

An Empirical Study of the Influencing Factors of KIA Crowdfunding Investment Intention based on the Renren Investment Platform

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Abstract—With the development of KIA equity crowdfunding, more and more investors are starting to invest small enterprises through crowdfunding platforms. How these factors affect investors' investment intention is still a problem. This paper explores nine indicators based on the data of the Renren Investment platform. By using factor analysis method which optimized four common factors including financing target signal, external influencing factor, project characteristics factor and trust factor, this study establishes the linear multiple regression model. The results indicates that the financing target signal including the total financing amount and the target number has more influence on the investor's investment intention than other three factors. Besides, this paper finds the relationship between the two variables of financing days and starting amount which is rarely studied in the previous literatures.

Keywords—KIA crowdfunding; Investment intention; Influencing factors; Small enterprises

I. INTRODUCTION

In recent years, with the development of Internet finance, KIA equity crowdfunding as a new force in network financing is growing. KIA crowdfunding is an approach for ordinary investors that the company sells a certain percentage of shares and investors invest in companies to obtain future earnings. This model of financing based on Internet channels is called equity crowdfunding [1]. According to Yingcan Consulting data, in 2015, the national crowdfunding industry successfully raised 11.424 billion yuan. It is an increase of 429.38% over 2014. Among crowdfunding industry, equity crowdfunding development is the fastest, and it is a spurt development. In the first half of 2015, there were 98 new equity crowdfunding platforms. Well-known companies such as Ali, Jingdong and Tencent have been involved in equity crowdfunding business [2]. In 2013, the first domestic equity fundraising project was successfully launched, and the first secured equity crowdfunding project appeared in 2014. However, China's equity crowdfunding is still in the early stage of development because it has grown less than ten years and has encountered many different problems. Therefore, it is of theoretical and practical significance to study on the influencing factors of equity crowdfunding investment intention.

II. LITERATURE REVIEW

The Many scholars who are at home and abroad have studied the influencing factors of investment intention. For example, Chen et al. [3] studied the project data of online lending platform based on trust theory. The results show that the trust between borrowers and lenders is an important factor affecting investors' investment intention. Borrowers should provide investors with high-quality information to gain the trust of investors. Song Wen and Han Lichuan [4] analyzed the transaction data of PaiPaidai lending platform and studied the impact of perceived earnings, perceived risk, and online trust on investor decision-making. The results show that trust variables are the most important factors affecting investors' willingness to lend.

In addition, many scholars have found that the behavior of other investors has a significant influence on the decision-making of investors. Lee [5] studied South Korea's largest online lending platform and found that the behavior of others on the platform is easy to observe. Because most investors are non-professional investors, therefore, investors follow obvious investment behavior when they choose investment projects. Herzenstein et al. [6] used a two-stage approach to study the behavior of investors on the Prosper platform and found that investors have strategic herding behavior. For every 1% increase in investment, the probability of investor investment increases by 15%.

Zhao Yuxue [7] combined with qualitative and quantitative research and found that the available financial compensation has a positive impact on the willingness to invest in crowdfunding. Besides, the pleasure, the setiment and the deterministic return of supporting crowdfunding projects also have positive impacts on crowdfunding investment motivation. However, some scholars hold the opposite opinion and believe that return is not the only factor. Lambert et al. [8] found that many crowdfunding projects did not give investors a return, so the return is not the only reason for public participation. Agrawal et al. [9] believe that investors' enthusiasm for investment projects is largely because the enjoyment of the participation process, which exceeds the pursuit of capital and profits.

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Ordanini et al. [10] believe that the motivation of investors in crowdfunding activities is not only from the financial aspect, but also from the social reputation and intrinsic motivation. Holakova [11] believes that the intrinsic motivation of investors should also include the motive of trust, mainly referring to the trust of the financing party in the rational use of funds.

In summary, the predecessors' research results provide a good research perspective for follow-up researches, and the main factors that influence investors' decision-making include trust, other investor' behavior, financial returns and intrinsic motivation. However, the influencing factors still need to be improved and supplemented. In order to play a go deep into and supplement to the existing researches, this paper attempts to construct a crowdfunding influence factor model including the three factors of financing target signal, external influence factor and trust factor.

III. METHODOLOGY

A. 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. Then this paper used the scores of each main factor as the new independent variables instead of the original independent variables for regression analysis to obtain the final multiple linear regression models.

B. Indicators Selection

According to the public data on the platform of "Renren Investment", this paper sorts out nine indicators: dividend frequency, total financing amount, starting amount, target number, financing days, number of followers, store size, project capital contribution ratio and investor contribution ratio.

TABLE II. TOTAL VARIANCE EXPLAINED (%)

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	Variance	Cumulative	Total	Variance l	Cumulative
1	2.606	28.954	28.954	1.955	21.726	21.726
2	1.698	18.866	47.820	1.871	20.787	42.513
3	1.487	16.528	64.348	1.546	17.173	59.686
4	1.088	12.092	76.440	1.508	16.754	76.440
5	.875	9.718	86.157			
6	.675	7.498	93.656			
7	.335	3.719	97.374			
8	.230	2.551	99.925			
9	.007	.075	100.000			

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

C. 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.

IV. ANALYSIS AND RESULTS

A. 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 values of the result is 0.533, 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.

TABLE I. KMO AND BARTLETT'S TEST

<i>KMO Measure of Sampling Adequacy</i>	<i>0.533</i>
<i>Bartlett's Test of Sphericity(sig.)</i>	<i>0.00</i>

B. 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 9 indicators. The cumulative variance contribution rates of the original indicators are 76.44%, indicating that the four extracted factors are better than the original variables, explaining the original 9 indicators to large extent information.

the factor load which is greater than 0.5, indicating that the analysis effect is very good. In addition, the results clearly show the composition of four factors: (1) total financing amount and target number formed factor 1, (2) dividend

frequency and number of followers formed factor 2, (3) store size, project capital contribution ratio and investor contribution ratio formed factor 3, (4) starting amount and financing days formed factor 4.

TABLE III. ROTATIONAL COMPONENT MATRIX

variance		Component			
		Factor 1	Factor 2	Factor 3	Factor 4
1	total financing amount	0.867			
2	target number	0.917			
3	dividend frequency		0.808		
4	number of followers		0.719		
5	store size			0.686	
6	project capital contribution ratio			0.677	
7	investor contribution ratio			0.680	
8	starting amount				0.896
9	financing days				0.823

C. Factors Naming

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

Factor 1 is named after Financing Target Signal and includes two indicators: total financing amount and target numbers. Previous studies have confirmed that the target amount of financing has a significant impact on financing performance, and the target amount and target numbers of financing are the most intuitive indicators on the equity crowdfunding platform.

Factor 2 is named after External Influencing Factor and includes 2 items of influence :number of followers and dividend frequency. The number of people concerned is more, so the scope of the impact is wider and the impact is greater; the higher the frequency of project dividends, the more the number of divisions, the greater the success rate of equity crowdfunding.

Factor 3 is named after Project Characteristics Factor and includes two items: project size (number of branches) and project risk (the two investor contribution ratios). The larger the scale of a project, the greater the attractiveness to investors, and thus the impact on project financing success. At the same time, entrepreneurs can use the company shares retained after the equity financing to be used as an invisible characteristic signal of project risk. (After being kicked out by stepwise regression, this paper does not consider its practical significance)

Factor 4 is named after Trust Factor and contains two measures of starting amount and financing days. The smaller the starting amount of a project, the lower the investment threshold, and the shorter the financing days, the less risk of

default by the fundraiser, and the higher the investor's trust, thus increasing the investor's willingness to invest.

D. Linear Regression Model Establishment

After the rotation, the scores of the four common factors is cauculated by SPSS automatically, and then these scores of factors are used to establish linear regression model. As shown in the table 4, there are three models and SPSS removes the scores of factor 3. All these three models use the numbers of people who participate in the crowdfunding inetment as dependent variable. Model 1 takes the scores of factor1 as independent variable. Model 2 takes the scores of factor1 and 4 as independent variables. Model 3 takes the scores of factor1, 2 and 4 as independent variables.

TABLE IV. GOODNESS OF FIT OF THERE MODELS

Model	R	R-squared	Adjusted R-squared	Standard error	F-value	P-value
1	0.406	0.165	0.156	31.144	18.391	0.000
2	0.526	0.276	0.261	29.149	17.579	0.000
3	0.590	0.349	0.327	27.812	16.227	0.000

From the goodness of fit listed in the above table, the third model is 0.327, which is significantly higher than the other two models, indicating that the third model is better than the first two models. So the main selection model 3 is used as the analysis object. Besides, the model 3 has a significance of 0.00 and passes the equation significance test. On the other words, the financing target signal factor, the trust factor and the external influence factor have a direct linear relationship with the willingness to invest.

TABLE V. SIGNIFICANCE RESULTS

Model	coefficient	T-value	P-value
Constant	45.168	15.830	0.000
REGR factor score 1	13.776	4.802	0.000
REGR factor score 4	11.315	3.944	0.000
REGR factor score 2	9.099	3.172	0.002

As shown in the table 5, the model has a significance of 0.00 and passes the equation significance test. On the other words, the financing target signal factor, the trust factor and the external influence factor have a direct linear relationship with the willingness to invest. The P-values of all three parameters were 0.00, all pass the significance test. That is, it can be considered that the financing target signal factor, the trust factor and the external influence factor have a significant influence on the investment intention.

What's more, the coefficients of three parameters are also listed in the table 5 and used to estimate whether the sign of the parameter is correct or not. $\hat{\beta}_1 = 13.776$ indicates that the relationship between the financing target signal factor and investment intention shows a positive direction. $\hat{\beta}_2 = 11.315$, indicates that the relationship between the trust factor and investment intention changes in a positive direction. $\hat{\beta}_3 = 9.099$, indicates the relationship between the external influence factors and investment intention is in a positive direction. Therefore, these three parameters are all in line with economic theory and people's experience expectations.

In summary, the equation for multiple linear regression model is:

$$Y = 45.168 + 13.776X_1 + 11.315X_2 + 9.099X_3 + u_i \quad (1)$$

V. CONCLUSION AND DISCUSSION

This paper, on the basis of the data published in Renren platform, by applying factor analysis and linear regression, optimizes four factors, use three factors to obtain the equation for multiple linear regression and makes an empirical analysis of the influencing factors of crowdfunding investment intention. The conclusions of the study are as follows:

First of all, the project information published by the platform has a significant impact on the investor's willingness to invest and the financing performance of the final project and plays a more important role in investor decision-making. The financing target signals including the financing target amount and the financing target number are more influential than other project characteristic information, and the impact effect is significant. Investors mainly evaluate project performance and their expected returns based on the financing target information of the project, and then make other initial investment intentions based on other types of information.

It is worth noting that external influence factors and trust factor variables can also explain investment performance better. The external influence factors including the impact of the project (number of followers) and the dividend frequency can be explained by the fact that the investment performance increases with the increase in the number of people paying attention to the project and the increase in the dividend frequency. The trust factor including the two items of the starting amount and the number of financing days can be explained in this paper as the low investment threshold and short-term financing can increase the investor's trust in the project, thereby increasing the willingness to invest.

Finally, the impact of project feature information on financing outcomes is not good, and only investor proportional variables can make better predictions of financing results. In addition, the existing size of the project sponsor company does not seem to increase the investor's enthusiasm for investment in the project. So in the stepwise regression analysis, this article removed this factor.

There are several limitations in the acquisition of sample data. This paper cannot record high-frequency tracking of platform data. In addition, the sample size is not particularly sufficient compared to the number of variables and it is

difficult to find more comprehensive and complete sample data on the website. Secondly, in the process of empirical research, the processing of some sample data may not be particularly scientific and perfect, and the goodness of fit of regression results is relatively poor. Therefore, this paper hopes that the quantitative research in the direction of equity crowdfunding in the future can break through the above limitations, get more scientific and complete research results.

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