

## Association for Information Systems AIS Electronic Library (AISeL)

---

PACIS 2016 Proceedings

Pacific Asia Conference on Information Systems  
(PACIS)

---

Summer 6-27-2016

# THE ROLE OF QUALITATIVE SUCCESS FACTORS IN THE ANALYSIS OF CROWDFUNDING SUCCESS: EVIDENCE FROM KICKSTARTER

Jascha-Alexander Koch

Goethe University Frankfurt, [jaskoch@wiwi.uni-frankfurt.de](mailto:jaskoch@wiwi.uni-frankfurt.de)

Qian Cheng

Goethe University Frankfurt, [qiancheng@gmx.de](mailto:qiancheng@gmx.de)

Follow this and additional works at: <http://aisel.aisnet.org/pacis2016>

---

### Recommended Citation

Koch, Jascha-Alexander and Cheng, Qian, "THE ROLE OF QUALITATIVE SUCCESS FACTORS IN THE ANALYSIS OF CROWDFUNDING SUCCESS: EVIDENCE FROM KICKSTARTER" (2016). *PACIS 2016 Proceedings*. 242.

<http://aisel.aisnet.org/pacis2016/242>

This material is brought to you by the Pacific Asia Conference on Information Systems (PACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in PACIS 2016 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# THE ROLE OF QUALITATIVE SUCCESS FACTORS IN THE ANALYSIS OF CROWDFUNDING SUCCESS: EVIDENCE FROM KICKSTARTER

Jascha-Alexander Koch, E-Finance Lab, Goethe University Frankfurt, Frankfurt am Main, Germany, jaskoch@wiwi.uni-frankfurt.de

Qian Cheng, E-Finance Lab, Goethe University Frankfurt, Frankfurt am Main, Germany, qiancheng@gmx.de

## Abstract

*In recent years, crowdfunding has become a valuable mean for initiators to raise funds for realizing projects and start-up ideas. These initiators are highly interested in the question of what factors contribute to successfully collecting a certain amount of funding in crowdfunding campaigns. For that reason, research has addressed this question by analyzing factors that influence funding success. However, research has concentrated on quantitative factors and has not yet tapped the full potential of qualitative factors when analyzing crowdfunding campaign success. The human decision making processes are not strictly based on objective figures but on qualitative aspects as well. Thus, we hold it to be substantial to take qualitative factors into consideration to gain deeper insights of crowdfunding success. Therefore, we propose a research model that combines quantitative as well as qualitative factors to show the relevance of incorporating qualitative aspects. Our evaluation gives evidence that the inclusion of qualitative factors unveils new details about funding success and allows to give more detailed advice to founders. While previous research on crowdfunding base primarily on the notion of founders' preparedness, our results allow to infer that also subjective perception of information, media, and founders has an important influence on funding success.*

*Keywords: Crowdfunding, Funding Success, Success Factors, Qualitative Success Factors, Preparedness, Passion, Subjective Perception.*

# 1 INTRODUCTION

In recent years, crowdfunding has become a wide-spread and effective alternative for initiators of projects and start-ups to raise the necessary funding (Belleflamme, Omrani, & Peitz 2015; Mollick 2014). In crowdfunding, capital-seekers present and describe their project ideas and ask the crowd, i.e., the Internet community, for financial support in order to be able to complete their projects. Funders receive a compensation (e.g., so-called rewards) in exchange for their funding contribution. For such crowdfunding campaigns, initiators can use crowdfunding platforms, like Kickstarter.com, that provide all services around creating the campaign, describing and presenting the project idea, and collecting the money as well as managing reward handling and distribution. According to their respective role, users of the crowdfunding platforms are either project initiators, also called project founders, or funders that back a project by their financial contribution (Gerber, Hui, & Kuo 2012). Of course, founders can also fund other projects and, thereby, become funders themselves. Every supporter that backs a project by funding usually gives a relatively small sum of money. However, when a large number of people support a project, an impressive sum of money can be collected.

While some projects finally reach their funding goal, others fail to successfully collect the targeted funding level (Mollick 2014). As a consequence, founders are highly interested in what factors increase funding success. For that reason, research has addressed this question by analyzing factors that influence funding success. However, when analyzing crowdfunding campaign success, research has concentrated on quantitative factors (e.g., An, Quercia, & Crowcroft 2014; Barbi & Bigelli 2015; Kuppuswamy & Bayus 2013; Mollick 2014; Pitschner & Pitschner-Finn 2014), like the funding goal, the funding period, and the number of pictures, as well as fully automatically computable or easy assessable qualitative factors, such as text sentiment (Greenberg, Pardo, Hariharan, & Gerber 2013) or the types of rewards offered to funders (Crosetto & Regner 2014). After the analysis of various publications, we conclude that qualitative factors receive no or only negligible attention – despite the fact that human decision making processes are not strictly based on objective figures but also on qualitative attributes or on subjective quantifications of qualitative attributes (Chen & Hwang 1992). In other economic contexts, qualitative factors have already been shown to be very effective in the analysis and prediction of success (Black, Burton, & Johnson 2009). Thus, we deem it important to take qualitative factors into consideration in order to gain deeper insights into crowdfunding success.

Quantitative data, e.g., the number of Facebook friends or the amount of money that is to be collected, is already available in concrete numbers – while qualitative data has to be converted or transformed into numbers in order to use them in econometric analyses or algorithms (Vaus 2002). Of course, individuals might assess such qualitative data differently (Chen & Hwang 1992), for example, due to different individual traits of character, different experiences, or for other reasons. However, it is no valid point to exclude qualitative factors based on the argument that these might be perceived differently from individuals (Black et al. 2009). In fact, also quantitative aspects are subject to individual perception and assessment but still have turned out to be perfectly suitable for explaining funding success (Mollick 2014). Nevertheless, up to now, research in the field of crowdfunding success has mostly avoided to include qualitative attributes – most probably because it requires time-expensive assessment. Researchers try to avoid the additional burden of manually assessing or transforming qualitative data. Another reason could be that authors try to prevent possible doubts on objectivity and criticism against their research when it comes to discussions about how qualitative data should be prepared for analyses. Most interestingly, we can often find the approach of using quantitative data in order to address qualitative aspects. For example, the inclusion of the text length as an approximation for the level of information contained in the project description. In fact, there is no chance to conclude from text length that certain information is included. This would need further analysis. Ultimately, a very long text can contain less information than a precise short text. In the end, by the exclusion of qualitative factors, research run into the risk of not exploiting the full potential of available factors that might contribute to a better explanation of crowdfunding success.

Therefore, in our paper, we propose a research model that combines quantitative and qualitative factors to address the question of whether qualitative factors have a rational and significant influence on crowdfunding success and, thus, play an important role for analyses. Up to now, all theoretical contributions in the field are based on quantitative aspects – while qualitative aspects have been neglected. By our analysis, we obtain several interesting findings. We are convinced that the inclusion of qualitative factors lead the way for enhancing the analysis of crowdfunding success.

This paper proceeds as follows. First, we present information and related literature on crowdfunding as well as discuss the theoretical background. Next, we propose a research model that combines quantitative and qualitative factors. After the description of our research methodology, we evaluate our research model and its performance. Finally, we conclude.

## 2 BACKGROUND AND RESEARCH MODEL

### 2.1 Crowdfunding and Its Success Factors

In crowdfunding, a relatively high number of contributors are backing a project or start-up by their financial support. A creator of a crowdfunding campaign can become anyone who wants to finance a project or a start-up and needs the respective funding for it. Online crowdfunding platforms bring together both project founders and potential funders. On these platforms, project founders create a project webpage for the provision of project-related information through different media, i.e., written text, pictures, and videos. Additionally, project founders have the possibility to communicate with their potential project funders, e.g., by comments. In this online context, where funding decision making is massively affected by information asymmetry (Belleflamme, Lambert, & Schwienbacher 2014), campaign founders aim at convincing funders that their project is worth being backed by funding.

Usually, four models of crowdfunding are distinguished according to what type of compensation the funders receive for their funding (Rossi 2014): In donation-based crowdfunding, funders do not receive any compensation for their funding. On platforms that apply a reward-based model, funders receive non-financial, either material or immaterial, rewards (e.g., a book, CDs, a studio visit, etc.). Moreover, there are two models with financial rewards: in lending-based crowdfunding, funders receive interest payments (besides the repayment of the principal), and, in equity-based crowdfunding, funders receive a share of equity and participate in future profits generated by the respective company.

Among other parameters, project initiators determine a funding goal and a funding period when starting a campaign. In the *keep-it-all* type of crowdfunding, the founders can keep the collected money no matter if the funding goal has been reached within the funding period or not. Contrary, if the *all-or-nothing* type is applied, the collected funding is forwarded to the initiators only if the goal has been reached within the funding period. In order to reach this funding goal, campaign initiators are highly interested in what factors contribute to funding success. Therefore, research has analyzed and identified several factors that are linked to funding success. So far, several interesting research contributions have been made that help to understand supporters' funding behavior and funding success:

Research has confirmed that higher funding goals are generally more difficult to reach (Koch & Siering 2015; Mollick 2014). Even the length of the funding period has a negative influence on funding success (Mollick 2014). Mollick (2014) explains that a longer funding period implies that the campaign initiators are less confident that their project has the quality to reach the funding goal in time. Research argues that a problem of information asymmetry exists in the field of online crowdfunding (Agrawal, Catalini, & Goldfarb 2015; Ahlers, Cumming, Günther, & Schweizer 2015; Belleflamme et al. 2014). Potential funders know less about the actual project quality compared to the project founders. This information asymmetry is optimally overcome by provision of appropriate information on the crowdfunding campaign page. Research has shown that the provision of information is substantially important for funding success. It has been pointed out that, for example, more textual information

(Barbi & Bigelli 2015; Koch & Siering 2015; Pitschner & Pitschner-Finn 2014) has a positive influence on funding success. The same holds true for the provision of media, i.e., pictures (Koch & Siering 2015) and videos (Koch & Siering 2015; Mollick 2014). Moreover, communication is an important factor in crowdfunding. Updating and active communication support funding success (An et al. 2014; Koch & Siering 2015; Kuppuswamy & Bayus 2013). Agrawal et al. (2015) argue that family members and friends of the respective project founders have additional information on project founders and the projects. For these closely related persons, especially social ties drive funding decisions. Thus, family members and friends of the respective project founders tend to fund earlier while other funders tend to fund later (Agrawal et al. 2015) because these are more responsive to information on the amount of funding that has already been funded. Furthermore, the size of the social network of the project founder is important (Mollick 2014). The more friends are displayed on the project page, the more likely is funding success. A low number of friends should better not be displayed as low numbers of friends have a negative influence on funding success (Mollick 2014). And, finally, campaigns of project founders who have already successfully funded campaigns in their platform history are more likely to be successfully funded than founders without previous success (Zvilichovsky, Inbar, & Barzilay 2014). Mollick (2014) links many of these aspects to the notion of *preparedness*. The more prepared founders are perceived, the more funders will support the campaign.

Factors considered so far are either binary (e.g., provision of a title video), real (e.g., funding goal), or floating-point numbers (e.g., funding-to-goal ratio). Usually, these are either already given (e.g., number of friends) on the project page or can easily be calculated or assessed (e.g., text length). All research results shown above are based on quantitative factors. However, we find very rare examples in existing research for the inclusion of qualitative factors. A first example is text sentiment (Greenberg et al. 2013). But even this aspect can be assessed automatically by algorithms and, thus, needs no manual assessment. Further, the content of updates (Xu et al. 2014) and the types of rewards (Crosetto & Regner 2014) have been considered in research. Here, manual assessment is actually necessary for classification. But even for these aspects, natural scales are given: the number of reward types, share of a certain reward type among all rewards offered, number of update types, and the time of posting an update. We did not find any research in the area of crowdfunding success where scales are developed in order to operationalize qualitative aspects. Here, research has not yet dared to step deeper into qualitative factors, i.e., by assessing factors manually, applying appropriate scales, and evaluating their influence on funding success – although research in other context has already shown that operationalized qualitative factors are effective and informative when analyzing or forecasting success (Black et al. 2009). Our paper makes this step towards an inclusion of qualitative success factors of online crowdfunding campaigns to show that including and analyzing such factors bears potential and generates new knowledge about funders' backing behavior and projects' funding success.

## 2.2 Theoretical Background

When it comes to funding decision making, the main issue is information asymmetry. Funders do of course care about the final result of the supported project (Mollick 2014). This is especially true for funders who expect a funding compensation (rewards, payments, etc.) – but also for funders that engage in donation-based crowdfunding. Even in the latter, it is of funders' interest that the project reaches its aims. However, funders do not know the quality of projects *ex ante* and cannot see character traits and skills of the project initiators. For that reason, funders assess all given information and details on the projects and the founders to estimate projects' quality as well as initiators' credibility and skills (Agrawal et al. 2015; Ahlers et al. 2015; Belleflamme et al. 2014). In the context of decision making, research has explained that humans base decisions on subjective perception (Chen, Yao, & Kotha 2009). Thus, humans base decisions not only on objective numbers but also on subjective aspects (Shiloh, Koren, & Zakay 2001). Especially, funders try to assess which projects are the best to back by funding. One central theory here is prospect theory (Kahnemann & Tversky 1979) because most people are risk averse and prefer safe decisions and avoid insecurities (Kahnemann & Lovallo 1993). This means that they try to find those projects that do not only fit to their interests but also have

the best chances to be successfully conducted and will finally reach their aims. Mollick (2014) refers to the notion of *preparedness* which is seen as a basis for project success by the potential funders. This preparedness (Chen et al. 2009) can be seen as the measure of funders to assess project quality and to reduce funding risk. Crowdfunding projects which signal higher preparedness are perceived as having higher quality and are more likely to reach funding success (Mollick 2014). Another important notion that Chen et al. (2009) discuss in their paper is *passion*. They define passion as "entrepreneur's intense affective state accompanied by cognitive and behavioral manifestations of high personal value". While passion is manifested in the way how information is transferred (e.g., facial expression, voice, etc.), preparedness is manifested in the transferred content (e.g., assessed risks, product prototyping, etc.). Research on crowdfunding success has not yet tried to better distinguish between both notions. The notion of passion has not even appeared in respective research. We argue that this is because of the character of variables used that do not allow for a better separation of both notions. For example, the pure provision of a video cannot be assigned to either preparedness or passion because this binary variable does not allow such an assignment. Therefore, we base our research on the notion of initiators' preparedness and the notion of initiators' passion in order to integrate both aspects into theories on success of crowdfunding campaigns on online platforms.

## 2.3 Research Model

In Figure 1, an overview of our research model for explaining funding success of crowdfunding campaigns is provided. Our model embraces both quantitative and qualitative factors. The quantitative factors on the left-hand side are already established and have been included into several research publications on crowdfunding success (e.g., Agrawal et al. 2015; An et al. 2014; Barbi & Bigelli 2015; Belleflamme et al. 2014; Mollick 2014; Pitschner & Pitschner-Finn 2014; Zvilichovsky et al. 2014). Existing research addresses these factors in detail so that we refer to these publications for more information. In the following, we introduce the basic model consisting of quantitative factors in short and concentrate on the qualitative factors and their hypothesizing. Information on variable operationalization is provided further below in section 3.2.

### 2.3.1 Basic Model

In this paper, we refer to the *basic model* as a model without qualitative factors. The other models (Model 1-3) have qualitative factors included and use this basic model as a benchmark. The basic model consists of eleven variables that we will shortly introduce here. Hypothesizing and detailed results of model evaluations can be found in the respective publications. To keep it short, we have to confine ourselves to the expected influences of the variables on crowdfunding success:

The *Funding Goal* has a negative influence on funding success (Koch & Siering 2015; Mollick 2014) because higher goals are generally harder to reach. Also the length of the *Funding Period* has a negative influence on funding success (Mollick 2014) because founders indicate a lack of confidence towards their own project if they expect to need a long period of time for collecting the money for it. The *Description Length* (Barbi & Bigelli 2015; Koch & Siering 2015; Pitschner & Pitschner-Finn 2014), the number of *Pictures* (Koch & Siering 2015) as well as the provision of a *Title Video* (Koch & Siering 2015; Mollick 2014) and the provision of *Updates* (An et al. 2014; Koch & Siering 2015; Mollick 2014) have a positive influence on funding success because these transfer valuable information on the project. Furthermore, we include the *Risk Section Length* which has been hypothesized to have a positive influence on funding success (Koch & Siering 2015). The number of *Facebook Friends* (Mollick 2014), the number of *Previously Successfully Funded Projects* (Zvilichovsky et al. 2014), and the number of *Backed Projects* (Koch & Siering 2015; Zvilichovsky et al. 2014) have been shown to have a positive influence on crowdfunding success. Contrary, the number of *Previously Unsuccessfully Funded Projects* (Zvilichovsky et al. 2014) has a negative influence on funding success. Furthermore, the *category* assignment (e.g., Music, Fashion, etc.) will be included in order to control for possible differences between project categories (Mollick 2014).

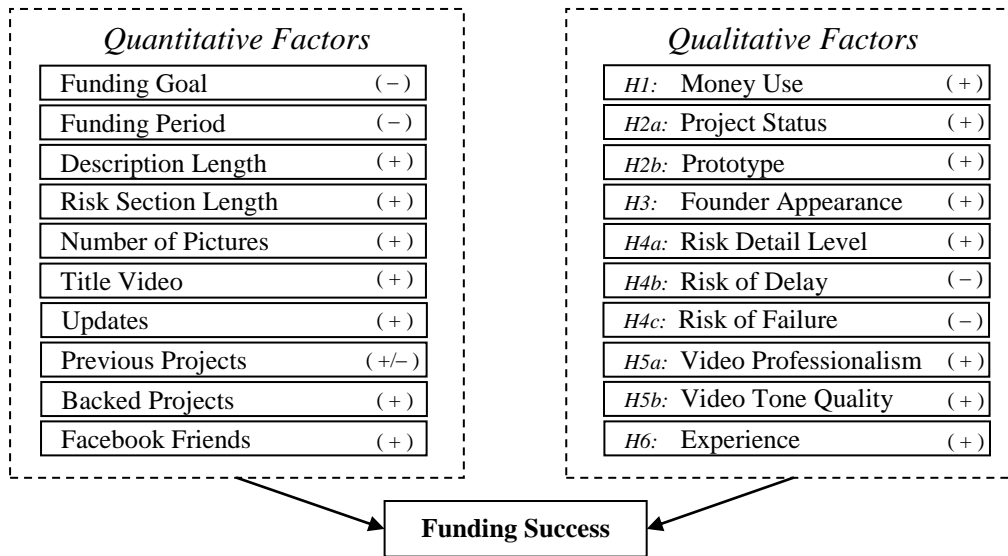


Figure 1. Overview of quantitative and qualitative factors in the analysis of funding success

### 2.3.2 Information on How the Funded Money Is Used

Research has shown that there is a significant influence of the funding goal on the outcome of crowdfunding campaigns. The higher the funding goal, the less likely the campaign is successfully funded (Koch & Siering 2015; Mollick 2014). In this context, the funding goal size can be seen as an approximation of project size and complexity (Koch & Siering 2015). On the other hand, the funding goal of complex and work-intense projects should not be set too small because unrealistically small funding goals hurt projects' plausibility (Müllerleile & Joenssen 2015). Such arguments indicate that the amount of money necessary to be collected and the expected upcoming workload of projects are important for funding decisions and that both aspects are related. Information on how the money is used helps to justify a specific funding goal, creates a feeling of transparency, and shows that the funding campaign and the project conduction are well planned. Such indication of a good planning is important. Mollick (2014) has measured the quality of a project based on so-called preparedness. The degree of preparedness shows how much time and work the project founder has already invested in the project and planning. We assume that information on how the funded money is used in project conduction will increase project plausibility. Such plausibility can function as trustworthiness in the context of Internet platforms and, thus, lead to credibility (Fogg et al. 2001). Therefore, we hypothesize:

**H1:** Information on how money is used has a positive impact on funding success.

### 2.3.3 Stage of Project Development

The campaign pages of crowdfunding projects contain written text, pictures, and videos, which give information about the project idea and its conduction. As discussed above, several studies have shown that the text length, number of pictures, and the provision of videos have a significant positive impact on the successful funding of crowdfunding projects (e.g., Mollick 2014). These variables are only included as numbers indicating how much text or media is provided. However, we believe that it is of high importance what type of information is provided. Thus, we assess text and media in order to extract specific details on projects' stage of development and to include these aspects into analysis.

So far, research has concentrated on the number of updates, which are an important means of communication. Via updates, for example, information on project progress and on the stage of development are communicated. It has been found that information transferred through updates have a significant positive influence (e.g., Mollick 2014). Therefore, it can be assumed that information on

the development and the product status is relevant for potential founders when deciding which projects to back by funding. We argue that a project at a very early stage is more likely to not reach its aims than a project that is close to its finalization (preparedness). Thus, a project that is quite far developed is less risky and potential funders easier develop trust towards such a project. An advanced or nearly finished project conveys lower perceived risk and increases the perceived degree of preparedness. Thus, the fact that the founders have already worked substantially on a project improves the perceived overall project quality. This is in line with prospect theory (Kahnemann & Tversky 1979) because most people are risk averse, prefer safer alternatives, and avoid insecurities (Kahnemann & Lovallo 1993). However, so far, only the number of updates has been considered and not the real stage development of projects. To close this gap, we assess the product status manually and hypothesize:

**H2a:** An advanced project status has a positive impact on successful funding.

Besides the description of how far the project is developed, founders can provide pictures or videos on how the result of the project will be. This can be, for example, a picture of a constructed item (e.g., an electronic device) or an audio sequence of a song (e.g., an album record). We argue that the provision of a visual or audible proof of a project's result, e.g., in form of a prototype, is valued as a proof of trustworthiness, which lowers perceived project risk and increases perceived preparedness of founders. Again, based on prospect theory (Kahnemann & Tversky 1979), we assume that especially media that shows ready products, results, or prototypes, will have a positive influence on funding success:

**H2b:** The presentation of prototypes (or results) has a positive impact on successful funding.

#### 2.3.4 *Founder Appearance*

Crowdfunding platforms, like Kickstarter.com, offer project founders the possibility to present themselves and to communicate with potential funders. Thus, funders have the chance to virtually meet the founders and get to know them better. Research has already started to discuss that potential funders value the possibility to know who leads and conducts the project (Koch & Siering 2015). Especially in the context of e-commerce, Egger (2001) argues that presenting the responsible persons and employees of a company (here: of the project) adds credibility. However, we argue that the presentation alone is not sufficient. Every person can easily think of persons that he or she would absolutely not support by funding. If a funder feels no sympathy towards project founders, a funding contribution is less likely. Contrary, sympathy can be seen as being associated with trust and credibility because people who are judged as pleasant or likeable are trusted and believed more easily (Reinmuth 2009). We transfer these arguments to crowdfunding: a pleasant or likeable founder who presents a project in a passionate and engaged manner can convince more platform users to back the project. We are aware of the fact that perceived sympathy can be very different according to who is asked. The same person can be liked by one person but disliked by another person. Nevertheless, we argue that there are funders who are judged pleasant by the majority of surveyed individuals and other funders who are judged unpleasant by the majority of surveyed individuals. Further, the assumption that the appearance has an influence on funding decisions is supported by Chen et al. (2009), who argue that passion and the way of presentation are important in persuading supporters. For funders, indication of passion towards the project is a sign of founders' engagement and commitment (Chen et al. 2009). In specific, we combine sympathy and passion because we believe that if one of the two is missing, the positive impact of founders' appearance is much less effective. Thus, we hypothesize:

**H3:** The perceived level of sympathy and passion has a positive impact on funding success.

#### 2.3.5 *Risk Description Information*

In the project description text or a separate risk section (like on Kickstarter.com), project founders can describe the risks and challenges of their projects and explain how to overcome these. Funders cannot influence how projects are conducted but we argue that they favor projects of founders that are aware of the respective risks and know how to deal with these. Further, risk awareness and management are



an important basis for project success (Elkjaer & Felding 1999) and risk transparency can have the effect of building credibility (Heald 2006). Therefore, we assume that especially information on risk helps funders to evaluate how much founders deal with risks. Research has already regarded the length of risk description but has not found significant influences (Koch & Siering 2015). However, we argue that the pure text length of risk descriptions measured by the number of words might not be sufficient to really capture the quality of provided risk information. Specifically, on the one hand, there can be short risk descriptions which explain the risks very precisely and, on the other hand, there can be long risk descriptions which do not explain the risks appropriately. Therefore, we assess the goodness of risk information provision manually and hypothesize:

**H4a:** The level of detail of risk information has a positive impact on funding success.

For the funders, who focus on the rewards that are offered, two main questions are of importance: will the promised rewards really be delivered and will these be delivered in time according to the announced delivery date. Regarding successfully funded projects, Mollick (2014) claims that in more than 75% of all cases rewards are delivered delayed. Research has pointed out that funders show consumer behavior (Gerber et al. 2012) – with the difference that they accept a rather long time to delivery after paying. However, research has found that the longer the distance to reward delivery the less probable is funding success (Joenssen, Michaelis, & Müllerleile 2014). Willingness to wait is not infinite and inexhaustible. In cases where it is apparent that the delivery will be further and further postponed, funders might doubt engagement and credibility of the project founders. Therefore, if the risk information entails information about delivery postponement, funders will be less likely to back the project by funding.

**H4b:** The disclosure of possible delays in delivery has a negative impact on successful funding.

In the worst case, a project can fail before it is completed. Then, no rewards are delivered and funders can lose their money without any compensation. While we believe that risk transparency contributes to generation of credibility, we assume that the risk of complete failure is much more serious. Project founders will think twice whether they really should invest in a project that declares that there is the risk that the complete project may fail. Therefore, referring to prospect theory (Kahnemann & Tversky 1979), we hypothesize:

**H4c:** The disclosure of the risk of failure has a negative impact on successful financing.

#### 2.3.6 *Video Quality*

Research has already included the provision of videos into analyses of crowdfunding success factors (Koch & Siering 2015; Mollick 2014). It has been found that the provision of videos has a significant positive influence on funding success. In particular, Mollick (2014) argues that creating a video is a sign of project quality because it indicates engagement of its founders. The question can be raised whether even the provision of qualitatively bad videos can help to reach the funding goal. The professionalism of videos provided on the crowdfunding campaign page has not been considered yet. We argue that especially videos of high image quality (including creative filming elements) influence funding success positively while videos of bad quality will not have the same positive influence. Especially professionally produced videos are associated with additional time exposure and passionate engagement of the founders. Therefore, a higher perceived project quality will reach more potential backers and hence lead to higher chances of funding success:

**H5a:** The degree of professionalism of provided videos has a positive impact on successful financing.

Besides this influence of image quality, we assume that also a higher tone quality has a positive influence on funding success. A video with a well understandable and clear sound can be seen as more thoroughly produced than a video with qualitatively bad or noisy sound. Thus, good tone quality might be seen as another signal of project quality:

**H5b:** The tone quality of provided videos has a positive impact on funding success.

### 2.3.7 Founder Experience

In the field of crowdfunding, studies have shown that the experience of founders in form of previously successfully funded campaigns (Zvilichovsky et al. 2014) has a positive influence on funding success while the number of failed funding campaigns has a contrary effect. Similar findings have been made in the area of venture capital. Venture capitalists also view experience of initiators as an important factor (MacMillan, Siegel, & Narasimha 1985) when deciding for or against projects and business plans. We think that the number of previous projects on the same platform is not sufficient because even a very experienced or well-known initiator can start a first project on a platform while having no previously created campaigns in the statistics. Therefore, we manually screen the project pages to control for obvious clues indicating experience. We argue that any clue of experience will have a positive influence on funding success because experience is perceived to reduce project risk:

**H6:** The indication of experience of project founders has a positive impact on successful funding.

## 3 RESEARCH METHODOLOGY

### 3.1 Data Set Acquisition

For our analyses, we use a data set that has been collected from the platform Kickstarter.com, which applies an all-or-nothing reward-based model. In total, our data set comprises 31,092 projects (i.e., 15,834 successfully and 15,257 unsuccessfully funded projects) going back from the end of November 2014. Such a big data set is optimal for analyzing quantitative or easy assessable qualitative attributes. However, for our purpose, we need a manual evaluation of qualitative attributes. This manual assessment of qualitative aspects is rather time-consuming. Therefore, from this large data set, we randomly draw 206 projects (105 successfully and 101 unsuccessfully funded projects) to allow for manual assessment of projects. This data set is almost balanced so that neither the successfully funded nor the failed campaigns are underrepresented. Further, to avoid problems of currency conversion, we only regard projects that are denoted in USD.

### 3.2 Variable Operationalization

Our research model extends the basic model, which contains the typical quantitative variables of previous research publications, by inclusion of several qualitative aspects (Figure 1). In the following, we operationalize the variables used in analyses:

<i>Variable</i>	<i>Operationalization</i>
FundingGoal	$\log_e$ of the amount of money that is intended to be collected by the campaign
FundingPeriod	duration length of the campaign in days
DescriptionLength	number of words in the project description text
RiskSectionLength	number of words in the risk description section
Pictures	number of pictures
TitleVideo	dummy variable indicating the provision of a video below the title
Updated	dummy variable indicating the provision of updates
BeforeSuccessful	number of previous successfully funded campaigns on the platform
BeforeFailed	number of previously failed funding campaigns on the platform
BackedProjects	number of previously backed projects on the platform
FacebookFriends	number of Facebook friends
MoneyUse	dummy variable indicating information on how collected money will be used
ProductStatus	stage of a project's development
Prototype	dummy variable indicating the provision of visual information on a prototype
FounderAppearance	degree of founder's passion and sympathy
RiskDetailLevel	level of detail of the risk description

RiskDelay	dummy variable indicating disclosure of potential delay of reward delivery
RiskFail	dummy variable indicating announcement that the project potentially fails
VideoProfessionalism	describes the video filming and image quality
VideoToneQuality	describes the video tone quality
VideoQuality	describes the overall video quality (i.e., image and tone)
Experience	level of experience that is revealed by information given
Category	categorical variable indicating a projects' category assignment

Table 2. Variable Operationalization

For qualitative aspects, we have determined ex ante how information is scaled so that it can be used for regressions. For *ProductStatus*, we assign crowdfunding campaigns to five values: [1] the project has not yet started, [2] the project has just started, [3] the project is ongoing, [4] the project is almost finished, and [5] the project is finished (here, the money is, for example, just needed to produce on a larger scale). We considered only the product or project result itself and not the complete production for the backers. For the classification of the product status we consider the project descriptions, pictures, and the video contents. For *FounderAppearance*, we assign the projects to three values: [1] an unpleasant founder and/or a non-passionate impression, [2] a neutral appearance of the founder, [3] a pleasant and friendly founder that passionately presents the project. If the initiator is not shown at all, the variable is set to zero. The variable *RiskDetailedness* can take three values: [1] no description of risks at all, [2] it is stated that risks exist but no further description is provided, [3] risks are stated and described in detail. The variable *VideoProfessionalism*: [1] only one filming perspective without any creative elements and videos with extraordinarily bad image quality, [2] some creative elements and different filming perspectives, [3] professional, creative camera work and extraordinarily good image quality. The variable is set to zero if no video is provided. *VideoToneQuality*: [1] tone that is difficult to understand and extraordinarily unsuitable audio elements and sounds, [2] is an understandable speech and tone, [3] good tone and extraordinarily suitable audio elements and sounds. The variable is set to zero if no video is provided. *VideoQuality* is the additive combination of the two variables *VideoProfessionalism* and *VideoToneQuality*. Finally, *Experience*: [1] the founder has no experience, [2] the founder has experience in the topic of the project but not in conducting projects (e.g., a singer who has experience in singing but has not yet produced a music album) and, [3] the founder has already experience in conducting projects.

To eliminate mistakes and to reduce a possible effect of subjective perception of only one individual, the qualitative variables have been assessed by a team of three persons without knowing the actual results of the funding campaigns. Each of these persons assessed all variables on his/her own. Afterwards, all results were compared and discussed. Mistakes and outliers were eliminated so that, finally, the team has classified all 206 projects in consent.

### 3.3 Statistical Analysis

For indicating whether a project has successfully reached its funding goal or not, we use the dummy variable *Success*. This binary variable equals one if the project has been successfully funded and zero if not. For analysis, we applied the following logistic regression:

$$\begin{aligned}
Prob(Success = 1) = & F(const + \beta_1 FundingGoal + \beta_2 FundingPeriod + \beta_3 DescriptionLength \\
& + \beta_4 RiskSectionLength + \beta_5 Pictures + \beta_6 TitleVideo + \beta_7 Updated + \beta_8 BeforeSuccessful \\
& + \beta_9 BeforeFailed + \beta_{10} BackedProjects + \beta_{11} FacebookFriends + \beta_{12} MoneyUse \\
& + \beta_{13} ProductStatus + \beta_{14} Prototype + \beta_{15} FounderAppearance + \beta_{16} RiskDetailLevel \\
& + \beta_{17} RiskDelay + \beta_{18} RiskFail + \beta_{19} VideoQuality + \beta_{20} Experience + \sum_{i=1}^{15} (\beta_{20+i} Category_i))
\end{aligned}$$

where  $F(\beta' X) = \exp(\beta' X) / (1 + \exp(\beta' X))$ , and  $\beta$ ,  $X$  are column vectors (Wooldridge 2013).

## 4 EMPIRICAL STUDY

### 4.1 Evaluation of the Research Model

Table 3 presents the results of the logistic regression explaining the funding success of projects. We divide the evaluation of the research model into four steps: the basic model and 3 models including the manually assessed qualitative factors. We have carefully checked the correlations between the variables of the respective models. Moreover, we have regarded the variance inflation factors (VIF) of the variables included. Generally, the lower the VIFs, the less regression results are affected by multicollinearity problems (Wooldridge 2013). Concerning the basic model, we do not find any problematic correlations and very low VIFs. Even the highest VIF is still below a value of 2.5.

Variables	Basic Model			Model 1			Model 2			Model 3		
	Coef	P> z	Sig	Coef	P> z	Sig	Coef	P> z	Sig	Coef	P> z	Sig
FundingGoal	-0.350	0.048	**	-1.502	0.001	***	-1.271	0.002	***	-1.059	0.003	***
FundingPeriod	-0.060	0.032	**	-0.089	0.060	*	-0.110	0.022	**	-0.086	0.047	**
DescriptionLength	0.002	0.029	**	0.003	0.046	**	0.002	0.086	*	0.002	0.124	
RiskSectionLength	0.001	0.850		-0.001	0.851		-0.001	0.887		-0.002	0.639	
Pictures	0.148	0.015	**	-0.038	0.725		0.059	0.596		0.089	0.411	
TitleVideo	2.135	0.001	***	-3.166	0.090	*						
Updated	2.678	0.000	***	5.144	0.000	***	4.783	0.000	***	4.884	0.000	***
BeforeSuccessful	0.526	0.292		0.965	0.173		0.693	0.308		0.607	0.361	
BeforeFailed	-0.760	0.289		-0.788	0.520		-0.973	0.411		-1.043	0.375	
BackedProjects	0.019	0.640		-0.105	0.169		-0.067	0.336		-0.010	0.874	
FacebookFriends	0.000	0.875		-0.001	0.382		-0.001	0.347		-0.001	0.290	
H1 MoneyUse				-1.138	0.235		-0.752	0.411		-0.778	0.380	
H2a ProjectStatus				1.173	0.004	***	0.864	0.026	**	0.666	0.062	*
H2b Prototype				-1.460	0.169		-0.565	0.556		-0.924	0.299	
H3 FounderAppearance				0.897	0.027	**	0.784	0.030	**			
H4a RiskDetailLevel				2.714	0.012	**	2.304	0.009	***	2.449	0.003	***
H4b RiskDelay				-2.196	0.061	*	-1.793	0.093	*	-1.955	0.053	*
H4c RiskFailure				1.614	0.228		1.317	0.346		1.005	0.394	
H5a VideoProfessionalism				2.705	0.008	***						
H5b VideoToneQuality				1.030	0.169							
H5 VideoQuality							0.463	0.000	***	0.500	0.000	***
H6 Experience				2.013	0.008	***	1.702	0.011	**	1.542	0.016	**
Categories	included			included			included			included		
Constant	2.314	0.161		-3.699	0.266		-2.479	0.435		-3.111	0.306	
Pseudo R <sup>2</sup>	0.532			0.757			0.752			0.733		
p > $\chi^2$	0.000			0.000			0.000			0.000		

Table 3. Regression results explaining funding success of projects (regression coefficient, p-value, significance: \*  $p < 10\%$ ; \*\*  $p < 5\%$ ; \*\*\*  $p < 1\%$ ).

The basic model confirms the main findings of previous studies concerning the quantitative factors. The funding goal has a negative influence on funding success (5% level of significance). Also the funding period has a negative influence on funding success (5% level of sign.). Contrary, the length of the project description (5% level of sign.), the number of pictures (5% level of sign.), the provision of a title video (1% level of sign.), and the provision of updates (1% level of sign.) have a positive influence on funding success. Hence, project founders can increase the success rate of their projects by providing more information on the project, which reduces the level of perceived information asymmetry. However, based on our data, we have not found significant influences of the risk section length, previously created projects, backed projects, and the number of Facebook friends. This might be a consequence of using a relatively small data set. The model achieves a Pseudo R<sup>2</sup> of 0.532.

In Model 1, we included all manually assessed qualitative factors. The evaluation of our research model has revealed several interesting findings concerning qualitative success factors. While we cannot confirm that a disclosure of how the money is used has an impact on the funding result of a campaign (H1), we find that the project status, i.e., how far the project is developed, has a positive influence on funding success (H2a: 1% level of significance). This means that funders reduce their own monetary risk by choosing projects on a later stage of development. Further, a more advanced project indicates that the founder has already worked on his product which signals a higher preparedness (Mollick 2014). Interestingly, the presentation of a prototype (H2b) has no influence on the success. Moreover, the project founder can increase funding success by a pleasant, friendly, and passionate appearance (H3: 5% level of sign.). This finding shows that the appearance of founders plays an important role and implies that passion (Chen et al. 2009) is a relevant dimension. Therefore, we conclude that both dimensions preparedness and passion contribute to funding success. Next, the level of detail of the risk description has a positive influence on funding success (H4a: 5% level of sign.) which underpins that risk awareness and risk transparency are relevant for the funders. Contrary, while we find indication of delayed reward delivery having a negative influence on funding success (H4b: 5% level of sign.), there is no significance for the variable indicating the risk of complete project failure (H4c). Video professionalism has a positive influence on funding success (H5a: 1% level of sign.) as well as information on experience (H6: 1% level of sign.). This allows the conclusion that information on experience of founders is important for funding success no matter whether the project founder has already created a crowdfunding campaign on the respective platform or not.

After including qualitative factors, the significance of the variables that were already included in the basic model have not changed much – except for the number of pictures provided, which has lost its significance. This loss of significance might be explained by the fact that the newly included qualitative factors explain funding success even better than just the number of pictures. Compared to the Basic Model, Model 1 has a noticeably higher Pseudo  $R^2$  of 0.757. However, when examining correlations and VIFs, we found that the variables indicating the provision of title videos, video professionalism, and tone quality are highly correlated. Specifically, for these three variables we find correlations slightly above 0.8 and VIFs slightly above 6. In order to eliminate possible effects of multicollinearity, in Model 2, we use the variable VideoQuality, which is the additive combination of video professionalism and tone quality. This approach successfully removes the high correlations so that all correlations are below 0.6 and VIFs below 2.7. The evaluation of Model 2 supports the results of Model 1 and the Pseudo  $R^2$  stays nearly the same (0.752).

We are aware of the fact that especially perceived sympathy concerning founder appearance is subject to individual perception. To overcome possible concerns of subjectivity, we run a third regression excluding the variable of sympathy. In this Model 3, all influences of the variables stay nearly same. Only the significance of the length of the project description text disappears. The Pseudo  $R^2$  is a little lower but still at a rather high level (0.733). All in all, the three models reveal stable and robust results supporting the assumption that qualitative factors contribute to explaining success factors and reveal new aspects that could not have been shown with pure quantitative success factors.

## **4.2 Model Improvement and Predictive Accuracy**

We conducted two further analyses to evaluate how much the model has been improved and how much better the predictive accuracy is with qualitative factors included. First, we evaluated how good the outcomes of crowdfunding campaigns in our sample have been classified (in-sample fit). Therefore, we used the whole sample as training data and predicted for all campaigns whether they will be successfully funded or not. Then, we compared the results of the prediction to the real results of the campaigns (Table 4). For the basic model, we found that 84.95% of the campaigns have been correctly classified. For our research model, however, the classification result has been improved so that 91.75% (Model 2) of the campaigns in our sample have been classified correctly (Model 3: 91.26%). However, this classification constitutes no real prediction problem because the training data equals the

	<i>Basic Model</i>	<i>Model 2</i>	<i>Model 3</i>
Sensitivity	85.71%	91.38%	91.43%
Specificity	84.16%	91.09%	91.09%
Positive Predictive Value	85.91%	91.51%	91.43%
Negative Predictive Value	85.00%	92.00%	91.09%
Correctly classified	84.95%	91.75%	91.26%

Table 4. *Classification results of in-sample testing*

campaigns the results of which are to be predicted (Wooldridge 2013). Therefore, we divided the sample into training data (90%) and data for the prediction (10%) in order to analyze the out-sample performance. Again, we compared how many funding outcome predictions were correct compared to the real outcomes of the campaigns. We repeated this procedure randomly 4,000 times and calculated the mean of all rates of correctly predicted outcomes. Thereby, for the basic model, we found that on average for 78.93% of the campaigns the funding results have been correctly predicted. For our models, again, an improvement has been found. Here, on average 83.57% (Model 2) and 83.33% (Model 3) of the funding outcomes have been predicted correctly. Given our small data sample of only 206 projects, this improvement is rather striking because the training set is quite small. We assume even better predictive results for larger samples of training data.

## 5 DISCUSSION AND CONCLUSION

For project initiators, it is of high importance to design a campaign in a way that leads to best chances of reaching the targeted funding goal. Previous research has analyzed several factors that are linked to funding success of online crowdfunding campaigns. Until now, the focus has been on quantitative factors and theoretical contributions in the field are based on quantitative aspects – while qualitative aspects have been neglected. However, the explanatory potential of quantitative factors is limited.

By our analysis, we obtain several interesting findings. Firstly, we find that the inclusion of only quantitative factors as an approximation for underlying qualitative attributes (e.g., text length instead of specific information included) is a surprisingly good approach. However, secondly, we show that qualitative factors address specific aspects more precisely than pure quantitative data. Thirdly, we reveal new interesting findings about individuals' funding decision making in the context of crowdfunding. For example, we show, that information on the project status, i.e., how close the project is to its perfection, supports funding success and that also the quality of videos provided on the campaign pages is relevant. A video with bad image and tone quality leads to lower chances of funding success than videos that show good quality. Moreover, experience can be expressed effectively through textual description – not only by previously created campaigns. Contrary, information that indicates a possible delay in delivery of the rewards has a negative impact on funding success. Fourthly, we extend the theoretical picture of funding decision making. Whereas Chen et al. (2009) argue in the context of venture capital that *preparedness* and *passion* of project initiators contribute to persuading investors, research on crowdfunding success has only focused on preparedness (e.g., Mollick 2014) and neglected the notion of passion. We find indication that aspects of passion towards the own projects is also relevant for funding success. Finally, our findings support the theory that founders tend to follow signals of quality and strive to lower risk (prospect theory). We are aware of the limitation that we regard data of only one platform. However, we expect similar results for other platforms which have most commonly a comparable setup. We are convinced that the inclusion of qualitative factors lead the way for enhancing the analysis of crowdfunding success and allow giving more precise advice to project founders concerning optimal campaign design. Therefore, by our research, we want to motivate further research to engage in the assessment of qualitative factors in order to improve our understanding of funding success and funding decision behavior of funders on crowdfunding platforms. To improve operationalization and scaling of quantitative factors, we propose the conduction of surveys which can provide a good basis for assessing qualitative factors.

## References

- Agrawal, A., Catalini, C. and Goldfarb, A. (2015). Crowdfunding: Geography, Social Networks, and the Timing of Investment Decisions. *Journal of Economics & Management Strategy*, 24 (2), 253–274.
- Ahlers, G. K., Cumming, D., Günther, C. and Schweizer, D. (2015). Signaling in Equity Crowdfunding. *Entrepreneurship Theory and Practice*, 39 (4), 955–980.
- An, J., Quercia, D. and Crowcroft, J. (2014). Recommending Investors for Crowdfunding Projects. In *Proceedings of the 23rd International World Wide Web Conference (WWW'14)*, pp. 261–269, Korea, Seoul.
- Barbi, M. and Bigelli, M. (2015). Crowdfunding Practices in and outside the US. Working Paper, Version: 2015/03/12.
- Belleflamme, P., Lambert, T. and Schwienbacher, A. (2014). Crowdfunding: Tapping the right crowd. *Journal of Business Venturing*, 29 (5), 585–609.
- Belleflamme, P., Omrani, N. and Peitz, M. (2015). The economics of crowdfunding platforms. *Information Economics and Policy*, 33, 11–28.
- Black, E. L., Burton, F. G. and Johnson, P. M. (2009). Qualitative factors as determinants of continued success: An examination of eBusiness entrepreneurial firms using the New Venture Template. *The Journal of Entrepreneurial Finance (JEF)*, 13 (2), 76–102.
- Chen, S.-J. and Hwang, C.-L. (1992). *Fuzzy Multiple Attribute Decision Making*. Springer-Verlag, Berlin, Heidelberg, Germany.
- Chen, X.-P., Yao, X. and Kotha, S. (2009). Entrepreneur passion and preparedness in business plan presentations: a Persuasion Analysis of Venture Capitalists' Funding Decisions. *Academy of Management Journal*, 52 (1), 199–214.
- Crosetto, P. and Regner, T. (2014). Crowdfunding: Determinants of success and funding dynamics. *Jena Economic Research Papers (No. 2014-035)*.
- Egger, F. N. (2001). Affective Design of E-Commerce User Interfaces: How to Maximise Perceived Trustworthiness. In *Proceedings of The International Conference on Affective Human Factors Design*, pp. 317–324, Seattle, WA, USA.
- Elkjaer, M. and Felding, F. (1999). Applied Project Risk Management: Introducing the Project Risk Management Loop of Control. *International Project Management Journal*, 5 (1), 16–25.
- Fogg, B. J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., Paul, J., Rangnekar, A., Shon, J., Swani, P. and Treinen, M. (2001). What Makes Web Sites Credible? A Report on a Large Quantitative Study. In *Proceedings of the Conference on Human Factors in Computing Systems*, Singapore.
- Gerber, E. M., Hui, J. S. and Kuo, P.-Y. (2012). Crowdfunding: Why People Are Motivated to Post and Fund Projects on Crowdfunding Platforms. In *Workshop of the fifteenth ACM conference on Computer Supported Cooperative Work and Social Computing (CSCW'12): International Workshop on Design, Influence, and Social Technologies: Techniques, Impacts and Ethics*, Seattle (WA), USA.
- Greenberg, M. D., Pardo, B., Hariharan, K. and Gerber, E. (2013). Crowdfunding Support Tools: Predicting Success & Failure. In *Extended Abstracts on Human Factors in Computing Systems (CHI'13)*, pp. 1815–1820, Paris, France.
- Heald, D. (2006). Transparency as an Instrumental Value. *Proceedings of the British Academy*, 135, 59–73.
- Joenssen, D. W., Michaelis, A., & Müllerleile, T. (2014). A Link to New Product Preannouncement: Success Factors in Crowdfunding. Working Paper,
- Kahnemann, D. and Lovallo, D. (1993). Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking. *Management Science*, 39 (1), 17–31.

- Kahnemann, D. and Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47 (2), 263–291.
- Koch, J.-A. and Siering, M. (2015). Crowdfunding Success Factors: The Characteristics of Successfully Funded Projects on Crowdfunding Platforms. In Proceedings of the Twenty-Third European Conference on Information Systems (ECIS'15), Münster, Germany.
- Kuppuswamy, V. and Bayus, B. L. (2013). Crowdfunding Creative Ideas: The Dynamics of Project Backers in Kickstarter. Working Paper, Version: 2013/03/16.
- MacMillan, I. C., Siegel, R. and Narasimha, P. S. (1985). Criteria Used by Venture Capitalists to Evaluate New Venture Proposals. *Journal of Business Venturing*, 1 (1), 119–128.
- Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, 29 (1), 1–16.
- Müllerleile, T. and Joenssen, D. W. (2015). Key Success-Determinants of Crowdfunded Projects: An Exploratory Analysis, Studies in Classification, Data Analysis, and Knowledge Organization. In Data Science, Learning by Latent Structures, and Knowledge Discovery (Lausen, B., Krolak-Schwerdt, S., & Böhmer, M. Eds.), pp. 271–281. Springer, Berlin, Heidelberg, Germany.
- Pitschner, S. and Pitschner-Finn, S. (2014). Non-profit differentials in crowd-based financing: Evidence from 50,000 campaigns. *Economics Letters*, 123 (3), 391–394.
- Reinmuth, M. (2009). Vertrauen und Wirtschaftssprache: Glaubwürdigkeit als Schlüssel für erfolgreiche Unternehmenskommunikation. In *Die Sprache der Wirtschaft* (Moss, C. Ed.), pp. 127–145, Wiesbaden, Germany: VS Verlag für Sozialwissenschaften | GWV Fachverlage GmbH.
- Rossi, M. (2014). The New Ways to Raise Capital: An Exploratory Study of Crowdfunding. *International Journal of Financial Research*, 5 (2), 8–18.
- Shiloh, S., Koren, S. and Zakay, D. (2001). Individual differences in compensatory decision-making style and need for closure as correlates of subjective decision complexity and difficulty. *Personality and Individual Differences*, 30 (4), 699–710.
- Vaus, D. A. de. (2002). *Surveys in Social Research*. 5th Edition. Allen & Unwin, Crows Nest, Australia.
- Wooldridge, J. M. (2013). *Introductory Econometrics: A Modern Approach*. 5th Edition. South-Western, Cengage Learning, Mason, OH, USA.
- Xu, A., Yang, X., Rao, H., Fu, W.-T., Huang, S.-W. and Bailey, B. P. (2014). Show me the money! In Proceedings of the 32nd ACM Conference on Human Factors in Computing Systems (CHI'14), pp. 591–600, Toronto, Canada.
- Zvilichovsky, D., Inbar, Y. and Barzilay, O. (2014). Playing Both Sides of the Market: Success and Reciprocity on Crowdfunding Platforms. Working Paper, Version: 2014/09.