfunding projects has a critical influence on the decision of potential investors (Kuppuswamy and Bayus, 2013). The higher the amount

requested by the founder, the lower the overall funding probability becomes (Mollick, 2014). Accordingly, we control the pledge goal. Furthermore, we control the duration of a project because the period of the project is negatively related to the success, indicating that a longer duration is correlated to a lower possibility to reach the goal, being a sign of lack of confidence (Mollick, 2014). Crowdfunding projects are evaluated from the outside with respect to the number and skills of the founding members (Franke et al., 2008). Therefore, we also control the number of founding members and the number of words in the founder's profile text. In addition to analyzing the social richness of project presentation and founder profile, we control variables derived from the media richness theory by Daft and Lengel (1986): Project founders can increase the success on a CFP by using an appropriate project description, especially with information provided in form of text and pictures (Koch and Siering, 2015). Therefore, we also control the total number of words in the project description and total the number of pictures presented on the project page. A crowdfunding campaign can have hundreds of comments representing communication activities between founders and backers (Xiao et al., 2014). Potential backers can vet a project through comments and this vetting process may establish trust (Beaulieu et al., 2015). Therefore, we control the total number of comments in addition to the number of answered comments answered by the founders. We first standardized all independent variables before analyzing the data with a binary logistic regression, since we have a binary dependent variable to measure the crowdfunding success.

5 Results

The descriptive statistics reveal certain differences between the data sets of the two analyzed platforms. In the data set obtained from the German Startnext platform, 47.9% (398) of the projects successfully raised the targeted amount of money, compared to 26.0% (203) of the projects contained in the data set gathered from Kickstarter. While the success rate for the data obtained from Startnext is very close to the officially reported numbers (Startnext, 2017), the success rate for the data gathered from Kickstarter data set is somewhat lower than official numbers (Kickstarter, 2017). With 1.000 projects gathered from Kickstarter, our data set represents the typical distribution of project categories on this platform quite well overall. Yet, the data includes slightly more projects from the technology and journalism categories, which tend to have lower success rates. Accordingly, the total success rate is slightly lower in our data.

Next to that, differences between the two analyzed platforms occur with respect to the analyzed variables. The variable social richness of project pictures has an average of 2.75 on Startnext and 0.96 on Kickstarter. Analyzing the number of emotive words included in the project description, Startnext has a variable range from 0 to 220 with a mean value of 44, whereas the values on Kickstarter range from 0 to 565 with a mean value of 62.4. Concerning the social richness of profile pictures, 73% of the founders on Startnext have a personal picture, compared to 46% on Kickstarter. Just like the social richness of project descriptions, the amount of emotive words on a founders' profile page is larger on the U.S. platform Kickstarter with a mean value of 13.6 compared to 5.54 on Startnext. Analyzing the founders' participation behavior, we again found differences between both platforms. On Startnext, the founders formulated 1.23 comments on average per project compared to 2.58 on Kickstarter. Finally, the average number of projects backed by the founders was 1.4 on Startnext and 3.5 on Kickstarter.

The data from both platforms moreover contains some correlated variables. As for the independent variables, the number of emotive words in the project description and the overall number of words in the project description, the number of emotive words in the founders' profile description and the overall number of words in the founders' profile description as well as the number of answered comments and the number of overall comments are mutually dependent. All other correlations between the explanatory variables are less than 0.4. The variance inflation factor for all variables in both models was less than 5 indicating that there is no serious problem of multicollinearity in our data set (Wooldridge, 2013).

Table 2 shows the results of the conducted regression analyses and reveals that several control variables significantly influence the success of crowdfunding projects. On both CFPs, projects with a higher number of comments have a significantly higher success rate. The intended pledge goal is significantly negatively related to the overall success of crowdfunding projects on both CFPs. For Startnext, the total

number of words significantly negatively influences the project success. Finally, the total number of pictures and the duration have a negative influence on the success of projects on Kickstarter.

		Coefficients	
	Variables	Startnext	Kickstarter
	Goal	-2.11 ***	-1.32 ***
	Duration	-0.06	-0.55 **
	No. words in project description	-0.70 **	-0.02
	No. pictures in project description	-0.10	-0.30 *
	No. words in profile description	-0.18	0.41
	No. founders	0.08	0.00
	No. comments	7.54 ***	2.49 ***
H1a	Social richness of project description	0.82 ***	0.69 ***
H1b	Social richness of project pictures	0.40 ***	0.38 *
H2a	Social richness of profile description	0.08	0.23 *
H2b	Social richness of profile pictures	0.03	0.13
H3a	No. answered comments	-1.40 *	-0.72 [a]
H3b	No. previously backed projects	1.78 ***	0.19 *
	Observations	830	780
	McFaddens pseudo R2	0.240	0.302
	Nagelkerke R2	0.377	0.430
	Significance	0.000	0.000
	Variance Inflations Factor Mean / Max	2.465 / 3.651	2.206 / 4.452

Legend: [a]p<0.1; *p<0.05; **p<0.01; ***p<0.001; *Dep. variable*: Successful (project reached the goal)

Table 2. Regression results

Regarding our assumptions with respect to a socially rich project presentation, the results overall support our propositions for hypotheses H1a and H1b. As regards the use of emotive words in the project description, we found that this factor is positively related to the crowdfunding success on both CFPs, confirming hypothesis H1a. The regression results further reveal a significant and positive impact of the social richness of project pictures on the success of projects, confirming hypothesis H1b. As regards the effect of a socially rich profile page, the results are somewhat mixed. We detected that the amount of emotive words used on the founders' profile pages had no significant impact on the success of projects on Startnext. However, with respect to Kickstarter, a significantly positive influence was identified. We accordingly cannot fully confirm hypothesis H2a. With respect to H2b, we could not identify a significant effect coming from the social richness of founder profile pictures on either CFP. The results for H3a were surprising and contradictious to the theoretical expectations. The amount of comments answered by the founders has a significantly negative influence on the success of projects on both platforms. However, we found support for hypothesis H3b. The amount of projects previously backed by the founders significantly positively influences the success of their own projects on both CFPs.

The model fitness of logistic regressions is calculated based on deviance to the null-model. To assess the model fitness, we apply the McFadden (1973) and Nagelkerke (1991) R2 statistics to analyze the goodness of the chosen model. Values between 0.2 and 0.4 represent an excellent fitness (McFadden, 1978). Our regression models show good fitness values with R2 = 0.240 for Startnext and R2 = 0.302 for Kickstarter. Nagelkerke's (1991) R2 is an additional measure and is standardized to be between zero and one. An R2 of 0.377 for Startnext and 0.430 for Kickstarter further indicates a good model fitness.

6 Discussion

Above all, the results of our study indicate that a *socially rich project presentation* has a significant impact on the success of a crowdfunding project. Overall, the obtained results correspond to findings of related studies, which have examined the impact of social presence on the buying intention of consumers in e-commerce scenarios (Gefen and Straub, 2003, Lu et al., 2016). It seems that conveying social cues contributes to the successful building of a founder-investor relationship in the crowdfunding domain in a similar fashion.

In line with thematically related studies in the e-commerce domain (Cyr et al., 2007, Hassanein and Head, 2005), we could show that socially rich *project descriptions* positively affect the success of crowdfunding initiatives (H1a). In particular, a more intensive transportation of social cues and emotions through emotive words in the project description seems to foster the success of crowdfunding campaigns. We could observe a consistently strong effect in this respect both on the U.S. platform Kickstarter and the Startnext platform, which focuses on the German crowdfunding market. These results lend support to our hypothesis that a socially rich, emotional text in the project description has a positive influence on the success of a crowdfunding project. Previous studies suggest that the length of a project description has a positive impact on the success of crowdfunding initiatives, too (Koch and Siering, 2015, Xiao et al., 2014). The results of our study indicate that the content of a project description rather influences the success of a crowdfunding project than its length. After adding the number of emotive words contained in a project description as a variable into our model, the length of the project description suddenly showed a significantly negative impact on the project success on the Startnext platform. We accordingly decided to conduct a post-hoc analysis to identify reasons for this phenomenon. Based on the distribution of data and assuming an inverted U-shape, we decided to add the square value of the length of a project description to our model. Regarding the Kickstarter platform, the length of a project description had a significantly positive effect and its square value had a significantly negative impact. With respect to the Startnext platform, the length had almost no effect and the square value had a slightly negative but insignificant effect. The results of our post-hoc analysis indicate that the length of a project description might not have a linear positive effect on the success of crowdfunding projects. Instead, the length of a project description seems to have a positive effect until a certain point is reached. Beyond that point, the effect apparently becomes negative, indicating that abundant information might cause cognitive overload or that a preference for concisely formulated project descriptions might exist among potential investors.

According to the results of our study, providing social presence through socially rich, human *pictures* as part of the project presentation also appears to be positively associated with the success of crowdfunding projects (H1b). Likewise, this factor turned out to be a significant determinant for the project success on both platforms, although the results obtained from the Kickstarter platform were less significant compared to the results obtained from Startnext. Our observation basically conforms to findings from thematically related studies in the e-commerce domain, which suggest that socially rich pictures have a positive effect on the user's buying behavior (Cyr et al., 2009, Hassanein and Head, 2007). Obviously, socially rich pictures have a positive influence on the project success in the crowdfunding domain as well. Compared to the current state of research, the results of our study furthermore help explaining the effect of pictures on the success of crowdfunding projects in more detail. Previous studies so far have only examined whether the sheer number of pictures has an impact on the success of crowdfunding initiatives and reported somewhat inconsistent results (Beier and Wagner, 2015, Koch and Siering, 2015). Our results suggest that not only the number but also – or even rather – the content of pictures matters for the success of crowdfunding projects.

In contrast to a socially rich project presentation, the results of our study suggest that a socially rich founder profile page rather has a limited effect on the success of crowdfunding projects. Regarding the founder's profile page, the results indicate that providing social presence through emotive words might positively affect the success of crowdfunding initiatives (H2a). These results basically corroborate find-

ings from studies in related domains, which have shown that denoting reputational aspects such as educational degrees can positively affect the success of fundraising initiatives (Ahlers et al., 2015). However, we only found support for our hypothesis on the Kickstarter platform. On the Startnext platform, no significant effect on the project success was observed. Possible explanations might be cultural differences or the different sizes of the platform, in which the reputation of the founder might have a varying importance. Given the fact that the significance of the effect observed on the Kickstarter platform was not very strong either, however, we tend to conclude that a socially rich text on the founder's profile page rather has a limited influence on the project success in general. In line with this interpretation, we found the social presence generated by including human pictures into the founder's profile page to be non-significant for the project success on both platforms (H2b). It seems that a socially rich presentation of the founder is not as important for the success of a crowdfunding project as a socially rich description of the project itself. This might be explained with the innovative character and the usually still rather small financial goal of crowdfunding projects, in which the project characteristics are more important than those of the founder(s). However, we will have to further investigate this observation – for instance by comparing projects with a higher and lower financial goal – to substantiate our interpretation.

Unlike the social richness of the founder's profile, we found his/her *participation behavior* to be a significant determinant for the success of crowdfunding projects. On the one hand, the number of answered comments seems to have an impact on the project success. In contrast to our expectations (H3a), however, we observed a negative influence on the project success both on the Kickstarter and the Startnext platform. In line with the results of other studies, our results seem to confirm that the investors are influenced by the number of comments answered by the founder (Wang et al., 2015). Currently, we can only speculate about the causes for the observed negative influence, though. One explanation might be that a high number of responses is especially required if a project comes under criticism and its success is at stake. On the other hand, the number of projects that the founder has backed before was found to positively influence the success of his/her own project (H3b). The effect was observed on both platforms, albeit it was less significant on Kickstarter than on the Startnext platform. Consistently with the findings of other studies, we can conclude that a founder who actively participates in the crowdfunding community has an increased chance to successfully place his/her own project (Tonteri et al., 2011). Apparently, the engagement in other projects triggers a sensation of reciprocity (Coleman, 1988).

6.1 Implications

The results of our research have implications for academia and practice alike. As regards academia, the results of our study contribute to the building of theories to explain the success of crowdfunding campaigns. We extend the current body of knowledge in crowdfunding research by providing a new perspective that investigates the success of crowdfunding projects through the lens of the *Social Presence Theory* and its two strands, the media richness and the relational view. In particular, we demonstrate that both views contribute to explaining the success of crowdfunding projects. Whereas previous studies in the crowdfunding domain have merely shown that the number of words and the number of pictures can have an effect on the success of crowdfunding initiatives (Koch and Siering, 2015, Xiao et al., 2014), the results presented in this paper show how the media content influences the project success. It hence complements existing findings with a content-oriented point of view. In addition, we show that the participation behavior of the founder has a significant impact on the success of his/her crowdfunding project. While the results of our study corroborate earlier findings in this respect (Wang et al., 2015, Xiao et al., 2014), we provide a well-established theoretical lens through which the observed phenomena can be explained. In this respect, the findings of our research furthermore indicate that established theories from related domains such as the e-commerce can successfully be transferred to explain the success of crowdfunding initiatives. Lastly, we have provided indications that the effects and their strength can vary depending on the platform, its size and/or the regional context. It therefore appears to be necessary to analyze the mechanisms of crowdfunding on different platforms and in different cultural contexts. While several studies only examine data from the Kickstarter platform, we have deliberately included a second platform into our investigation to triangulate the results and to identify potential differences.

As regards practice, the results of our research inform founders of crowdfunding initiatives about mechanisms to generate social presence in order to increase the chances for success. In particular, founders should consider providing socially rich text and pictures to describe their projects as this apparently contributes to the success of crowdfunding initiatives. Literature suggests that providing socially rich media is easier, if the project idea or product itself evokes emotion and a socially rich media design induces positive feelings in addition to simply providing information (Hassanein and Head, 2005). It is, however, also possible to provide socially rich project presentations for products that are not easy to understand. Apart from reevaluating the presentation of their crowdfunding projects, potential founders should also consider becoming active members of their crowdfunding communities and backing other projects as this obviously can generate a sensation of reciprocity.

6.2 Limitations

There exist several limitations, in the light of which the presented results ought to be interpreted. First, even though we collected data from two different CFPs, the generalizability of the results is still limited because both platforms implement a reward- and donation-based approach. To strengthen the generalizability of the results, platforms that implement lending- and equity-based crowdfunding approaches should be analyzed as well. Moreover, the sample size is still somewhat limited although we analyzed data from 2.000 crowdfunding projects. In particular, we did not yet analyze if the importance of social presence varies in different categories of crowdfunding projects. As there is a considerable variety of projects, the number of projects in each category would have been somewhat low despite the overall large sample size. Finally, yet importantly, we so far only measured the number of answered comments to characterize the participation behavior. Comparable to the approach of other studies in the crowdfunding domain (Beaulieu et al., 2015, Wang et al., 2015), we did not inspect their content. In addition, we were not yet able to analyze the emotions of the humans depicted on socially rich pictures. Such aspects had to be left for future research iterations, in which our results have to be further substantiated.

7 Conclusion

So far, little research has investigated the influence of social factors on the success of crowdfunding initiatives. To contribute to the closure of this literature gap, we presented the results of a study, in which we examined the influence of social presence on the success of crowdfunding projects on the CFPs Kickstarter and Startnext. The results of our study do not only confirm that the application of theories from the e-commerce domain can indeed provide new insights into the factors that determine the success of crowdfunding campaigns. They also provide a first overview of social presence factors and the important role that they play for the success of crowdfunding initiatives. In particular, the results indicate that including socially rich text and pictures into the project presentation can facilitate the success of crowdfunding projects. Having supported other crowdfunding initiatives before is also likely to have a positive effect on the success of one's own crowdfunding campaign. In contrast, the number of comments answered by the founder seems to be negatively related to the success of crowdfunding projects. While we will have to investigate the causes for this finding further, we hypothesize that a high number of answers signals that the project might be unclear or under critique and therefore might eventually fail.

The results of our study furthermore show that the effects of some factors might vary depending on the platform, its size and/or the cultural context. Our results hence call for an investigation of success factors for crowdfunding projects on several platforms and/or in multiple cultural contexts. Future research could therefore also try to confirm our results by analyzing projects from other platforms and/or bigger samples. Moreover, the importance of social presence for different project types and the role of additional media, such as socially rich video or audio statements, ought to be investigated. Lastly, future research should investigate how social presence influences other perceived attributes of the founder-investor relationship such as trust or enjoyment, which are important in domains such as e-commerce (Cyr et al., 2009, Hassanein and Head, 2005). With the study presented in the manuscript at hand, we intend to provide a starting point for such endeavors.

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