An Empirical Study on Influencing Factors of Crowdfunding Successes Based on Customer Delivered Value Theory

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Abstract. Crowdfunding (CF) is an Internet-based way of financing. It is important to understand what drives people to fund these CF projects. Customer delivered value theory is employed to perform qualitative analysis via a binary logistic regression model. Drawing on a dataset of 6402 projects, this paper offers a description of the underlying dynamics of success and failure among crowd-funded ventures. It suggests that the total customer value is associated with the success of crowd-funding efforts while the total customer cost has no obvious impact on their successful fundraising. These results offer suggestions for both funders and investors.

Introduction

Crowdfunding serves as one of the important modes of internet finance. It enables enterprises to raise funds in an innovative way. Since CF makes fundraising accessible for projects of various categories and sizes, it has been developing rapidly in recent years. According to the ‘crowdfunding report’ by Massolution, a total of 16.2 billion dollars was collected via crowdfunding in 2014 which represents a 167% increase in 2013, and is expected to grow to $344 billion in 2015.

Crowdfunding projects are marked by low success rate. For instance, only less than 50% of projects in ‘Kickstarter’ ended in success. Therefore, to enhance the chance of success, it is meaningful to take a closer look upon what really makes a CF project successful. Empirical studies based on various theories are employed to analyze the driving elements of CF projects’ success. Moreover, most of the existing empirical results are concluded through experiments of small-sized cases or with limited factors. And the dominant majority of these experiments are based on Kickstarter. Thus, both the credibility and generality of these empirical results are doubtable. In this paper, based on the Customer delivered value theory, we select factors in a comprehensive way and employ an empirical research with data from a famous Chinese CF web site called ‘zhongchou.com’.

Literature Reviews

There have been a few published researches on this topic. Most researches focus on the investigation of factors that leads to a successful CF. After an empirical study based on projects on Kickstarter, Kuppuswamy and Bayus concluded that when investing, investors are influenced by constellation effect[1]. According to Mourao, the result of a CF project relies largely on the founder’s social network and social status[2].
The quality of CF projects plays an important part in their financing performance[3]. Alessandro detected a negative correlation between success rate and target capital or time window of CF projects[4]. Mourao proved that multi investment options and higher return can make a CF project easier to succeed[2]. Hörisch concluded projects of public benefits are more possible to get successful and that projects with tangible products are more likely to gain funds than those with services[5]. Mollick pointed out that descriptive videos have positive effect on the success of a CF project and geographical distance between founders and investors also has impact on it[3].

To make CF projects successful, it is important to analyze the incentives driving investors to put their money into CF projects. And that is why the customer delivered value theory proposed by Philip Kotler which emphasizes customer service and customer satisfaction can be employed to investigate CF projects. Based on this well-established theory, this paper considers fifteen factors related to perceptive value of potential investors viewing projects displayed on certain platforms. Further, we then take an empirical study using the dominant Chinese CF platform, “zhongchou.com”.

Methodology

We collect project data from a famous Chinese CF web site “zhongchou.com” which, according to the ‘2015 crowdfunding report’ by “pedaily.cn”, dominate Chinese CF market with 1964 projects reported in 2014. There are all together 6799 samples of CF projects collected. After eliminating 397 incomplete samples we get 6402 funding efforts, of which 2573 projects (40.19%) succeeded.

The results of CF projects are taken as the explained variable with 1 representing success and 0, failure. 15 explaining variables classified into 5 dimensions and their description can be found in Table 1.

Table 1. Variables and Description.

| Dimension       | Name            | Variable declaration                                                                 |
|-----------------|-----------------|---------------------------------------------------------------------------------------|
| Product value   | Target(Tar)     | The money that founders seek to raise                                                  |
|                 | Duration(Dur)   | The number of days for which a project accepts funding                                 |
|                 | Type(Typ)       | The category of crowdfunding projects                                                  |
| Personnel value | Certificate(Cer)| The certification information of the founder on the crowdfunding platform             |
|                 | Ffunded(Ffu)    | The number of funder’s funded projects                                                 |
|                 | Fpledged(Fpl)   | The number of funder’s supported projects                                              |
| Service value   | Updates(Upd)    | Founders are encouraged to post information, called Updates, about their projects during and after the fundraising period |
|                 | Video(Vid)      | The descriptive video on CF platform                                                   |
|                 | City(Cit)       | The location of the crowdfunding projects                                              |
|                 | Return_Time(Ret)| The promised return time for the investment                                            |
|                 | Choices(Cho)    | Investment choice numbers for investors to choose                                      |
| Image value     | Attention(Att)  | Attention numbers on the project by crowdfunding users                                 |
|                 | Comment(Com)    | Funders and potential funders can post comments about projects                         |
|                 | Support(Sup)    | The number of investors supporting the projects                                         |
| Cost            | L_Cost(Cos)     | The lowest cost of money for investing the projects                                     |
Logistic Regression Model

A binary logistic regression was employed to find the factors that influencing the crowdfunding success. The logistic regression models are as follows:

\[
\ln \left( \frac{p}{1-p} \right) = \alpha + \beta_1 \text{Tar} + \beta_2 \text{Dur} + \beta_3 \text{Typ} + \beta_4 \text{Cer} + \beta_5 \text{Ffu} + \beta_6 \text{Fpl} + \beta_7 \text{Upd} + \beta_8 \text{Vid} + \ldots
\]

Where, \( \beta_i \) is the regression coefficient and \( p/(1-p) \) stands for dominance ratio which is the likelihood ratio between success and failure of CF projects.

Based on equation (1), \( p \) can be calculated as below:

\[
p = \frac{e^{\left( \alpha + \beta_1 \text{Tar} + \beta_2 \text{Dur} + \beta_3 \text{Typ} + \ldots + \beta_8 \text{Vid} \right)}}{1 + e^{\left( \alpha + \beta_1 \text{Tar} + \beta_2 \text{Dur} + \beta_3 \text{Typ} + \ldots + \beta_8 \text{Vid} \right)}}.
\]

Logistic Regression and Findings

As can be seen in table 2, logistic regression result shows that most of the variables have significant impact on the result of CF projects. In different models, the p-value of the Hosmer-Lemeshow test is greater than the given significance level 0.05 which attests the models fit the data very well. In the full sample model, the prediction accuracy reaches 94.1%.

Table 2. Regression Result.

| Variables | ALL  | Product value | Personnel value | Service value | Image value |
|-----------|------|---------------|----------------|--------------|-------------|
| Tar       | -1.354*** | -444***      | .044           | .313***      | -.933***    |
|           | (0.000)   | (0.000)       | (0.330)        | (0.000)      | (0.000)     |
| Dur       | -3.639*** | -1.393***     | -1.944***      | -3.281***    | -3.879***   |
|           | (0.000)   | (0.000)       | (0.000)        | (0.000)      | (0.000)     |
| Typ(1)    | .665***   | .191***       | .287***        | -.335**      | .483***     |
|           | (0.000)   | (0.000)       | (0.004)        | (0.001)      |
| Typ(2)    | -0.566*** | -.360***      | .248***        | -.100        | -.608***    |
|           | (0.001)   | (0.000)       | (0.389)        | (0.000)      |
| Cer(1)    | -0.493    | -1.187***     | -2.125***      | -.384        |
|           | (0.143)   | (0.000)       | (0.000)        | (0.293)      |
| Cer(2)    | -1.017**  | -.476**       | -1.552***      | -.872**      |
|           | (0.007)   | (0.005)       | (0.000)        | (0.022)      |
| Ffu       | 0.971***  | 1.470***      | .431***        | 1.280***     |
|           | (0.000)   | (0.000)       | (0.000)        | (0.000)      |
| Fpl       | -0.154    | .852***       | .320**         | -.257        |
|           | (0.475)   | (0.000)       | (0.050)        | (0.215)      |
| Upd       | 7.940***  | 12.499***     | 8.205***       |
|           | (0.000)   | (0.000)       | (0.000)        |
Table 2. Regression Result (Cont.).

| Variables | ALL | Product value | Personnel value | Service value | Image value |
|-----------|-----|---------------|-----------------|---------------|-------------|
| Vid(1)    | 0.435*** |               |                 | .179*         | .456***     |
|           | (0.001)  |               |                 | (0.070)       | (0.000)     |
| Cit(1)    | -0.200 | -0.056        |                 | -2.50         |
|           | (0.209)  |               |                 | (0.638)       | (0.110)     |
| Cit(2)    | 0.240*  | .365***       |                 | .196          |
|           | (0.098)  |               |                 | (0.001)       | (0.162)     |
| Ret(1)    | -0.014  | -0.367**      |                 | -.102         |
|           | (0.931)  |               |                 | (0.003)       | (0.529)     |
| Ret(2)    | -0.130  | -.119         |                 | -.112         |
|           | (0.363)  |               |                 | (0.267)       | (0.421)     |
| Cho       | 2.788***| 2.316***      |                 | 1.296***      |
|           | (0.000)  |               |                 | (0.000)       |             |
| Att       | 1.155***| 1.355***      |                 |               |
|           | (0.000)  |               |                 | (0.000)       |
| Com       | 1.028***| 1.150***      |                 |               |
|           | (0.000)  |               |                 | (0.000)       |
| Sup       | 2.872***| 2.316***      |                 |               |
|           | (0.000)  |               |                 | (0.000)       |
| Cos       | 0.923***|              |                 |               |
|           | (0.000)  |               |                 | (0.000)       |
| R-squared | 0.861  | 0.097         | 0.252           | 0.734         | 0.849       |

***p<0.01, **p<0.05, *p<0.1.

(1) The product value has significant influence on CF project financing result.
Both of projects’ target and duration are negatively related to the project success at an 1% significant level, that is to say, higher target doesn’t mean a higher product value and large projects are less possible to get fully funded. Small projects with low investment threshold enjoy greater chance to succeed. As for project duration, Mollick’s research shows that a long duration is a manifestation of lacking confidence. In fact, Kickstarter limits project duration to no more than 60 days and encourages a 30 day funding window [3].

Besides, project type also has significant impact on the CF results. Among all successful projects, projects for public welfare accounted for the largest proportion. It suggests projects of public benefit purpose are more likely to success, when compared with projects from other categories. The possible reason is that people generally feel self-motivated to support the public welfare undertakings.

(2) As for personnel value, the number of projects invested by the funder has no significant influence on the financing result, but the other factors are closely associated with the success of crowd-funding efforts.

Table 2 shows that the number of funders’ supported project doesn’t have significant influence on CF projects’ results, but the number of funded project have significant influence on it. Apparently, the public is more concerned about founders’ financing experience. This is probably because the financing experience can better reflect personnel value. Surprisingly, the certification information negatively impacts the results of CF projects. The reason behind this
may be the minority of certificated funders, moreover, investors’ focuses are different for projects of different types (for example, while art projects feature creative ideas, technology projects are more related to the developing ability).

(3) The service value significantly influences the success of CF projects

The regression result shows that update numbers, video and number of investment choices have remarkable positive influence on the success of CF projects. Generally, project locations are closely associated with CF results, which is more obvious in first-tier cities than in other cities. That is mainly because talent accumulation in first-tier cities endows projects in these metropolises with better quality and larger number of investors. What’s more, projects whose return time set to be ‘in no time’ are easier to be fully founded than those whose return time are two weeks or more. This proves a shorter return time generates a higher service value for investors.

(4) The image value is closely correlated with CF projects success

The image value of projects is reflected by Attention, Comment and Support all of which significantly influence the success of CF projects. The more a project is concerned, commented or supported, the more popular the project is and the greater chance it may end in success.

(5) Investment cost has no significant impact on CF project results

According to the regression result, monetary cost is positively related to project success. The possible reason behind this may be that investors care more about sense of participation in certain projects, for example, investors who support projects for public welfare or art intention are more interested in feelings of involvement and achievement. On the other hand, the value for money is another concern for investors especially those who invest in technological and retail projects. In other words, if an investor cannot obtain due perceptive value from a certain investment, he will never invest however cheap the investment is.

Robust Test

Most crowdfunding projects are for micro finance. To attest the reliability of the regression results, we select projects with target under 100 thousand yuan and perform robustness test on them. The results are consistent with the original model with no significant change in significances and influence coefficients, indicating that the conclusion of this paper is robust.

Suggestions and Limitations

Based on the customer delivered value theory, this paper analyzes 6402 projects from ‘zhongchou.com’ via a binary logistic regression model. Here we may draw the following suggestions. (1) The result shows that capital target and fundraising time window are significantly and negatively correlated with project success. Therefore, project founders should set reasonable targets and appropriate durations of CF projects. (2) To enhance the perceptive value of costumers, founders should increase update frequency, keep reacting with investors and offer various investment options. (3) When appraising value of certain projects, investors should consider both the features of these projects themselves and value brought by their founders. (4) Considering the relatively low success rate of CF projects (less than 50%) and a growing number of CF projects on various platforms, CF platforms, in a way to increase successful rate, should perform strict scrutiny on projects and at the same time introduce these projects to more people via social networking.
Despite the importance of the present findings, this paper has several limitations. First, description of projects on CF webs acts as the primary source for investors to understand projects which transfer information from founders to investors, thus, an in-depth probe including text analysis of project description is needed in the future. Second, when measuring personal value of projects, this paper only considers information on CF platform. Future studies may take the social networking of project founders into consideration.

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