Fall 10-17-2022

The impact of signal of project quality and creator's credibility on crowdfunding performance based on fsQCA method

Yuhong Luo
Shenzhen University, China, luoyuhong2020@email.szu.edu.cn

Nianjiao Peng
Shenzhen University, China, pengnianjiao2019@email.szu.edu.cn

Xiaona Li
Shenzhen University, China, lixiaona2021@email.szu.edu.cn

Yuanyue Feng
Shenzhen University, China, yuanyuef@szu.edu.cn

Luo, Y. H., Peng, N. J., Li, X. N., & Feng Y. Y. (2022). The impact of signal of project quality and creator's credibility on crowdfunding performance based on fsQCA method. In Li, E.Y. *et al.* (Eds.) *Proceedings of The International Conference on Electronic Business, Volume 22* (pp. 506-514). ICEB'22, Bangkok, Thailand, October 13-17, 2022

The impact of signal of project quality and creator's credibility on crowdfunding performance based on fsQCA method

Yuhong Luo [1]
Nianjiao Peng [2]
Xiaona Li [3]
Yuanyue Feng [4,*]

*Corresponding author
[1] Postgraduate student, Shenzhen University, Shenzhen, China, luoyuhong2020@email.szu.edu.cn
[2] Ph.D. student, Shenzhen University, Shenzhen, China, pengnianjiao2019@email.szu.edu.cn
[3] Postgraduate student, Shenzhen University, Shenzhen, China, lixiaona2021@email.szu.edu.cn
[4] Professor, Shenzhen University, Shenzhen, China, yuanyuef@szu.edu.cn

ABSTRACT

Crowdfunding is becoming increasingly important for entrepreneurs to raise funds in recent years. Whilst research has shown different influencing factors of crowdfunding performance as signals which can convey information, how signals work together remains underexplored. This study, which is based on a Chinese product crowdfunding platform, uses fsQCA to examine how the signal of project quality (number of likes project received, number of updates, number of description words) and creator's credibility (number of likes creator received, experience as a backer, experience as a creator) influent crowdfunding performance. We crawled 381 samples from MoDian crowdfunding platform. The results identify five configurations for high financing performance and five configurations for low financing performance. Our findings enrich the literature of crowdfunding performance based on signal theory and make practical contributions to project creators.

Keywords: Crowdfunding, Signaling theory, fuzzy-set Qualitative comparative analysis (fsQCA)..

INTRODUCTION

Crowdfunding is defined as fundraisers (or project creators) raising funds from backers through crowdfunding platforms to support personal activities, public welfare projects or business organizations (Ahlers et al., 2015). Because of low financing cost, rich financing platform and high financing efficiency, it is favored by entrepreneurs and provides a new method to solve the financing difficulties for small and micro enterprises. The number of Chinese crowdfunding platforms has decreased sharply since 2016. However, the number of participants and financing amount of crowdfunding projects are increasing year by year. In the first half of 2018, 48935 projects were launched. Among them, the number of successful projects was 40274, and the financing amount of successful projects reached 13.711 billion yuan, an increase of 24.46% over the first half of 2017. The fact is that crowdfunding industries are booming in China with large scale and rapid growth.

This study aims to examine the crowdfunding performance of product crowdfunding platforms. The life cycle of product crowdfunding includes three stages: project preparation, financing and product delivery (Wang et al., 2021). In the stage of project preparation, the project creator needs to determine the project name, description, target amount and duration, etc., so as to show the project quality and the creator's credibility. The challenge is that there exists information asymmetry between creators and backers. On the one hand, unprofessional supporters are unable to accurately assess the potential risks and benefits of the projects and face huge investment risks. On the other hand, creators face the challenge of communicating credible information about project quality and personal capabilities to backers. Therefore, it is crucial to find effective ways to reduce information asymmetry and improve crowdfunding performance.

Although researchers are increasingly focusing on the role of different signals in crowdfunding performance (Reichenbach & Walther, 2021), how various signaling factors interact to determine crowdfunding performance remains limited. The relevant research on the influencing factors of crowdfunding success only regards the signals as simple additive components, ignoring the interactive effects among them. This study explores the impact of different signal combinations on crowdfunding performance by using fsQCA. We crawled 381 cases from the MoDian crowdfunding platform and analyzed the interactions among signals of project quality and the creator's credibility. The results revealed five configurations of high financing performance and five configurations of low financing performance.

Our study contributes to the literature in several aspects. First, we adopt fsQCA to explore the relationship between configurations of different signals and high crowdfunding performance. It shows how to combine the signals of project quality (i.e., number of likes project received, number of updates, number of description words) and creator's credibility (i.e., number of likes creator received, experience as a backer, experience as a creator) into a variety of configurations in different ways to achieve high crowdfunding performance. Second, this study expands research on crowdfunding performance based on signal

theory by setting out four propositions. Third, our findings offer practical implications for project creators on how to leverage different signals to achieve high financing performance.

The rest of this paper is organized as follows. Section 2 reviews relevant literature of information asymmetry in crowdfunding and signaling theory, and section 3 presents the research method. Section 4 reports the empirical findings. Section 5 discusses our findings and set out our propositions. Finally, we outline the contributions, limitations and directions for future research.

THEORETICAL BACKGROUND

Information Asymmetry in Crowdfunding

Information asymmetry occurs when individuals have information that others cannot easily obtain for exchange (Cosh et al., 2005). It is a normal problem for entrepreneurs when financing, which may prevent the formation of exchange relationship. Because insiders usually have more information about the quality of the company than outsiders.

The information asymmetry in the crowdfunding platform will make it difficult for potential investors to identify high-quality project investments. Compared with traditional investments (banks, venture capitalists or angel investors), product crowdfunding investors are usually non-professionals and lack a full understanding of the industry, technology, management and investment. Colombo et al. (2015)found that potential backers' doubts about creators' ability and credibility are one of the main sources of uncertainty in crowdfunding. Backers cannot identify project quality and creators' credibility when investing without proper information.

Signaling Theory

Signals are the activities or attributes of individuals in the market, which can change the beliefs of other individuals and reduce information asymmetry. In crowdfunding, signals can reduce the uncertainty perceived by decision-makers, so as to persuade them to support a project with their investment (O. Colombo, 2021).

Specifically, project creators can send signals related to project quality and creators' credibility, such as project description, pictures, videos and so on. Investors will infer the unobservable quality of their enterprises from the observable attributes, and those projects that fail to provide such information should be evaluated as poor prospects. Researchers also try to identify different signals related to project quality or creators' credibility, which is effective in attracting backers and improving financing performance (Bi et al., 2017).

Signals of project quality

Before the project starts, the project creator needs to make a series of preparations. The signals of project preparation can reflect the efforts of the creator in project design and project quality. Therefore, sufficient preparations are conducted for the project creator to obtain funds from backers. In the design process of crowdfunding projects, project creators can reduce information asymmetry and convince backers by using text, pictures, videos and other signals. Research suggests providing detailed project descriptions can help the project achieve higher financing performance. The integrity of project description can be reflected by the number of words and the richness of contents (Liang et al., 2020).

Project updates play a crucial role in information exchange between project creators and backers. Communicating the progress of the project by project updates can make backers feel trust, excitement and expectation for the project (Usman et al., 2020). In addition, project updates also mean that the project creator has strict control over the project. Therefore, project updates help to reduce the information asymmetry between project creators and backers.

The number of likes project received is the positive feedback of the backers for the project. When making decisions on purchase and investment, social networking platform users largely rely on electronic word-of-mouth such as online comments and the number of likes. Studies show that online product reviews are usually accompanied by signals agreed by reviewers, such as the number of likes, and most respondents believe that the number of likes project received is very important to them when viewing product information (Jiménez & Mendoza, 2013).

Signals of creators' credibility

The experience as a creator enables the project creator to deeply understand the operation of crowdfunding, arrange the resources required by the project, and meet the needs and expectations of backers. Research suggests that project creators with launching experience can show the signals of low project risks and achieve higher financing performance than those without launching experience (Wang et al., 2021b) .

The experience as a backer allows project creator to develop a shared identity with other backers on the crowdfunding platform, which can affect the financing performance of crowdfunding. Mutual identification might induce individuals to provide financial support or help promote their projects. Backer experience might allow entrepreneurs to learn good practices that can be adopted in their crowdfunding projects, which leads to mutual help from other project creators. Indeed, empirical evidences suggest that there is a positive correlation between backer experience of project creators and crowdfunding financing performance (J.-Y. Kim & Miner, 2007).

The social network connections of the project creator can convey additional information to potential backers of the project, reduce information asymmetry and improve crowdfunding financing performance (Mollick, 2014). On the crowdfunding platform, the degree of social network connections of the project creator is reflected in the number of fans and likes, which reflects the attention of potential supporters to the project. Close social network connections can enhance creators' credibility, which can attract more potential backers especially their fans to support their projects.

METHOD

Qualitative comparative analysis (QCA) is an empirical analysis method which can be used in small or large sample cases. QCA focus on the combination of conditions related to product crowdfunding performance (high or low). Regression analysis pays attention to the impact of a single variable on the results, when there is multiple collinearity between variables, it may cause error estimation of independent variables. Compared with regression analysis, QCA can explore the mechanism between variables and results, and provide multiple conditional configurations that lead to certain results. In this study, we adopt fuzzy set qualitative comparative analysis (fsQCA), which can calibrate continuous values using values between 0 and 1.

Sample and Data Collection

The data in this study were retrieved from a Chinese product crowdfunding platform named MoDian, which is a representative crowdfunding platform focusing on cultural and creative products. We crawled crowdfunding campaigns data from 2015 to 2021 on this crowdfunding platform. In order to eliminate the impact of different target amounts and ensure the comparability of samples, we chose projects with the target amount of 10000. To keep the integrity of the data and the validity of the cases, the cases with extreme value and default value are removed. Finally, 381 cases remain.

Outcome, Causal Conditions and Calibration

In this study, we adopt the signaling theory as the theoretical perspective to determine the research variables (Chen et al., 2018). According to signaling theory, the framework in this study was constructed with project quality and creators' credibility. The outcome is defined as crowdfunding performance and measured as the ratio between the amount of funds raised in the crowdfunding round and the target amount. To explore the conditions influencing the crowdfunding performance from the existing literature, six conditions were extracted: three refer to the project quality (number of likes project received, number of updates, number of description words), and three relate to the creators' credibility (number of likes creator received, experience as a backer, experience as a creator). The descriptive statistics of the samples are shown in Table I.

Table 1: Descriptive statistics and calibration.

	Variables	Description	Mean	S. D	Min	Max
	Crowdfunding Performance (CP)	The ratio between the amount of funds raised in the crowdfunding round and the target amount	3.051	2.243	1.001	10.839
Signals of Project Quality	Project Like (PL)	The number of likes project received	498.496	312.947	86	1624
	Update (UP)	The number of updates	8.255	6.730	0	51
	Project Description (PD）	The number of description words	100.499	20.159	40	159
Signals of Creators' Credibility	Creator Like (CL)	The number of likes creator received	138.000	239.446	0	1063
	Experience as a Backer (CB)	Experience as a backer	5.084	13.914	0	72
	Experience as a Creator (CC)	Experience as a creator	5.743	8.098	1	43

Source: This study.

To use fsQCA, we need to calibrate the original data. Following (Ragin, 2009), the calibration was based on direct method. In this study, the full membership was defined as the 75th percentile, the cross-over point as the 50th percentile, and the full non-membership point was defined by the 25th (De Crescenzo et al., 2020). Table 2 presents the thresholds for the calibration.

Table 2: Calibration for outcomes and causal conditions.

Variables	Full membership	Cross-over point	Full non-membership
Crowdfunding Performance (CP)	3.911	2.248	1.323

Project Like (PL)	658	415	266
Update (UP)	10	7	4
Project Description (PD)	118	106	89
Creator Like (CL)	142	13	2
Experience as a Backer (CB)	3	1	0
Experience as a Creator (CC)	6	2	1

Source: This study.

RESULTS

Analysis of Necessary Conditions

We used fsQCA 3.0 software for analysis. The first step is to examine whether the presence or absence (~) of any factors are necessary to achieve high or low crowdfunding performance. Necessary conditions mean conditions that must occur to achieve the outcome. A condition is considered necessary if the consistency is higher than 0.9 (Greckhamer et al., 2018). As shown in Table 3, there is no necessary condition for the outcome because every consistency score is below the threshold of 0.9.

Table 3: Analysis of necessary conditions.

		High crowdfunding performance		**Low crowdfunding performance**	
	Causal Condition	**Consistency**	**Coverage**	**Consistency**	**Coverage**
Signals of project quality	Project Like	0.759	0.768	0.350	0.354
	~Project Like	0.362	0.357	0.771	0.763
	Update	0.648	0.667	0.414	0.427
	~Update	0.443	0.430	0.677	0.659
	Project Description	0.540	0.535	0.562	0.559
	~Project Description	0.555	0.558	0.532	0.537
Signals of creators' credibility	Creator Like	0.559	0.593	0.492	0.523
	~Creator Like	0.551	0.520	0.617	0.584
	Experience as a Backer	0.553	0.607	0.456	0.502
	~Experience as a Backer	0.546	0.500	0.643	0.591
	Experience as a Creator	0.625	0.598	0.522	0.500
	~Experience as a Creator	0.477	0.499	0.580	0.608

Note: The symbol (~) indicates the absence of the condition.

Analysis of Sufficient Conditions

We filtered the truth table by setting relevant thresholds. First, we used a frequency threshold of 1, ensuring that there is at least one representative case for each configuration determined by fsQCA. Secondly, the raw consistency threshold was set to 0.8 which is a recommended standard (Ragin, 2009). Consistency indicates the score of the configuration in the results. Finally, we used a PRI consistency threshold of 0.75 for high crowdfunding performance, and 0.8 for low crowdfunding performance, which are greater than 0.75 (Park et al., 2020).

There are three types of solutions: complex, intermediate and parsimonious solutions. Based on the above simplified truth table for standardized analysis, the three types of solutions were totally the same. Since the number of samples in this study is large, the cases can cover all combinations, and there was no logical remainder included in the standard analysis. The analysis of sufficient conditions yielded two models: one for high crowdfunding performance and one for low crowdfunding performance. The solution consistency of high crowdfunding performance is 0.869 (solution coverage is 0.448), and the solution consistency of low crowdfunding performance is 0.889 (solution coverage is 0.451). Both models are good, with a solution consistency of more than 0.75 and a solution coverage of more than 0.4 (Ragin, 2009).

Table 4 shows the results from sufficiency analysis following the notation introduced in the study of (Courtney et al., 2017): the black circle (●) indicates the existence of the condition, the circle with a cross-out (⊗) indicates the absence of the condition, and the blank indicates that the configuration condition can be either present or absent.

Table 4: Analysis of sufficient conditions.

		High crowdfunding performance					**Low crowdfunding performance**				
		A1a	A1b	A2a	A2b	A3	B1a	B1b	B2	B3	B4
Signals of project quality	Project Like	●	●	●	●	●	⊗	⊗	⊗	⊗	⊗
	Update	●	●	●	●		⊗	⊗	●	⊗	⊗
	Project Description		⊗	●	●	⊗		⊗		●	●
Signals of creators' credibility	Creator Like	⊗	⊗	⊗	⊗	●		⊗	●		●
	Experience as a Backer		●	⊗		●	⊗	●	⊗	⊗	
	Experience as a Creator	●			●	●	●	⊗	⊗		●
	Raw coverage	0.141	0.106	0.139	0.204	0.205	0.216	0.086	0.093	0.243	0.158
	Unique coverage	0.010	0.021	0.067	0.077	0.110	0.058	0.033	0.042	0.094	0.055
	Consistency	0.895	0.889	0.875	0.877	0.907	0.903	0.911	0.934	0.880	0.912
	Solution coverage	0.448					0.451				
	Solution consistency	0.869					0.889				

Note: The black circle (●) indicates the existence of the condition, the circle with a cross-out (⊗) indicates the absence of the condition, and blank cells indicate that the presence or absence of the condition doesn't matter. These are "don't care" conditions.

Based on the signaling theory, we identified five conditional configurations of high crowdfunding performance and five conditional configurations of low crowdfunding performance respectively.

High crowdfunding performance

Configuration A1a (consistency: 0.895, coverage: 0.141) shows that when the project creator receives fewer likes, but the project creator has rich experience in launching, and the project receives more praise and project updates, the project financing performance will be higher. Configuration A1b (consistency: 0.889, coverage: 0.106) implies that when the creator has rich experience as a backer, and the number of likes and updates of the project are high, even if the number of project description words and likes creator received are less, the crowdfunding performance is also high. Comparing configuration A1a with configuration A1b, both conditional configurations have a high number of likes project received and updates, and the signals of the creators' credibility are different. The results show that the experience as a backer and experience as a creator are substitutable factors.

Proposition 1: To achieve high crowdfunding performance in a project with a high number of project likes and updates, signals of experience as a backer and experience as a creator are substitutable factors.

Configuration A2a (consistency: 0.875, coverage: 0.139) indicates that when the creator receives a low number of likes and does not have a rich experience as a backer, if the project possesses a high number of likes, updates and description words, it can achieve high financing performance.

Compared with configuration A2a, configuration A2b (consistency: 0.877, coverage: 0.204) has one more condition that is the project creator has rich experience as a creator, which can also produce high financing performance. Previous studies have shown that the signals of crowdfunding experience and project quality are crucial to the success of crowdfunding (Courtney et al., 2017). Comparing configuration A2a with configuration A2b, we found that when the signals of project quality are sufficient, even without the reputation signals of the project sponsor, it still produces high financing performance. More project information implies higher project quality signals, so potential supporters' distrust of project sponsors who lack crowdfunding experience will also be reduced. Since there exists cost in the signal transmission process, it may be too expensive for entrepreneurs to take advantage of both creators' credibility and project quality signals. Similarly, the signals of project quality can make up for the signals of creators' credibility. Therefore, we propose the following proposition:

Proposition 2: When the signals of project quality are sufficient (high number of project likes, updates, description words), even if there are no signals of creators' credibility, it can also achieve high crowdfunding performance.

Configuration A3 (consistency: 0.907, coverage: 0.205) shows that when the project is launched by a creator with rich crowdfunding experience (experience as a backer and creator), if both the creator and the project obtain a high number of likes, it can achieve high crowdfunding performance without more project description.

Low crowdfunding performance

Configuration B1a (consistency: 0.903, coverage: 0.216) and configuration B1b (consistency: 0.911, coverage: 0.086) indicate that when the project is launched by a creator with crowdfunding experience as a backer or creator, it cannot produce high crowdfunding financing performance with a low number of project likes, updates, and description words. Comparing configuration B1 (B1a and B1b) and configuration A1 (A1a and A1b) which achieve high financing performance, A1 have the signals of project quality (high number of project likes and updates). Due to the information asymmetry in crowdfunding, entrepreneurs usually need to show the project's potential through observable signals to reduce the perceived risk of potential backers (Davies & Giovannetti, 2018). The results highlight the importance of the signals of project quality. Therefore, we propose the following:

Proposition 3: The signals of creators' credibility are not sufficient to produce high crowdfunding performance without any signals of project quality.

Configurations B2, B3 and B4 are other configurations of low crowdfunding performance that cannot be classified. Configuration B2 implies that a high number of project updates and likes creator received cannot produce high financing performance when other signals are absent. Configuration B3 suggests that the absence of all signals except a high number of project description words can lead to low financing performance. Configuration B4 shows that the joint presence of creator experience, the high number of project description words and likes creator received are not sufficient to produce high crowdfunding performance when project likes and updates are absent.

Asymmetry in configurations of high and low crowdfunding performance

The causal asymmetry of QCA means that the reasons for the presence (such as high performance) and absence (such as low performance) of the expected results are different, which need to be analyzed separately. According to the causal asymmetry, even if it can be concluded that the presence of a certain condition will lead to high performance, it cannot be inferred that the absence of this condition will lead to low performance. This assumption can explain the differences between cases and the configuration effect of interdependence among conditions. These results show that the condition configurations of high financing performance and low financing performance are not symmetrical. Therefore, we propose the following proposition:

Proposition 4: The structures of configurations for high crowdfunding performance and those for low crowdfunding performance are asymmetric.

Robustness Checks

To scrutinize the results, we performed a series of robustness checks by changing the case frequency (from 1 to 2) and changing the PRI consistency thresholds (increased by 0.1). The consistency and coverage of the overall solutions were the same as the original results. And the configurations identified from the robustness test did not change.

RESULTS

This study examines conditions that affect the crowdfunding financing performance (i.e., number of likes project received, number of updates, number of description words, number of likes creator received, experience as a backer, and experience as a creator). Table 5 shows the four propositions concluded in this study. Overall, our results suggest that the signals of project quality and creator's credibility play an important role in crowdfunding performance.

Table 5: Propositions concluded in this study.

	Proposition
Proposition 1	To achieve high crowdfunding performance in a project with high number of project likes and updates, signals of experience as a backer and experience as a creator are substitutable factors.
Proposition 2	When the signals of project quality are sufficient (high number of project likes, updates, description words), even if there are no signals of creators' credibility, it can also achieve high crowdfunding performance.
Proposition 3	The signals of creators' credibility are not sufficient to produce high crowdfunding performance without any signals of project quality.
Proposition 4	The structures of configurations for high crowdfunding performance and those for low crowdfunding performance are asymmetric.

Source: This study.

For project creators, the crowdfunding experience represents the creator's ability to successfully launch the project and increases financing performance (Borrero-Domínguez et al., 2020). On online crowdfunding platforms, when entrepreneur launches crowdfunding projects or support others' projects, they can develop the necessary knowledge and skills over time, which can indicate the credibility of the project creator. Proposition 1 suggests that the project creator's initiation experience and supporting experience are substitutes for each other in demonstrating their credibility. Entrepreneurs with experience in project initiation tend to have broader social capital, who are able to work with a wide range of stakeholders and have a competitive advantage over novices in accessing resources. Entrepreneurs with supporting experience can learn from others' projects about launching crowdfunding projects, such as writing project descriptions, developing marketing plans, communicating with clients, etc.

Our findings also show that crowdfunding investors are rational when it comes to investments. Propositions 2 and 3 indicate that investors will be more cautious than we originally thought in interpreting project quality signals and project creators' credibility signals. Previous research has suggested that creators' credibility signals may offset the lack of project quality signals (Huang et al., 2022a). However, our findings uncover that the creator's credibility does not compensate for the lack of project quality. Configurations B1a and B1b, for example, all entail the signal of creator's credibility but no signal of project quality, which both have a low financing performance. We extend previous research by revealing the interaction between project quality signals and project creators' credibility signals in influencing crowdfunding performance. Our results also support the idea that the effectiveness of one signal depends on the presence of the other (Huang et al., 2022b). More importantly, we demonstrate that the lack of project creator's credibility signal does not necessarily hinder crowdfunding success, as it can be offset by the presence of project quality. Our findings also show that achieving high crowdfunding performance depends on the configuration of various signals.

Our study reveals the causal complexity between project disclosure and crowdfunding performance. Since signals can be significant in certain specific contexts, the configurations of low-level outcomes are not necessarily the opposite of those of high-level outcomes. That means with appropriate configurations, low-level signals may also produce positive outcomes. The asymmetry between configurations of high and low crowdfunding performance offers the possibility for projects to maintain a balance between information disclosure and privacy protection.

CONCLUSION

In recent years, an increasing number of entrepreneurs have resorted to crowdfunding to obtain financing. However, there is a great deal of information asymmetry in crowdfunding platforms, and entrepreneurs often need to rely on observable signals to demonstrate the potential of their projects. Based on signaling theory, this study reveals how signals of project quality and creator's credibility work together to generate high crowdfunding performance. We demonstrate that the effectiveness of crowdfunding signals depends on their configuration.

Implications for Research

This study expands the research on crowdfunding performance based on the signaling theory, and further examines the impact of project quality signals and creator's credibility signals on crowdfunding performance, enriching the understanding of effective signals.

Previous studies have focused more on the role of a single signal through asymmetric approach (K. Kim & Viswanathan, 2018). This study examines how the interaction of multiple signals influences crowdfunding performance by using the fsQCA approach. The role of an entrepreneur's credibility and project quality on crowdfunding success has been explored. However, most considered linear influence relationships from a single signal, and the potential interactions and causal complexity between different signals are often overlooked.

This study has not only identified multiple configurations that can produce the same outcome but also summarize them into four propositions that explain the complex phenomenon of crowdfunding success in a more meaningful way. By comparing the condition configuration of high crowdfunding performance and low crowdfunding performance, we find that the configurations of high crowdfunding performance are not the complete opposite of low crowdfunding performance. This shows that the condition configurations of high crowdfunding performance and low crowdfunding performance are independent of each other and related to different combinations of signals.

Implications for Practice

This study also provides practical implications for the project creators on how to leverage different signals for obtaining high crowdfunding performance in product crowdfunding.

Firstly, with the absence of signals of creators' credibility (creator experience and backer experience), the project creator can pay more attention on project preparation to highlight the signals of project quality such as likes received by the project, project updates and description words, so as to reduce information asymmetry and gain the trust of potential supporters.

Secondly, when the project creator does not have experience as a creator, he can accumulate backer experience by supporting others' projects. On the one hand, he can learn how to design crowdfunding projects from others' projects. On the other hand,

he can also convey the signals of creators' credibility to potential supporters. Thirdly, when the project is launched by a creator with rich crowdfunding experience and close social network connections, it cannot fully persuade potential supporters to invest. They also need to obtain signals of project quality, so as to make investment decisions. Therefore, when launching a crowdfunding project, the project creator needs to carefully consider the signals of project quality and creators' credibility.

Limitations and Future Research

This study has the following limitations. Firstly, this study only captures data from MoDian crowdfunding platform. Due to different levels of uncertainty among different crowdfunding platforms, the results of this crowdfunding platform might not be generalizable to other product crowdfunding platforms. Future research can test the impacts of different configurations of signals in other types of product crowdfunding platforms (e.g., electronic appliances or commodities). Secondly, this study is based on objective data publicly available on the platforms. There are other conditions which are related to project quality and creators' credibility, such as the number of videos, pictures, social software friends and so on. Therefore, more relevant data are required to assess the influence of signals.

ACKNOWLEDGMENT

This research was funded by the National Natural Science Foundation of China (No. 71702111), the Philosophy and Social Sciences Planning Project of Guangdong Province (GD21CGL30),the Postgraduate Innovation Development Fund Project of Shenzhen University (No. 315-0000470707), the Shenzhen Higher Education institute Support Plan (No. 20200826144104001), the Shenzhen Higher Education institute Support Plan (No.20200812134420001), and the Humanities and Social Sciences Project of Ministry of Education (No.21YJC630052).

REFERENCES

Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in equity crowdfunding. Entrepreneurship Theory and Practice, 39(4), 955–980. https://doi.org/10.1016/B978-0-12-814637-8.00010-X

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. https://doi.org/10.1016/j.jbusres.2016.10.001

Borrero-Domínguez, C., Cordón-Lagares, E., & Hernández-Garrido, R. (2020). Analysis of success factors in crowdfunding projects based on rewards: A way to obtain financing for socially committed projects. Heliyon, 6(4), e03744. https://doi.org/10.1016/j.heliyon.2020.e03744

Chen, L., Li, Y., & Fan, D. (2018). How do emerging multinationals configure political connections across institutional contexts? Global Strategy Journal, 8(3), 447–470. https://doi.org/10.1002/gsj.1187

Colombo, M. G., Franzoni, C., & Rossi–Lamastra, C. (2015). Internal social capital and the attraction of early contributions in crowdfunding. Entrepreneurship Theory and Practice, 39(1), 75–100. https://doi.org/10.1111/etap.12118

Colombo, O. (2021). The use of signals in new-venture financing: A review and research agenda. Journal of Management, 47(1), 237–259. https://doi.org/10.1177/0149206320911090

Cosh, A., Cumming, D., & Hughes, A. (2005). Outside Entrepreneurial Capital. Social Science Electronic Publishing, 119. https://ssrn.com/abstract=663841

Courtney, C., Dutta, S., & Li, Y. (2017). Resolving information asymmetry: Signaling, endorsement, and crowdfunding success. Entrepreneurship Theory and Practice, 41(2), 265–290. http://doi.org/10.1111/etap.12267

Davies, W. E., & Giovannetti, E. (2018). Signalling experience & reciprocity to temper asymmetric information in crowdfunding evidence from 10,000 projects. Technological Forecasting and Social Change, 133, 118–131. https://doi.org/10.1016/j.techfore.2018.03.011

De Crescenzo, V., Ribeiro-Soriano, D. E., & Covin, J. G. (2020). Exploring the viability of equity crowdfunding as a fundraising instrument: A configurational analysis of contingency factors that lead to crowdfunding success and failure. Journal of Business Research, 115, 348–356. https://doi.org/10.1016/j.jbusres.2019.09.051

Greckhamer, T., Furnari, S., Fiss, P. C., & Aguilera, R. V. (2018). Studying configurations with qualitative comparative analysis: Best practices in strategy and organization research. Strategic Organization, 16(4), 482–495. https://doi.org/10.1177/147612701878648

Huang, S., Pickernell, D., Battisti, M., & Nguyen, T. (2022a). Signalling entrepreneurs' credibility and project quality for crowdfunding success: Cases from the Kickstarter and Indiegogo environments. Small Business Economics, 58(4), 1801–1821. https://doi.org/10.1007/s11187-021-00477-6

Huang, S., Pickernell, D., Battisti, M., & Nguyen, T. (2022b). Signalling entrepreneurs' credibility and project quality for crowdfunding success: Cases from the Kickstarter and Indiegogo environments. Small Business Economics, 58(4), 1801–1821. https://doi.org/10.1007/s11187-021-00477-6

Jiménez, F. R., & Mendoza, N. A. (2013). Too popular to ignore: The influence of online reviews on purchase intentions of search and experience products. Journal of Interactive Marketing, 27(3), 226–235. https://doi.org/10.1016/j.intmar.2013.04.004

Kim, J.-Y., & Miner, A. S. (2007). Vicarious learning from the failures and near-failures of others: Evidence from the US commercial banking industry. Academy of Management Journal, 50(3), 687–714. https://doi.org/10.5465/amj.2007.25529755

Kim, K., & Viswanathan, S. (2018). The'Experts' in the crowd: The role of experienced investors in a crowdfunding market. Mis Quarterly. http://dx.doi.org/10.2139/ssrn.2258243

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. https://doi.org/10.3390/su12020650

Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing, 29(1), 1–16. https://doi.org/10.1016/j.jbusvent.2013.06.005

Ragin, C. C. (2009). Redesigning social inquiry: Fuzzy sets and beyond. Social Forces, 88(4), 1936–1938. Calibration versus Measurement.

Reichenbach, F., & Walther, M. (2021). Signals in equity-based crowdfunding and risk of failure. Financial Innovation, 7(1), 1–30. https://doi.org/10.1186/s40854-021-00270-0

Usman, S. M., Bukhari, F. A. S., You, H., Badulescu, D., & Gavrilut, D. (2020). The effect and impact of signals on investing decisions in reward-based crowdfunding: A comparative study of China and the United Kingdom. Journal of Risk and Financial Management, 13(12), 325. https://doi.org/10.3390/jrfm13120325

Wang, N., Liang, H., Xue, Y., & Ge, S. (2021a). Mitigating Information Asymmetry to Achieve Crowdfunding Success: Signaling and Online Communication. Journal of the Association for Information Systems, 22(3), 4. DOI: 10.17705/1jais.00679

Wang, N., Liang, H., Xue, Y., & Ge, S. (2021b). Mitigating Information Asymmetry to Achieve Crowdfunding Success: Signaling and Online Communication. Journal of the Association for Information Systems, 22(3), 4. DOI: 10.17705/1jais.00679