International Review of Entrepreneurship, Article #1635, 18(3): pp. 467-492.

What Determines the Success of Reward-based Crowdfunded Start-ups in the U.K. and the U.S.?

Sardar Muhammad Usman
Zhejiang University, Hangzhou, China and COMSATS University Islamabad (CUI), Pakistan

Farasat Ali Shah Bukhari
Zhejiang University, Hangzhou, China and COMSATS University Islamabad (CUI), Pakistan

Sultan Sikandar Mirza
University of Waikato, Hangzhou, China

Tanveer Ahsan
Rennes School of Business, France[1]

Abstract. The purpose of this study is to examine the role of three market signals related to reward-based crowdfunding projects in mitigating the problems of information asymmetry and determining the success of a project. These market signals are media presentation (i.e., whether the project description includes videos and images), project updates, and founder's competency. We apply binary logistic and probit regression on 500 projects from Kickstarter (U.S.) and 500 projects from Crowdfunder (U.K.). We observe a significant negative association between media presentation and project success and a positive association between founders' competency and project success in the U.S. These findings suggest that founder's competency signals mitigate the problem of information asymmetry and plays a significant role in determining the success of the project in the U.S. However, the extensive use of media can communicate negative signals about the project and can reduce the probability of project success. We do not find any significant association between market signals and project success in the U.K. Our results are robust to different regression techniques and econometric models.

Keywords: crowdfunding, media presentation, project updates, founder's competency, information asymmetry, signaling theory, United States, United Kingdom.

JEL Classifications: D25, D26, G11.

1. Corresponding author: Tanveer Ahsan, Department of Finance, Rennes School of Business, 2 Rue Robert d'Arbrissel, 35065 Rennes, France. Email: tanveer.ahsan@rennes-sb.com

1. Introduction

Financial support for entrepreneurial initiatives is vital for the success of those initiatives. A large number of academic practitioners verified this perennial issue in the literature and concluded that new-born and young firms are facing problems as regards access to funding (Beck & Demirguc-Kunt, 2006; Berger & Udell, 1998; Cassar, 2004); however, research also identifies opportunities for additional collaboration (Harrison & Mason, 2000). New start-ups have no clear informational transparency and are faced with the issue of an inadequate borrowing record. These firms at inchoate stages regularly encounter serious complications with respect to access to financial support from conventional financial institutions, such as banks (Binks et al. 1992; Udell, 2015). Therefore, prevailing onerous issues restrict innovative entrepreneurial initiatives from seeking obligatory start-up funding and initial investment (Colombo & Grilli, 2007).

However, the angel market is evolving over time (Mason et al. 2019). Due to recent technological advancement in the field of communication, an alternative source of finance (crowdfunding) is rising rapidly. Crowdfunding has been defined as "The efforts by entrepreneurial individuals and groups—cultural, social, and for-profit—to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries" (Mollick, 2014, p. 2). Crowdfunding facilitates many young entrepreneurs by providing minor amounts of capital for their start-ups through online crowdfunding platforms (Cumming et al. 2020). It provides future entrepreneurs an opportunity to seek financial contributions from individuals instead of trusting on banks or expert financers (Belleflamme et al. 2014). The estimated crowdfunding market raised a total of $48 billion in 2016, where the Asian Pacific (APAC) market is expected to reach $42.39 billion by 2021. Also, Europe, the Middle East, and Africa (EMEA) are growing at a compound annual growth rate (hereafter CAGR) of 14.70%. Furthermore, the crowdfunding market is anticipated to cultivate at CAGR of 17% between 2017 and 2021, and the estimated worth of the industry will be $ 90-96 billion by 2025 (Technavio, 2016; Transparent Hands, 2018).

Besides other crowdfunding prototypes, reward-based crowdfunding (further explained in Section 2) is a fairly new choice of financing and being researched relatively rarely in comparison with traditional forms of financing i.e., financial institutions, the venture capital market, and other prototypes of crowdfunding such as equity and lending. To overcome the financing gap encountered by the seed ventures, a strong mechanism has been developed by the reward-based crowdfunding and business angels (Zhao, 2019). The growth rate of the reward-based crowdfunding market is fairly notable, although it's contributing only 0.7% of the overall alternative finance industry in 2017 (Zhang et al., 2018).

Despite the growth of the global crowdfunding market and its technological advancement, the regulatory structure in some parts of the world is still not much vivid to provide more dynamic settings for crowdfunding to nurture (Petruzzelli et al. 2019). According to Profatilov et al. (2015), "crowdfunding gains more and more economic power and requires regulation at the legislative level" (p. 149). This shows that crowdfunding is still at emergent stages of development as the legitimate status in many countries is different (Iurchenko et al., 2020). However, the backing of regional organizations and supervising governmental agencies might boost the enthusiastic willingness of entrepreneurs regarding this innovative kind of financing and increase the growth of platforms (Vasileiadou et al. 2016). In the USA, the Jobs Act (signed into account by Barack Obama on April 5, 2012) touched the limelight, which permits equity crowdfunding for non-accredited investors (title III). However, it could not work until the US Securities and Exchange Commission (SEC) promulgates rules for such offerings and the Financial Industry Regulatory Authority (FINRA) establishes a set of rules specifically designed for funding portals (European Crowdfunding Network (ECN), 2014, p. 231). Contrarily, in March 2014, the Financial Conduct Authority (FCA) has made a distinctive set of regulations for the U.K. crowdfunding market. According to the ECN (2014, p. 229) the U.K. looks to be in a position to attain "a sensible balance between promoting crowdfunding as an alternative financing method for individuals and businesses, whilst offering an appropriate level of protections to investors". One of the motives that explicate the significance of the institutional provision is that this could uplift the level of confidence by the project founders and potential financers on the crowdfunding platforms (Burtch et al. 2014).

Crowdfunding platforms exist in approximately 30 countries globally; however, we select the United States (U.S.) and the United Kingdom (U.K.) for cross-comparison because U.S. is the leading country with 191 platforms, and is followed by U.K. with 44 platforms (Cho & Kim, 2017; Lipman, 2016).[2] Backers from the U.S. contributed a total of $4.03 billion on Kickstarter, which is documented as the most famous and superior crowdfunding platform, since its inception in 1999, with a total of 85% pledges being made on the platform.[3] According to Kromidha (2015), U.S. start-ups are entrepreneurial in nature and the market is greatly influenced by its own novelties and price fluctuations. The leading number of platforms, market innovation, and the large amount of money raised has made it undebatable that the U.S. emerges as a worldwide pioneer in crowdfunding patterns. Contrarily, we consider U.K. for comparison because it has possibilities for potential growth in the crowdfunding market. The industry remarkably expanded between 2014 to 2015, and the growth was stated to be $1.85 billion. In 2016, the market expanded with an impulsive growth of 43.3%,

2. https://www.statista.com/statistics/251573/number-of-crowdfunding-platforms-worldwide-by-country/
3. https://mashable.com/2014/03/04/kickstarter-countries/?europe=true#B5Hu5eK4ciqA

amounting to $5.80 billion.[4] According to Statista (2018), the transaction value of the U.K. crowdfunding segment amounted to $149 million and is anticipated to accomplish an annual growth rate (CAGR 2018-2022) of 15.3%, which will result in a total amount of $262.7 million by 2022 (Statista, 2018). Moreover, among the internet penetration countries, U.K. stands at fifth, and the estimated number of monthly internet users was 54.2 million in 2016. It is expected that the internet penetration rate across the U.K. will rise from 90.64% to 94.85%.[5] The U.K. and European markets are interrelated and appear to be more dedicated on the societal aspect of crowdfunding, generally associated with philanthropic donations (Kromidha, 2015). The substantial growth rate is expected to offer a foundation and vivid environment for the crowdfunding industry to grow. Therefore, the U.K. was selected alongside the U.S. to compare crowdfunding sites.

Although the enormous growth and active adoption of crowdfunding has become a global trend, to the best of our knowledge, a limited amount of research has examined the comparative analysis between the two countries in the context of crowdfunding success and market development (Cho & Kim, 2017; Chu, 2017; Zheng et al. 2014). Further, examining the importance of media presentation (images and videos), project updates, and founders' competency signals in mitigating the information asymmetry issue in crowdfunding, especially reward-based crowdfunding, is quite rare. Prior research probing this issue in crowdfunding is limited to a single country context (Courtney et al. 2017; Hong et al. 2018; Piva & Rossi-Lamastra, 2018). Therefore, this study contributes to the literature by conducting a comparative empirical research and investigating the role of signaling in the form of media presentation, project updates, and founder's competency in mitigating information asymmetry in U.S. and U.K. We collect data from Kickstarter for U.S. and Crowdfunder for U.K. We apply binary logistic and probit regression on the final sample size of 500 projects from each country to investigate the impact of media presentation, project updates, and founder's competency on the success of the projects. We find a significant negative association between media presentation and project success in the U.S. and a positive but insignificant coefficient in the U.K. We also find a positive but weakly significant association between founder's competency and project success in the U.S. The outcomes of the analysis conclude that founder's competency creates a positive signal about the project and increases the success probability of the project by mitigating information asymmetry. However, the extensive use of media by the U.S. founders seems to communicate negative signals about the project and decreases the probability of success of the project. Our results are robust to different methodological approaches.

The remainder of the paper is structured as follows: Section 2 provides a literature review and develops hypotheses. Section 3 explains our sample data and

4. https://www.theupeffect.com/blog/crowdfunding-industry-alt-uk/
5. http://reports.crowdsourcing.org/

methodology. Section 4 presents the empirical results. Section 5 discusses the findings and conclusions.

2. Literature Review

2.1. Dynamics on the Reward-based Crowdfunding Market

Dissimilar to lending-based and equity-based crowdfunding markets, where potential backers engender earnings via equity being issued by the corresponding company or received interest on the invested capital, the reward-based crowdfunding market restricts potential backers by not giving any financial payoffs. As a substitute, they speculate to get a "reward"—a nonmonetary tangible gain based on their valued investment such as purchasing a commodity or service at a discounted price. The actual transfer of the reward remains uncertain until satisfying/fulfilling any defined conditions before delivering the reward to the potential backers (Thies et al. 2016).

According to Kuppuswamy & Bayus (2018), the potential backers are not fully confident that they will collect any payoff based on their amount of investment. They hold a minor amount of information about the item/product they prefer for investment in comparison with a regular purchasing environment, in which the item or service pre-exists, and is likely to be examined thoroughly. Moreover, the investment of the potential backers cannot be associated with a purchase, because the creator has no legitimate liability to manufacture and supply the reward (Mollick, 2014).

The initial information used by the potential backers for an investment decision is the project description mentioned by the founder on the platform. This usually comprises a video, picture, comments, updates, or other necessary factors of the project. Such content permits the potential backer to establish an attitude regarding the project and the promised reward (Duan et al. 2009; Luo & Zhang, 2013). According to Thies et al. (2016), such quality valuation is hypothetically biased because all initial information originated from one source (the campaign founder). Hence, the project quality is obscure at the moment when potential backers make a decision to pledge. Moreover, as per Luo & Zhang (2013), the quality of the project and trustworthiness are increasingly important for the potential backers in the project evaluation process, especially in the reward-based crowdfunding market. Former empirical studies have inspected the antecedents of success in the reward-based crowdfunding market from the perspective of quality signals. A summary of related empirical studies on reward-based crowdfunding success is presented in Table 1.

Table 1. Previous research work on reward-based crowdfunding success

Authors of the paper	Dependent Variable	Independent Variables	Control Variables	Findings	Data Source	Sample size
Courtney et al. (2017)	Project success (0,1)	Media (pictures and videos); backer sentiment; founders' past success.	Project goal, number of comments, Facebook friends, category, duration, spelling error, year, number of words, quick updates, number of rewards.	Media usage, creator's past success and positive backer sentiments positively affect the crowdfunding project and enhance the chances of project success.	Kickstarter	267,295
Bi et al. (2017)	Total number of backers (who make an investment)	Number of reviews, total number of videos, word count, and like count.	Duration, and project goal.	Decisions related to backer's investment in any crowdfunding project are strongly influenced by the videos count, word count, like and number of reviews mentioned in that specific project description.	Zhongchou (China)	1407
Barbi & Bigelli (2017)	Project success (0,1)	Video, length of the context, squared project description context, reward levels, project goal, and duration.	Country, category, year, and fixed effects.	The chances of project success increase by including more videos, greater number of fascinating rewards, shorter duration, and keep the project goal minimum.	Kickstarter	105,997
Clauss et al. (2017)	Project success (0,1)	Comments divided in two categories: comments from the crowd and comments from the owner, last comment positive. Number of updates.	Total project supported, total past projects, individual person (0,1), videos (0,1), additional homepage (0,1), image of the project creator (0,1), project goal, images (0,1), rewards, duration, Facebook, and industry	Social interaction through project description attitude and project quality between creator and backer in the crowdfunding project increases the chances of its success.	Visionbakey (Germany)	430

Petitjean (2018)	Project success (0,1)	Project goal, category-wise past success, 1st week total pledge, 1st week total number of backers, 1st week funded amount, geography, number of weblinks shares, Facebook friends, number of updates, comments, and role of media (photos and videos).	None	Project goal negatively influences on the project success. The past success rate observed by a project category before the launch of the campaign does matter. In-order to determine the project success, the first week of the campaign plays an important and informative role. Positive effect of the comments being observed on the project success. The outcomes suggest that Facebook friends, shares, updates, pictures, geographical factors, and websites did not influence the project success. It only explores that videos have significant and positive effect on the project success under certain circumstances.	KissKissBankBank (France)	160
Moy et al. (2018)	Project success (Number of backers, total amount raised)	Project description, Length of context	Creator experience, geographic location, duration, category, project goal, square duration, competition, location, and edits.	It is concluded from the study that there is a vivid inverted–U shaped association among quantity of descriptive context and project success. Large number of information will influence negatively on the fund raised and number of backers.	Kickstarter	81,892
De Larrea et al. (2019)	Project success rate	Number of pictures, total comments, number of videos, total updates, number of words, structural features of rewards, community orientation.	Project goal, staff pick, and duration.	Images and community orientation highlight the key concept of the restaurant, and regular contact with potential backers through mode of communication are key factors for the project success.	Taobao (China)	5128

Yeh et al. (2019)	Project success (0,1)	Length of context (number of words), total number of images, frequency of the updates, extra weblinks, experience, number of rewards, Facebook friends, support other campaigns, projector response.	Geographic location: (nationality Japan or Taiwan).	Media presentation including images and text description, quality signals including updates frequency, founder response, formal website, and supporting other projects and rewarding response, positively affect the project success. Whereas experience of the project creator does not affect the project success.	Zeczec (Taiwan), FlyingV (Taiwan), Campfire (Japan), Makuake (Japan).	323
Usman et al. (2019)	Project success (fully funded, number of backers, and funding amount).	Media presentation (videos and images 0-3) and founders' past success.	Project updates (0,1), length of context, URL links, and project duration.	The study concludes that media presentation and founders' past success positively influence on the project and enhance the chances of crowdfunding success.	Crowdfunder (UK)	14,887
Liang et al. (2020)	Project success (0,1)	Number of images and videos, word count, word count squared, number of updates and comments, and readability.	Project goal, founders' experience as creator and backer, Facebook. Extra weblinks, duration, country, number of rewards, category, start year, start month.	There is an inverted U-shape relationship between word count and project success. Project duration, updates, video count, and picture count have positive effects on project success. There is a negative association between readability and campaign success. Comments negatively moderates the effect of picture count on crowdfunding success.	Kickstarter	7207

2.2. Information Asymmetry, Signaling Theory and Crowdfunding

Information asymmetry makes the providers of the financial resources reluctant and increases the cost of obtaining these resources. In the most adverse situation, start-ups may end even before the start, due to the lack of financing. A potential financier gauges two unseen attributes before pledging a financial contribution to any economic activities, which involve the qualitative attributes (activity-related information) and firm's capabilities (firm-related information). Consequently, to acquire these resources, firms need to provide clear information about their qualitative attributes, and capabilities to the potential financiers (Courtney et al. 2017; Steigenberger & Wilhelm, 2018). The signaling theory explains that the information provided by the firms creates signals (positive/negative) about the performance, success, and financial position of these firms (Tirole, 2010).

Signaling denotes the process of sending signals in the form of information by the agents (managers) to the potential financers (Connelly et al. 2011). Therefore, it is important how ventures may use these significant signals to overcome information asymmetry issues and acquire the desired financial resources (Nguyen, 2017). For example, Spence (1977) presented the job market scenario where potential candidates know his/her competences, but it's tough for the employer to ascertain the intangible attributes of the candidate. Therefore, to figure out this information asymmetry problem, the educational level achieved by the candidate has become a signal of his/her quality. In this situation, competence is perceived as a desirable feature, and signaling is valuable for the employer as well as the candidate. Oppositely, the sender may refuse to use conveyed signals carrying unwanted information (Spence, 1977). Kirmani and Rao (2000) presented a model in which they classified the firms' nature into high-quality versus low-quality firms. They further explain that a firm's management must decide about the signaling information related to the project by attracting the market participants, and a firm having high-quality signals will have a higher payoff and vice versa.

Furthermore, better quality firms have the advantage to convey the true information whereas bad quality firms are not in the position to convey some of the secret information. As per the signaling approach, quality is the distinctive feature, which denotes to "the underlying, unobservable ability of the signaler to fulfil the needs or demands of an outsider observing the signal" (Connelly et al. 2011, p. 46). Anglin et al. (2018) evaluated these signals from the perspective of costly and costless signals and investigated whether such signals furnish adequate financial projections. They explain that costly signals are significantly more vital and influential then costless signals for making an investment. They also explain that the influence of the costless signals might be deteriorating or nullifying by the costly signals, however, it is anticipated that by diminishing the problem of information asymmetry, these signals can work together in the same vein like costly signals (Plummer et al. 2016). Furthermore, they pointed out that few potential financiers have much faith in the credibility of costless signals. However, in the co-presence of costly signals, costless signals are considered more viable, reinforcing their impact.Information asymmetry is the imbalance of information between internal and external stakeholders of a firm (Tirole, 2010). The firms frequently seek outside financial resources to maintain and develop their business activities (Steigenberger & Wilhelm, 2018).

The extant literature on crowdfunding suggests that reseachers have effectively used the signaling theory to illuminate the campaign success by nullifying the problem of information asymmetry. To attract more contributions, the founder may use high-quality signals to persuade a potential contributor towards an investment (Belleflamme et al. 2014), but information related to quality given by the project creator that can't be observed is not an effective signal. To make a signal more efficient and effective, it must be observable to a

potential investor. Not only that, but it must be challenging for the low-quality venture to mimic exclusively, and thus better-quality ventures will benefit (Ahlers et al. 2015). Most of the prior researchers anticipated that project quality can be evaluated through signaling dynamics (market readiness and perfectness), which brings a significant influence on the failure or success of the crowdfunding campaign (Ahlers et al. 2015; Colombo & Grilli, 2007; Mollick, 2014). Features, videos, images, updates, and comprehensive details about the project in the shape of text, result from a more rigorous preparation by the creators and thus reflect a high-quality signal, which eventually leads toward success (Courtney et al. 2017; Usman et al. 2019). A study of reward-based crowdfunding (Kickstarter) finds that project quality signals are significant antecedents of funding performance and that a higher number of multiple aspects (project information, video, image, project description, interaction with backers) managed and designed by the creators in the campaign, significantly affect the likelihood of funding (Greiner & Wang, 2010; Daskalakis & Yue, 2018). Empirical evidence on the relationship between project quality signals and fundraising outcomes indicates that projects with a high ratio of signals in the shape of videos, images, and text reflect greater chances of success, but projects that have a low ratio of signals eventually end up at the deadline with a minimum fundraising amount. The framework presented by Chen et al. (2009), followed by Mollick (2014), addressed the impact of quality preparation to motivate contributors to finance new ventures. Bi et al. (2017) claimed that the video and project description positively affect the rate of success in Chinese crowdfunding projects. Based on the above discussion, we develop our first hypothesis:

Hypothesis 1: Media presentation of a crowdfunding project increases crowdfunding performance.

Further, the updated information furnished by the founder about the campaign provides the impression of support, updated achievements, and development. Such information demonstrates the commitments and capabilities of the project creator to push the project forward but also overcome the potential risk associated with the campaign (Kuppuswamy & Bayus, 2018; Xu et al. 2014; Kaartemo, 2017). Updates can nourish the relationship between the initiator and the crowd, and henceforth lead to a higher degree of trustworthiness (Block et al. 2018). According to Kunz et al. (2017), updates present a way to brief their potential backers about the progress of the campaign. Updates pop up separately on the project page or in the shape of a personal message to all potential backers who have already decided to make a nancial contribution. Regularly updated information is contemplated to be a positive sign of being more veracious in funding efforts (Mollick, 2014). Xu et al. (2014) examine the updates of project descriptions and explain that the chances of success for a project without updates were 32.6%, whereas the chances of success with updates were 58.7%. Such

results suggest that updates may be as important as the creation of the project representation in determining the outcome of a campaign. Furthermore, according to Anglin et al. (2018), entrepreneurs' updates about the crowdfunding campaign plays the role of communication and exchange of information among entrepreneurs and backers in the shape of a dialogue. This may provide researchers with further insight into the dynamics between the entrepreneur and the crowdfunding decisions. Furthermore, Mollick (2014) stated that posting updates before the fundraising deadline increases the performance of a crowdfunding campaign. Accordingly, we develop our second hypothesis:

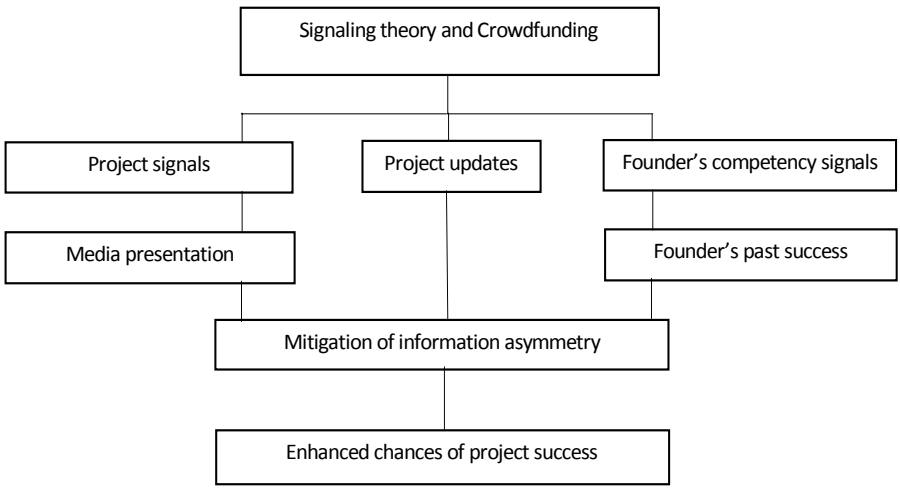
Hypothesis 2: There is a positive association between project updates and the performance of the crowdfunding campaign.

One of the propositions of the signaling approach is that project success is anticipated to narrate the signals of founders' competency. These substantial signals may decrease a contributor's concern about asymmetric issues and the possible lack of success of the campaign (Ahlers et al. 2015; Mollick, 2014). Signals of founders' competency are basically the founders' capabilities and expertise. According to Ahlers et al. (2015), human capital is one of the key factors for venture success, because highly technical and efficient human capital is much better at identifying and exploiting business opportunities, defining and realizing a venture's strategy, and building a positive basis for future learning. In a similar vein, whenever venture capitalists select an entrepreneurs' team, they consider the entrepreneurs' experience, management capabilities, and academic achievements in the selection measure. These signals echo sophisticated venture quality and impact positively on funding success. According to Jegeleviciute and Valanciene (2015), few nations put exceptional endeavor with the purpose of educating financers and eradicating fraud. More specifically, the U.S. offers two kinds of schemes, which not only provides training and knowledge for financiers but guide their advisors also. Crowdfunding Professional Association (CFPA) offers two certification programs—one for potential financers and one for industry professionals. Courtney et al. (2017) propose that the level of experience in the crowdfunding market varies from one creator to another. One may hold more experience with successful fundraising from crowdfunding projects than others. To assess the quality of prevailing projects, the financer can evaluate the worthiness of the project by looking at the prior experience of the creator in the crowdfunding market. Moreover, if the project creator can demonstrate the successful nature of earlier campaigns on crowdfunding platforms, it creates strong credibility for the backers regarding the founders. In particular, it increases confidence in the founders' ability to initiate and supply the present crowdfunding campaign as well. Accordingly, we develop our third hypothesis:

Hypothesis 3: Founders' competency-signals enhance crowdfunding performance.

Figure 1 summarizes the theoretical framework of the study based on the literature and prior empirical evidence as explained above.

Figure 1: Taxonomy of the study



3. Data, Variables, and Methodology

3.1. Data

We collect data on the fundraising initiatives from Kickstarter (U.S.)[6] and Crowdfunder (U.K.)[7] crowdfunding platforms. These websites are the most renowned and leading mainstream reward-based crowdfunding platforms of each of the two countries and were launched in 2009 (Kickstarter) and 2012 (Crowdfunder) (Chan et al. 2018; Chu, 2017; Frydrych et al. 2014). Both of these are generalist platforms, as they accept campaigns from diverse areas. We collected a total of 700 projects from Kickstarter and 650 projects from Crowdfunder for the period between September 2019 to December 2019, following a random sampling approach. Keeping in mind that projects usually disappear or change on these websites across time, a web-link of every project was saved in an excel file for data collection and analysis. We labeled and

6. https://www.kickstarter.com/
7. https://www.crowdfunder.co.uk/

removed some of the projects that were suspended by the website authority, having a funding target of less than $ 1000 or where the ratio of pledge over funding target were extremely large, thereby acting as outlier. We also removed projects that were canceled by the founder, or that were still active for funding. In the end, 1,000 projects were considered in the final sample, including 500 projects from Kickstarter and 500 projects from Crowdfunder.

3.2. Variables

Project success is the dependent variable in this study. A project is considered as successful if it is fully funded. We measure project success as a binary variable in the form of 1 and 0, where 1 indicates a project has achieved the funding target (successful) and 0 means unsuccessful. The platforms through which the data were collected adopt the all-or-nothing (AON) model, which refers to a crowdfunding campaign being successful if it attained or surpassed its funding target and unsuccessful otherwise.

Further, the objective of the study is to examine the role of market signals related to the crowdfunding project in the shape of media presentation (images and videos), project updates, and founder's competency in mitigating the problems of information asymmetry and determining the success of a project. Therefore, media presentation, project updates, and founder's competency are our three main explanatory variables. We measure project quality signals through media presentation as videos and images can specify the preparedness level of the founder's project, and serve as a signal of quality for the potential contributors (Wang et al. 2018). Former studies have found that media presentation in the shape of videos and images positively enhances the project rate of success in crowdfunding (Frydrych et al., 2014; Mollick, 2014). Second, we measure project updates as the total number of updates during a crowdfunding campaign (Mollick, 2014; Wessel et al. 2015). We measure founder's competency as the previous number of successful projects by the same founder before starting the current project (Courtney et al. 2017; Wessel et al. 2015).

Furthermore, we include the number of backers, the funding amount, duration, comments, URL links, and length of the context as control variables to control for any possible confounding influences following previous similar studies (Courtney et al. 2017; Wessel et al. 2015). Project success in the crowdfunding market is difficult to achieve without the support of a large quantity of backers. More backers that fund the projects increases the rate of success. The funding amount refers to the amount of money that is raised until the end of the project (Nguyen, 2017). Another control variable is the project duration. Too long duration decreases the level of confidence and trust developed by the potential backers in the project creators (Mollick, 2014), and may signal as the failure of the crowdfunding project. We also add comments as a control variable because

potential contributors usually communicate about the project in the comments section either in favor or against the project. Most of the project creators provide supplementary material in the form of texts, images, or videos by mentioning external websites in the project description. Therefore, we consider URL links as another control variable. The length of the context is the last control variable, which significantly explains the attributes of the project in the shape of advantages and disadvantages in the project description, and these types of explanations greatly improve the quality and preparedness of the project. Table 2 presents all the variables and their measurement proxies.

Table 2. Variables and Proxies

Variables	Proxies
Dependent variable	
Project success	A project is successful if it is fully funded. Dummy variable (1) for successful or fully funded and (0) for unsuccessful.
Independent variable	
Media presentation	Whether the project description includes videos and images. If there are no videos or images, value is equal to (0); If it only has image, the value is equal to (1); If it only has video, the value is equal to (2); If it has both images and videos, the value is equal to (3).
Project updates	Total number of updates during a crowdfunding campaign.
Founder's competency (past success)	The number of successful projects initiated by the founder before starting the current project.
Control variables	
No. of backers	Natural logarithm of total number of contributors who financed the project (excluding project founder)
Funding amount	The total amount of money generated through a single project*
Duration	Total number of days a single project stayed active
Comments	Natural logarithm of total number of comments during the funding activity
URL links	Natural logarithm of total number of external links shared in the project description
Length of the context	Natural logarithm of total number of words used in the project description

* Note: The UK currency was converted into U.S. dollars for comparison.

3.3. Methodology

To test the directional hypotheses, descriptive and inferential empirical analyses are applied in this study. Specifically, we adopt logistic and probit analysis in accordance with previous studies (Colombo & Grilli, 2007; Courtney et al. 2017; Mollick, 2014; Nguyen, 2017). Logistic models are used for discrete outcome modelling for binary outcomes (0 and 1) as in our case, or for three or more outcomes (multinomial logit) (Anderson et al. 2018). As we measure project success through a dichotomous variable (1 for successful or fully funded and 0 otherwise), a binary behaviour model was applied. Second, we apply probit

regression to investigate the robustness of our results. We estimate the following econometric model:

$$\text{Project success} = \alpha_0 + \beta_1 \text{ media presentation} + \beta_2 \text{ project updates} + \beta_3 \text{ founder's competency} + \text{Controls} + \varepsilon$$

where project success is a binary variable that takes the value of 1 if the project is successful and 0 otherwise. Media presentation, project updates, and founder's competency are the main explanatory variables. The vector of control variables includes the number of backers, funding amount, duration, comments, URL links, and length of the context. Finally, is the error component.

4. Empirical Analysis

4.1. Descriptive Statistics

Table 3 presents the descriptive statistics for the samples of the U.S and the U.K., separately. A total of 1,000 projects were extracted including 500 projects from the U.S. and 500 projects from the U.K. 311 (62%) projects out of 500 of the projects from the U.S. and 136 (27%) projects out of 500 from the U.K. accomplished 100% or more than the funding target. These percentages show that the fundraising rate through crowdfunding is very high in the U.S. as compared to the U.K. The average extent of media presentation of the successful (fully funded) projects in the U.S. is 2.441, while the average extent of media presentation of the successful (fully funded) projects in the U.K. is 1.294, on a 0-3 scale. These numbers show that media presentation (videos and images) is used more extensively in the U.S. as compared to the U.K. Further, the average number of project updates for fully funded projects in the U.S. is 4.772, while for partially funded projects this is 1.138. On the other hand, the average number of project updates for fully funded projects in the U.K. is 2.485, while for partially funded projects this is 0.448. Successful projects thus communicated a greater number of updates during the project campaign as compared to unsuccessful projects in both the U.S. and the U.K., in line with hypothesis 2. Furthermore, the mean of the founder's competency for fully funded projects in the U.S. is 1.145, while for partially funded projects this is 0.159, suggesting that founders with a more successful previous history (number of previous fully funded projects) have greater chances to get full funding for their current project as compared to founders with a less successful or no previous history. On the other hand, the mean of the founders' competency for fully funded projects in the U.K. is 0.015. Hence, on average, the founders in the U.S market are much more experienced as

compared to the founders in the U.K. (1.145 average fully funded projects in the U.S. versus 0.015 in the U.K.).

Moreover, the successful (fully funded) projects in the U.S. raised an average amount of $19,792, while unsuccessful (partially funded) projects raised an average amount of $1,370. On the other hand, the successful (fully funded) projects in the U.K. raised an average amount of $11,378, while unsuccessful (partially funded) projects raised an average amount of $2,179. Table 3 also shows that fully funded projects are financed by higher numbers of backers as compared to partially funded projects in both countries. Moreover, project duration is somewhat shorter for fully funded projects as compared to partially funded projects. The table furthermore shows that the number of comments, URL links and number of words (length of context) are higher for fully funded projects as compared to partially funded projects.

Table 3: Descriptive Statistics

	U.S.				U.K.			
	Partially Funded		**Fully Funded**		**Partially Funded**		**Fully Funded**	
No. of projects	189		311		364		136	
Variables	Mean	Std. dev	Mean	Std. dev	Mean	Std. dev	Mean	Std. dev
Media presentation	2.138	0.900	2.441	0.840	0.511	0.854	1.294	1.162
Project updates	1.138	2.544	4.772	5.778	0.448	1.359	2.485	4.956
Founder's competency	0.159	0.616	1.145	3.359	0.008	0.091	0.015	0.121
Number of backers	1.656	1.333	4.169	1.232	1.625	1.440	3.678	1.308
Funding amount ($)	1,370	5,611	19,792	95,316	2,179	18,413	11,378	36,411
Duration (days)	34.058	13.033	31.360	12.114	41.195	14.621	34.618	16.302
Comments	0.481	1.482	9.839	38.250	0.141	0.301	0.592	0.579
URL Links	0.857	1.764	2.135	3.504	0.116	0.250	0.237	0.327
Length of context	6.183	0.767	6.481	0.735	7.339	0.908	7.696	0.929

Note: Number of backers, Comments, URL links and Length of context are expressed in natural logarithms.

4.2. Correlation Matrix

Table 4 shows the results of pairwise correlation analysis. The upper right side of the correlation matrix refers to the U.K. crowdfunding campaigns, while the lower left side of the correlation matrix is for the U.S. crowdfunding campaigns. We observe a positive correlation of project success with media presentation, project updates, and founder's competency for both countries. All other control variables also have positive correlations with project success at 1% and 5% significance, except for duration. Duration is negatively correlated with project success for both the U.S. and the U.K. suggesting that increased duration of a project decreases its probability of success.

Table 4. Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1-Project success		0.346**	0.306**	0.122**	0.546**	0.532**	-0.191**	0.453**	0.194**	0.171**
2- Media presentation	0.168**		0.373**	0.054	0.489**	0.482**	0.055	0.427**	0.309**	0.455**
3-Project updates	0.344**	0.218**		0.052	0.465**	0.430**	-0.036	0.440**	0.293**	0.392**
4-Founder's competency	0.176**	0.014	0.173**		0.047	0.014	-0.059	0.180**	0.023	-0.006
5-No. of backers	0.693**	0.382**	0.457**	0.138**		0.925**	-0.060	0.655**	0.313**	0.406**
6-Funding amount	0.670**	0.427**	0.408**	0.120**	0.919**		-0.011	0.614**	0.312**	0.413**
7-Duration	-0.105*	-0.043	-0.027	-0.130**	-0.107*	-0.059		-0.084	0.007	0.096*
8-Comments	0.149**	0.121**	0.172**	0.014	0.345**	0.286**	0.002		0.203**	0.327**
9-URL Links	0.205**	0.201**	0.210**	0.069	0.343**	0.292**	-0.017	0.157**		0.516**
10-Length of context	0.190**	0.416**	0.331**	0.076	0.445**	0.456**	-0.067	0.172**	0.381**	

Note: *p < 0.05 (2-tailed), **p < 0.01 (2-tailed). The upper right side of the correlation matrix refers to the U.K. crowdfunding campaigns, while the lower left side of the correlation matrix is for the U.S. crowdfunding campaigns.

4.3. Regression Analysis

Table 5 presents the results of logistic regression analysis carried out for the U.S. as well as the U.K. to investigate the impact of media presentation, project updates, and founder's competency on project success. Our model explains more than 50% of the variation in project success in the U.S., supporting results from existing studies (Bao & Huang, 2017; Courtney et al., 2017; Bi et al. 2017), and between 30-50% in the U.K., thereby also supporting findings from earlier studies (Zhao, 2019). We observe a significant negative association between media presentation and project success in the U.S. (β = -0.782***) and a positive but insignificant coefficient in the U.K. This negative association opposes our hypothesis 1, which states that media presentation positively contributes to the success of crowdfunding projects. A possible explanation for this negative impact might be that the extensive use of media creates a negative signal about the project. It also suggests that media presentation in determining project quality is important; however, it can communicate negative signals about the projects and may decrease the probability of success of the projects. Possibly, for projects with extensive use of videos and images, investors may view this as a cover to hide the poor business model.

Second, we observe an insignificant association between project updates and project success in the U.S. as well as the U.K. These insignificant relationships suggest that project updates do not contribute to the success of crowdfunding campaigns in both countries. Hypothesis 2 is thus not supported. Third, we observe a positive but weakly significant association between founder's competency and project success in the U.S. (β = 0.329*) and an insignificant coefficient in the U.K. (β = -0.434) suggesting that the past success rate of the founder also plays an important role in determining the success of the current

project, but in the U.S. only. This positive association supports our hypothesis 3 and shows that past performance of the founder sends a positive signal in the market and decreases information asymmetry about the project, which in turn increases the success probability of the project.

Regarding the control variables, the results are largely in accordance with prior empirical work in the field of crowdfunding (Courtney et al. 2017; Mollick, 2014; Nguyen, 2017). We observe a positive association between the number of backers and project success in the U.S. but not in the U.K. This positive association suggests that a higher number of contributors increases the probability of project success in the U.S. We also observe a positive association between the funding amount and project success at 1% significance level for the U.S. and at 5% significance level for the U.K. Hence, a greater funding amount increases the success probability of the project. Duration is negatively and strongly significantly associated with project success for the U.K. (1% significance level) but insignificant for the U.S. URL links are not significant for both countries. Further, context length has a significantly negative association with project success in the U.S. but is insignificant for the U.K. To summarise the results for the control variables, the number of backers and the funding amount increase the probability of success for any particular project in the U.S. while funding amount and the number of comments increase the probability of success in the U.K. On the other hand, the length of the context decreases the probability of success for any particular project in the U.S. while project duration decreases the probability of success in the U.K.

Table 5. Logistic regression results explaining crowdfunding success

	U.S.		**U.K.**	
Variables	**Project success**		**Project success**	
	Coefficient	**S.E.**	**Coefficient**	**S.E.**
Media presentation	-0.782***	0.219	0.228	0.140
Project updates	0.063	0.049	0.015	0.062
Founder's competency	0.329*	0.158	-0.434	1.149
Number of backers	0.851**	0.258	0.223	0.207
Funding amount	0.781***	0.189	0.467**	0.147
Duration	-0.013	0.012	-0.040***	0.008
Comments	-0.005	0.017	0.620*	0.366
URL Links	0.015	0.070	0.339	0.492
Length of context	-0.749**	0.238	-0.240	0.165
Constant	-0.685	0.236	-1.618	1.203
Observations	500		500	
-2 Log likelihood	294.791		381.686	
McFadden's pseudo R^2	0.58		0.34	
Cox & Snell R^2	0.51		0.33	
Nagelkerke pseudo R^2	0.70		0.48	

Notes: ***p < 0.01, **p < 0.05, *p < 0.10. S.E. denotes standard errors.

4.4. Robustness and Sensitivity Analysis

First, we normalize all the variables taking the logarithm of the actual values, which reduces the kurtosis, heteroscedasticity, and skewness among the variables (Kennedy, 2003). Then, we tested the multicollinearity among the variables, and found that the variation inflation factor (VIF) of all explanatory variable is below the threshold of 10 (Ott & Longnecker, 2015). Therefore, the VIF analysis suggests that multicollinearity is not a critical issue in the current approximations. Regarding the explanatory power of the sample size, the R^2 and chi-square scores for both countries show that predictor variables explained an ample and significant portion of the variations in the dependent variables.

Further, to check the validity and predictive accuracy of our models, we validated the logistic model through probit regressions, due to its better sample properties especially in the situation of cross-sectional data (Wooldridge, 2015). We fit four probit models for the U.S. and the U.K. and present our results in Tables 6 and 7. In Models 1 and 2 we consider control variables and founder's past success as a baseline model, whereas in Model 3, we remove founder's past success and include the rest of the variables. In Model 4 we consider the complete model for validating the logit model for both countries. Finally, Model 5 in Tables 6 and 7 corresponds to the main (logit) model estimates in Table 5. After analyzing the probit results for the U.S. sample, we conclude that all the independent variables forecast the same results as predicted by the logit model in terms of significance and the signs of the coefficients (Table 6). Further, in all the four models the R^2 is very close to that of Model 5 (i.e., 0.58), which shows that logistic regression accurately forecasts project success in the reward-based crowdfunding market. For the U.K. sample, results of the probit regressions are also similar to logit (Table 7). There are only small differences for media presentation and the number of comments (compare Models 4 and 5). Both for logit and probit, the pseudo R^2 is 0.34, indicating a good model fit. Accordingly, we have demonstrated that the probit findings remain directionally consistent with those from the logistic model for both countries.

Table 6: Robustness check for the U.S.

Variables	**Project Success**				
	Model 1 (Probit)	**Model 2 (Probit)**	**Model 3 (Probit)**	**Model 4 (Probit)**	**Model 5 (Logit)**
Media presentation			-0.436***	-0.404**	-0.782***
			(0.116)	(0.117)	(0.219)
Project updates			0.035	0.021	0.063
			(0.024)	(0.023)	(0.049)
Founder's competency		0.184*		0.147*	0.329*
		(0.081)		(0.080)	(0.158)
No. of backers	0.506***	0.501***	0.438**	0.449**	0.851**
	(0.133)	(0.135)	(0.140)	(0.142)	(0.258)
Funding amount	0.317***	0.324***	0.416***	0.414***	0.781***
	(0.090)	(0.093)	(0.098)	(0.100)	(0.189)
Duration	-0.005	-0.004	-0.007	-0.006	-0.013
	(0.006)	(0.006)	(0.006)	(0.006)	(0.012)
Comments	0.007	0.001	0.009	-0.006	-0.005
	(0.022)	(0.019)	(0.027)	(0.016)	(0.017)
URL Links	0.016	0.010	0.014	0.008	0.015
	(0.036)	(0.036)	(0.036)	(0.036)	(0.070)
Length of context	-0.511***	-0.530***	-0.420**	-0.432**	-0.749**
	(0.122)	(0.127)	(0.131)	(0.133)	(0.238)
Observations	500	500	500	500	500
Pseudo R^2	0.49	0.51	0.52	0.53	0.58

Note: ***p < 0.01, **p < 0.05, *p < 0.10. Standard errors between brackets.

Table 7: Robustness check for the U.K.

Variables	**Project Success**				
	Model 1 (Probit)	**Model 2 (Probit)**	**Model 3 (Probit)**	**Model 4 (Probit)**	**Model 5 (Logit)**
Media presentation			0.146*	0.146*	0.228
			(0.081)	(0.081)	(0.140)
Project updates			0.011	0.011	0.015
			(0.034)	(0.034)	(0.062)
Founder's competency		-0.263		-0.229	-0.434
		(0.658)		(0.646)	(1.149)
No. of backers	0.168	0.168	0.145	0.145	0.223
	(0.116)	(0.116)	(0.118)	(0.118)	(0.207)
Funding amount	0.264**	0.266**	0.257**	0.259**	0.467**
	(0.836)	(0.083)	(0.083)	(0.084)	(0.147)
Duration	-0.020***	-0.021***	-0.021***	-0.021***	-0.040***
	(0.004)	(0.004)	(0.083)	(0.004)	(0.008)
Comments	0.334*	0.331	0.269	-0.267	0.620*
	(0.196)	(0.196)	(0.200)	(0.200)	(0.366)
URL Links	0.163	0.166	0.113	0.116	0.339
	(0.275)	(0.275)	(0.279)	(0.279)	(0.492)
Length of context	-0.100	-0.101	-0.144	-0.145	-0.240
	(0.090)	(0.091)	(0.193)	(0.093)	(0.165)
Observations	500	500	500	500	500
Pseudo R^2	0.33	0.33	0.34	0.34	0.34

Note: ***p < 0.01, **p < 0.05, *p < 0.10. Standard errors between brackets.

5. Discussion and Conclusions

Crowdfunding has received generous attention from both profit and non-profit business ventures due to its enormous potential to not only boost financial sustainable development, but also its direct involvement with backers or donors. The whopping growth in such a small-scale fundraising mechanism has been certified as a worldwide trend. The informational mechanism of crowdfunding was introduced a decade ago and received nominal attention, however, few attempts have been made by researchers to probe the crowdfunding informational mechanism. In particular, investigating project success in relation to various market signals under the two famous theoretical foundations of information asymmetry theory and signaling theory while using a cross-country comparison approach, was rare. This is exactly the contribution of our paper.

This study investigates different dimensions contributing to the success of reward-based crowdfunding campaigns in the U.K. and the U.S. First, the study examines the signals related to the project (such as media presentation and updates), because such signals given by the founder of the project about their product/service can be instrumental in determining the decision of the backers for funding any particular project. Our results indicate that extensive use of media communicates negative signals about the project and decreases the success probability of the projects in the U.S.; however, it does not have any role in the U.K. Second, we investigate the impact of project updates and find no significant association of project updates with project success in both the U.S. and the U.K. Third, the study investigates the signals related to founder's competency, in particular the founder's past success. Our findings revealed that a successful previous track record of the project owners not only signals their credibility, but also stimulates trust, which strongly influences the backer's decision in the provision of financial support to any particular campaign in the U.S. This finding echoes with previous research (Usman et al. 2019), which showed that founder's competency signals significantly mitigate the information asymmetric issue and have a positive effect on crowdfunding success. On the other hand, the results for the U.K. state that running multiple projects at the same time or launching a second project before fulfilling your first one does not contribute to the success of the current project. A possible explanation may be that the information related to the founder's past success is frequently available on the U.S. sites, but it is less often available on the U.K. crowdfunding sites. This, in turn, is likely related to another remarkable finding of this study, namely that, in our U.K. sample, almost all founders of a reward-based crowdfunding campaign are first-time campaigners, i.e., they have no previous experience on the crowdfunding market. This suggests that the crowdfunding market is a younger phenomenon in the U.K., compared to the U.S. where the average founder of a successful project initiated at least one successful project before (see Table 3).

Most of the literature regarding crowdfunding is based on three different perspectives, namely entrepreneurship, business ventures, and computer-human

interaction, whereas the current study examines the crowdfunding mechanisms between two countries in the informational context. Therefore, we are confident that this study may have numerous implications for academia, policymakers, and for the wider audiences and practitioners. The findings endorse that the use of images and videos to communicate project quality should be moderate. However, founders should communicate the information about the founder's past success in the project description to decrease the problem of information asymmetry with backers and to elevate the backer's trust to pledge in a project.

This study has some limitations that can be addressed in further research work. First, the findings of this study are context-specific, they revealed the behavioural attributes of the U.S. and the U.K., and both platforms are based on one type of crowdfunding model, which is reward-based and AON ("all-or-nothing"). Thus, we cannot predict whether the results are suitable to other contexts and models. Second, future research can also incorporate more variables to the model's taxonomy such as calculating the network size by considering the social media channels, the founder's gender, the board members' level of education and experience, country choice for business and the type of product. Third, the study compared two culturally different countries by collecting data from crowdfunding websites. In addition, our data is limited to one platform per each country, because the publishing policies of each website may differ, so that inclusion of different platforms within a single country might have confounded the results. Nevertheless, future researchers are encouraged to consider more diverse platforms for data collection to corroborate the results from the present study.

Overall, we believe our study has made an important contribution to extant knowledge in the field of reward-based crowdfunding. In particular, we think our finding that the determinants of project success may differ in different country contexts, is particularly relevant. Future research should investigate the interplay between country context and success determinants of crowdfunding campaigns.

References:

Ahlers, G.K., Cumming, D., Günther, C., & Schweizer, D. (2015), "Signaling in Equity Crowdfunding", *Entrepreneurship Theory and Practice, 39*(4), 955-980.

Anderson, J.C., Hernandez, S., Jessup, E.L., & North, E. (2018), "Perceived Safe and Adequate Truck Parking: A Random Parameters Binary Logit Analysis of Truck Driver Opinions in the Pacific Northwest", *International Journal of Transportation Science and Technology, 7*(1), 89-102.

Anglin, A.H., Short, J.C., Drover, W., Stevenson, R.M., McKenny, A.F., & Allison, T.H. (2018), "The Power of Positivity? The Influence of Positive Psychological Capital Language on Crowdfunding Performance", *Journal of Business Venturing, 33*(4), 470-492.

Bao, Z., & Huang, T. (2017), "External Supports in Reward-Based Crowdfunding Campaigns: A Comparative Study Focused on Cultural and Creative Projects", *Online Information Review*, *41*(5), 626-642.

Barbi, M., & Bigelli, M. (2017), "Crowdfunding Practices In and Outside the US", *Research in International Business and Finance*, *42*, 208-223.

Beck, T., & Demirguc-Kunt, A. (2006), "Small and Medium-Size Enterprises: Access to Finance as a Growth Constraint", *Journal of Banking & Finance, 30*(11), 2931-2943.

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2014), "Crowdfunding: Tapping the Right Crowd", *Journal of Business Venturing, 29*(5), 585-609.

Berger, A.N., & Udell, G.F. (1998), "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle", *Journal of Banking and Finance, 22*(6), 613-673.

Bi, S., Liu, Z., & Usman, K. (2017), "The Influence of Online Information on Investing Decisions of Reward-Based Crowdfunding", *Journal of Business Research, 71*, 10-18.

Binks, M.R., Ennew, C.T., & Reed, G.V. (1992), "Information Asymmetries and the Provision of Finance to Small Firms", *International Small Business Journal, 11*(1), 35-46.

Block, J., Hornuf, L., & Moritz, A. (2018), "Which Updates During an Equity Crowdfunding Campaign Increase Crowd Participation?", *Small Business Economics, 50*(1), 3-27.

Burtch, G., Ghose, A., & Wattal, S. (2014), "Cultural Differences and Geography as Determinants of Online Prosocial Lending", *MIS Quarterly, 38*(3), 773-794.

Cassar, G. (2004), "The Financing of Business Start-Ups", *Journal of Business Venturing, 19*(2), 261-283.

Chan, C.R., Park, H.D., Patel, P., & Gomulya, D. (2018), "Reward-Based Crowdfunding Success: Decomposition of the Project, Product Category, Entrepreneur, and Location Effects", *Venture Capital, 20*(3), 285-307.

Chen, X.-P., Yao, X., & 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.

Cho, M., & Kim, G. (2017), "A Cross-Cultural Comparative Analysis of Crowdfunding Projects in the United States and South Korea", *Computers in Human Behavior, 72*, 312-320.

Chu, D.D. (2017), "A Comparative Study on Crowdfunding in the United States and the United Kingdom", *Emporium, 1*(1), 11-26.

Clauss, T., Breitenecker, R.J., Kraus, S., Brem, A., & Richter, C. (2017), "Directing the Wisdom of the Crowd: The Importance of Social Interaction Among Founders and the Crowd during Crowdfunding Campaigns", *Economics of Innovation and New Technology*, *27*(8), 731-751.

Colombo, M.G., & Grilli, L. (2007), "Funding Gaps? Access to Bank Loans by High-Tech Start-Ups", *Small Business Economics, 29*(1-2), 25-46.

Connelly, B.L., Certo, S.T., Ireland, R.D., & Reutzel, C.R. (2011), "Signaling Theory: A Review and Assessment", *Journal of Management, 37*(1), 39-67.

Courtney, C., Dutta, S., & Li, Y. (2017), "Resolving Information Asymmetry: Signaling, Endorsement, and Crowdfunding Success", *Entrepreneurship: Theory and Practice*, *41*(2), 265-290.

Cumming, D.J., Leboeuf, G., & Schwienbacher, A. (2020), "Crowdfunding Models: Keep-it-All vs. All-or-Nothing", *Financial Management*, *49*(2), 331-360.

Daskalakis, N., & Yue, W. (2018), "Users' Perceptions of Motivations and Risks in Crowdfunding with Financial Returns", *International Review of Entrepreneurship*, 16(3), 427-454.

De Larrea, G.L., Altin, M., & Singh, D. (2019), "Determinants of Success of Restaurant Crowdfunding", *International Journal of Hospitality Management*, *78*, 150-158.

Duan, W., Gu, B., & Whinston, A.B. (2009), "Informational Cascades and Software Adoption on the Internet: An Empirical Investigation", *MIS Quarterly*, *33*(1), 23-48.

European Crowdfunding Network. (2014), *Review of Crowdfunding Regulation. Interpretations of existing regulation concerning crowdfunding in Europe, North America and Israel*: A Publication of the Tax & Legal Work Group of the European Crowdfunding Network. http://eurocrowd.winball2.de/wp-content/blogs.dir/sites/85/2014/12/ECN-Review-of-Crowdfunding-Regulation-2014.pdf

Frydrych, D., Bock, A.J., Kinder, T., & Koeck, B. (2014), "Exploring Entrepreneurial Legitimacy in Reward-Based Crowdfunding", *Venture Capital, 16*(3), 247-269.

Greiner, M.E., & Wang, H. (2010), "Building Consumer-to-Consumer Trust in E-Finance Marketplaces: An Empirical Analysis", *International Journal of Electronic Commerce, 15*(2), 105-136.

Harrison, R.T., & Mason, C.M. (2000), "Venture Capital Market Complementarities: The Links Between Business Angels and Venture Capital Funds in the United Kingdom", *Venture Capital, 2*(3), 223-242.

Hong, Y., Hu, Y., & Burtch, G. (2018), "Embeddedness, Prosociality, and Social Influence: Evidence from Online Crowdfunding", *MIS Quarterly, 42*(4), 1211-1224.

Iurchenko, D., Petty, J.S., Shang, C., & Block, J. (2020), "Enabling Online Equity Crowdfunding: Understanding the Legal Approval Process Across Four Countries", *International Review of Entrepreneurship*, 18(2), 221-254.

Jegeleviciute, S., & Valanciene, L. (2015), "Comparative Analysis of the Ways Crowdfunding is Promoted", *Procedia-Social and Behavioral Sciences, 213*, 268-274.

Kaartemo, V. (2017), "The Elements of a Successful Crowdfunding Campaign: A Systematic Literature Review of Crowdfunding Performance", *International Review of Entrepreneurship*, 15(3), 291-318.

Kennedy, P. (2003), *A Guide to Econometrics*, Cambridge, MA: The MIT Press.

Kirmani, A., & Rao, A.R. (2000), "No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality", *Journal of Marketing, 64*(2), 66-79.

Kromidha, E. (2015), "A Comparative Analysis of Online Crowdfunding Platforms in USA, Europe and Asia". Paper Presented at the eChallenges e-2015 Conference.

Kunz, M.M., Bretschneider, U., Erler, M., & Leimeister, J.M. (2017), "An Empirical Investigation of Signaling in Reward-Based Crowdfunding", *Electronic Commerce Research, 17*(3), 425-461.

Kuppuswamy, V., & Bayus, B.L. (2018), "Crowdfunding Creative Ideas: The Dynamics of Project Backers", In: D. Cumming and L. Hornuf (eds.), *The Economics of Crowdfunding: Startups, Portals and Investor Behavior* (pp. 151-182). Cham: Palgrave Macmillan.

Liang, X., Hu, X., & Jiang, J. (2020), "Research on the Effects of Information Description on Crowdfunding Success within a Sustainable Economy — The Perspective of Information Communication", *Sustainability*, *12*(2), 650.

Lipman, F.D. (2016), *New Methods of Financing Your Business in the United States: A Strategic Analysis*, Singapore: World Scientific.

Luo, X., & Zhang, J. (2013), "How Do Consumer Buzz and Traffic in Social Media Marketing Predict the Value of the Firm?", *Journal of Management Information Systems*, *30*(2), 213-238.

Mason, C., Botelho, T., & Harrison, R. (2019), "The Changing Nature of Angel Investing: Some Research Implications", *Venture Capital, 21*(2-3), 177-194.

Mollick, E. (2014), "The Dynamics of Crowdfunding: An Exploratory Study", *Journal of Business Venturing, 29*(1), 1-16.

Moy, N., Chan, H.F., & Torgler, B. (2018), "How Much is Too Much? The Effects of Information Quantity on Crowdfunding Performance", *PLoS ONE*, *13*(3), e0192012.

Nguyen, T. (2017), *Crowdfunding in Vietnam: The Impact of Project and Founder Quality on Funding Success*, Master Thesis, University of Twente, the Netherlands.

Ott, R.L., & Longnecker, M.T. (2015), *An Introduction to Statistical Methods and Data Analysis (7th Edition)*, Boston, MA: Cengage Learning.

Petitjean, M. (2018), "What Explains the Success of Reward-Based Crowdfunding Campaigns as they Unfold? Evidence From the French Crowdfunding Platform KissKissBankBank", *Finance Research Letters*, *26*, 9-14.

Petruzzelli, A.M., Natalicchio, A., Panniello, U., & Roma, P. (2019), "Understanding the Crowdfunding Phenomenon and its Implications for Sustainability", *Technological Forecasting and Social Change, 141*(4), 138-148.

Piva, E., & Rossi-Lamastra, C. (2018), "Human Capital Signals and Entrepreneurs' Success in Equity Crowdfunding", *Small Business Economics, 51*(3), 667-686.

Plummer, L.A., Allison, T.H., & Connelly, B.L. (2016), "Better Together? Signaling Interactions in New Venture Pursuit of Initial External Capital", *Academy of Management Journal, 59*(5), 1585-1604.

Profatilov, D.A., Bykova, O.N., & Olkhovskaya, M.O. (2015), "Crowdfunding: Online Charity or a Modern Tool for Innovative Projects Implementation?", *Asian Social Science, 11*(3), 146-151.

Spence, M. (1977), "Job Market Signaling", *Quarterly Journal of Economics, 87*(3), 355-374.

Statista. (2018), "Crowdfunding -- United Kingdom / Statista Market Forecast", https://www.statista.com/outlook/335/156/crowdfunding/united-kingdom

Steigenberger, N., & Wilhelm, H. (2018), "Extending Signaling Theory to Rhetorical Signals: Evidence from Crowdfunding", *Organization Science, 29*(3), 529-546.

Technavio. (2016), "Global Crowdfunding Market Geographical Segmentation", https://mms.businesswire.com/media/20170814005545/en/606718/5/Crowdfunding_Market.jpg?download=1

Thies, F., Wessel, M., & Benlian, A. (2016), "Effects of Social Interaction Dynamics on Platforms", *Journal of Management Information Systems*, *33*(3), 843-873.

Tirole, J. (2010), *The Theory of Corporate Finance,* Princeton, NJ: Princeton University Press.

Transparent Hands. (2018), "List of Top 10 Fundraising Websites in Pakistan", https://www.transparenthands.org/list-of-top-10-fundraising-websites-in-pakistan/

Udell, G.F. (2015), "SME Access to Intermediated Credit: What Do We Know and What Don't We Know", In: *Proceedings of the Small Business Conditions and Finance Conference*, pp. 61-109.

Usman, S.M., Bukhari, F.A.S., Usman, M., Badulescu, D., & Sial, M.S. (2019), "Does the Role of Media and Founder's Past Success Mitigate the Problem of Information Asymmetry? Evidence From a UK Crowdfunding Platform", *Sustainability, 11*(3), 692.

Vasileiadou, E., Huijben, J., & Raven, R. (2016), "Three is a Crowd? Exploring the Potential of Crowdfunding for Renewable Energy in the Netherlands", *Journal of Cleaner Production, 128*, 142-155.

Wang, N., Li, Q., Liang, H., Ye, T., & Ge, S. (2018), "Understanding the Importance of Interaction Between Creators and Backers in Crowdfunding Success", *Electronic Commerce Research and Applications, 27*(1), 106-117.

Wooldridge, J.M. (2015), *Introductory Econometrics: A Modern Approach*, Toronto: Nelson Education.Wessel, M., Thies, F., & Benlian, A. (2015), "The Effects of Relinquishing Control in Platform Ecosystems: Implications From a Policy Change on Kickstarter", Paper presented at Thirty Sixth International Conference on Information Systems (ICIS), Fort Worth, TX, 2015.

Xu, A., Yang, X., Rao, H., Fu, W.-T., Huang, S.-W., & Bailey, B.P. (2014), "Show Me the Money! An Analysis of Project Updates During Crowdfunding Campaigns", In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 591-600.

Yeh, T.L., Chen, T.Y., & Lee, C.C. (2019), "Investigating the Funding Success Factors Affecting Reward-Based Crowdfunding Projects", *Innovation: Organization and Management*, *21*(3), 466-486.

Zhang, B., Ziegler, T., Mammadova, L., Johanson, D., Gray, M., & Yerolemou, N. (2018), "The 5th UK Alternative Finance Industry Report", Cambridge, UK: Cambridge Centre for Alternative Finance.

Zhao, Y. (2019), *Understanding UK Rewards-based Crowdfunding as an Alternative Source of Entrepreneurial Finance*, Doctoral Dissertation, University of Chester, UK.

Zheng, H., Li, D., Wu, J., & Xu, Y. (2014), "The Role of Multidimensional Social Capital in Crowdfunding: A Comparative Study in China and US", *Information & Management, 51*(4), 488-496.