An Empirical Factors Research of the Financing Success Rate of KIA Crowdfunding Investment: Based on the Platform of Renren Investment

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Abstract: As the latest product of the development of Internet finance, equity-based crowdfunding is gradually becoming an important part of the construction of China's multi-level capital market and a new method to solve the financing difficulties of small and medium-sized enterprises. Based on the data of Renren investment platform, this paper conducted an empirical analysis, and through the factor analysis method, specifically explored the influence of factors such as dividend frequency, financing amount, number of followers and investment proportion of investors. The findings indicate that project quality factor, project guarantee value factor, external influencing factor and enterprise scale factor have a significant impact on investors' investment intention, thus providing a reference for enterprises to improve the completion rate of KIA crowdfunding.

1. Introduction

Under the background of the Internet + era, the development of Internet finance has made a breakthrough and presented new structures and forms, constantly demonstrating its own development advantages. As an emerging business model, Internet finance uses 4G and other new generation mobile communication technologies and Internet technologies to carry out various financial activities, which will certainly bring many shocks and challenges to traditional finance.

Equity-based crowdfunding is an important branch of crowdfunding, in which innovative firms or projects hope to attract a large number of investors to raise funds publicly online. As the latest product of Internet finance, equity-based crowdfunding is gradually becoming an important part of the construction of China's multi-level capital market and a new way to solve the financing difficulties of small, medium and micro companies.

However, some theoretical and empirical studies have been conducted abroad, but domestic studies are still in the basic stage. Therefore, it is necessary for this paper to analyse and study the factors affecting the success rate of equity-based crowdfunding, so as to enable innovative high-tech enterprises, platform investors and investment platforms to better promote the success of project financing and more efficient allocation of social resources.

2. Literature Review

Domestic and foreign scholars have conducted in-depth studies on the factors influencing the success of crowdfunding and equity-based crowdfunding projects. The research focuses mainly consist of the Information of the Project, the Characteristics of the Initiator, the Degree of Support Received by the Project, Risk Factors and other aspects.

At first, the factors influencing crowdfunding projects were focused more on the substantive information of the projects. Evers(2012), from the perspective of individual motivation, probed into the three dimensions of project quality, project information and project demand, and found that the setting of diversified project teams and small amount of sponsorship was also popular. Kuppuswamy and Bayus(2013) studied that project financing time limit, financing amount and return form would affect the investment behavior of investors as well. Based on the expectation theory, Huang Ling and Zhou Qin (2015) pointed out that the preset target amount is lower, the

novelty is higher, and the success of crowdfunding projects with differentiated return types and diversified project publicity channels has more probability. Chen Yujie (2017) believed that project information elements, especially the number of pictures and the number of dynamic project updates in the financing process, had a significant impact on the success of crowdfunding project financing.

Subsequently, scholars gradually introduced the influence of sponsor characteristics. Mollick(2014) found that the number of Facebook friends of the initiator would also contribute to project financing. Boeuf et al. (2014) pointed out that for prosocial investors, the positive effect generated by the influence of internal factors is greater than the negative effect generated by the influence of external factors, and project operators' support for other initiators is conducive to enhancing the investment enthusiasm of public investors for their own projects. Wu Jianyun (2016) found that the project information released by the crowdfunding platform has a significant impact on the investment willingness of investors and the financing performance of the final project, and plays an important role in the decision-making of investors.

At the same time, scholars also discussed about the level of support and interaction for the project. Ordanini with his group made a case study of three popular crowdfunding platforms in the United States, showing that the interaction with the project sponsor through the crowdfunding platform is an important factor for the investment enthusiasm of crowdfunding investors. Gerber's research showed that because of the interaction in the crowdfunding community, crowdfunding projects that are both project sponsors and investors of other projects are more likely to be successful to some extent.

In addition, Belleflamme (2014) found that equity-based crowdfunding and product crowdfunding attract different types of investors. And financial investors take up the most investors of equity-based crowdfunding, while the fans and users of product crowdfunding are products. Collins and her team concluded that product crowdfunding had better financing performance when investors were not triggered by financial returns, but they preferred equity crowdfunding after being triggered. Cholakova (2015) and other scholars found that the performance of equity-based crowdfunding is positively correlated with investors' interest in financial returns.

3. Research Design

3.1. Research Method

The factor analysis will be used to reduce the number of original indicators to form a new main factor, decreasing the complexity of the model. In this way, the original variables are grouped according to the correlation size, so that the correlation between the variables in the same group is higher, and the correlation between the different groups is lower.

3.2. Indicators Selection

According to the public data on the platform of Renren Investment, this paper sorts out seven indicators: dividend frequency, total financing amount, initial investment amount, financing days, number of followers, store size, project capital contribution ratio.

3.3. Sample Selection

This paper is based on the Renren platform which is a domestic equity-based crowdfunding service platform. Everyone who wants to invest in the platform needs to be registered as a member on the platform. After the identity review, the relevant information of the project can be released to the platform for investors to vote and the project can be pre-heated financing, then the project will enter the formal financing state. This paper selects 95 successful cases of equity crowdfunding during 2014-2018. The cases are mainly for the featured stores invested by grassroots investors and the main mode is dividends type.

4. Empirical Analysis

4.1. Validity and Feasibility Test

The factor analysis method is adopted, and its applicable condition is that there is a strong correlation between the original financial data. In this paper, the KMO test and Bartlett test are used. As shown in the table 1, the KMO value of the result is 0.633, which is over 0.5. The Bartlett test has a P-value of 0.00. Therefore, the test results present that the correlation between the original indicators is strong and suitable for factor analysis.

<p align="center">Table 1 KMO and Bartlett's Test</p>

KMO Measure of Sampling Adequacy	0.633
Bartlett's Test of Sphericity(sig.)	0.00

4.2. Principal Components Extraction

The total explained variance can be seen from Table 2 and it shows that the eigenvalues of the first four factors are all greater than 1, indicating that there should be 4 factors which are used to explain the original 7 indicators. The cumulative variance contribution rates of the original indicators are 75.74%, indicating that the four extracted factors are better than the original variables, explaining the original 7 indicators to large extent information.

The common factors are processed with varimax orthogonal rotation because it is hard to intercept the actual significance to the obtained un-rotational common factors. Table 3 presents the matrix and it mainly selects the value of the factor load which is greater than 0.5, indicating that the analysis effect is very good.

<p align="center">Table 2 Total Variance Explained (%)</p>

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Var.	Cum.	Total	Var. l	Cum.	Total	Var. l	Cum.
1	1.713	24.473	24.173	1.713	24.473	24.473	1.617	21.107	23.107
2	1.504	21.484	45.957	1.504	21.484	45.957	1.509	21.5627	44.669
3	1.072	15.316	61.273	1.072	15.316	61.273	1.093	15.612	60.280
4	1.031	14.469	75.742	1.013	14.469	75.742	1.082	15.462	75.742
5	0.724	10.341	86.083						
6	0.662	9.455	95.537						
7	0.312	4.463	100.00						

Table 4 shows that through principal component analysis, the common variance of each indicator variable is above 0.5, and most of them are around 0.8, indicating that these four factors can better reflect most information of the original indicator variables. In addition, the results clearly show the composition of four factors: (1) dividend frequency and number of followers formed factor 1, (2) financing days and initial investment amount formed factor 2, (3) total financing amount and project capital contribution ratio formed factor 3, (4) store size formed factor 4.

<p align="center">Table 3 Rotational Component Matric</p>

	Variance	Component			
		Factor 1	Factor 2	Factor 3	Factor 4
1	dividend frequency	0.838			
2	number of followers	0.746			
3	financing days		0.827		
4	initial investment amount		0.892		
5	total financing amount			0.915	
6	project capital contribution ratio			0.642	
7	store size				0.918

<div align="center">Table 4 Common Factor Variance</div>

Variance	Initial	Extract
financing days	1.000	0.795
total financing amount	1.000	0.852
total financing amount	1.000	0.851
number of followers	1.000	0.583
store size	1.000	0.854
Project capital contribution ratio	1.000	0.654
dividend frequency	1.000	0.713

4.3. Factors Naming

To make the conclusion clearer, each factor needs to be named. The ditals of four factors are as follows:

Factor 1 is named as "External Influencing Factors", including the influence of the project (number of followers) and dividend frequency. The more people the project has, the broader the impact and the more powerful the impact; The higher the project dividend frequency, the higher the success rate of equity-based crowdfunding projects.

Factor 2 is named as "Project Quality", including two measures of financing days and initial investment amount. The product quality of crowdfunding projects is mainly reflected in the number of days of financing and the initial investment amount. In all kinds of financing activities, if the prospect of the proposed financing project is good, it will be more attractive to investors, and the project will take less time to complete the given financing amount. The initial investment amount reflects the lowest return and service that investors can gain. The higher the initial investment amount is, the higher the return and service level that investors can enjoy, and the higher the investment willingness of investors, thus the success rate of the project will increase accordingly.

Factor 3 is named as "Project Guarantee Value", including the total amount of financing and project risk (investor contribution ratio). Previous studies have confirmed that the total amount of financing has a significant impact on the success rate of financing. However, in general, the more the entrepreneur of an entrepreneurial project contributes to the project, the easier it is for investors to gain the confidence in the project. This can effectively reduce the perceived project risk of investors who think that the guarantee of the project is reliable, and have more investment intentions.

Factor 4 is named as "Enterprise Scale", which mainly refers to the number of existing branches of the companies. This reflects the basic situation of crowdfunding sponsors at this stage. Generally speaking, the more branches an enterprise has, the stronger the development foundation and the stronger the strength of the enterprise. At this stage, the development trend is on the rise, which will prompt investors to invest and increase the success rate of project financing.

5. Conclusions

As mentioned earlier, a large number of scholars at home and abroad have studied the factors influencing the success rate of equity-based crowdfunding projects or the components of crowdfunding projects, and some conclusions in this paper also confirmed the research results of scholars. This paper takes the equity crowdfunding platform of Renren investment as an example and selects 95 project data. Through factor analysis method, according to the correlation between the size, this paper focuses on 7 variables: the number of followers, financing days, dividend frequency, initial investment amount, total amount of financing, project capital investment proportion, store size, and optimizes four main factors of Project Quality Factor, Project Guarantee Value Factor, External Influencing factor and Enterprise Scale Factor, which provides a theoretical model for further regression analysis.

However, this paper has some limitations. Firstly, there are limitations in the acquisition of sample data. This paper is unable to track and record the platform data at a high frequency. The

sample size is not particularly sufficient compared with the number of variables, and it is difficult to find more comprehensive and complete sample data on the website. Secondly, the factor of "Enterprise Scale" contains only one branch size variable, with weak representativeness and low degree of possible factor explanation. It is hoped that the quantitative research in the direction of equity-based crowdfunding in the future can break through the above limitations and obtain more scientific and complete research results.

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