What drives the rapid achievement of a funding target in crowdfunding? Evidence from China

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Abstract: As a novel financing mechanism, crowdfunding can raise funds provided by many people for entrepreneurs in various industries, including the agri-food industry. Achieving a funding target in the shortest time possible is a key concern. Based on customer delivered value theory, we constructed a research model to empirically study the factors hastening the achievement of a funding target using large samples (N = 1 138). The indicators reflecting product value and image value were found to have significant positive impacts on the rapid achievement of the funding target; the indicators reflecting person value and service value also impacted the quick achievement of the funding target. Moreover, the results showed that the indicator reflecting monetary value, the minimum investment amount, has a positive impact on the rapid achievement of the funding target. The number of comments plays a mediating role in the relationship between the indicators reflecting the customer delivered value and the quick achievement of the funding target. Finally, practical implications of this study for initiators, platforms, and regulators are discussed.

Keywords: agri-food crowdfunding; customer delivered value theory; determinant; funding target

As a new method of financing ventures, crowdfunding has grown rapidly, attracting much attention from both entrepreneurs and scholars. In 2015, the global volume of crowdfunding was over USD34 billion (Wang et al. 2018). Recently, agricultural entrepreneurs who often find it difficult to obtain funds from traditional financing systems, have begun focusing on crowdfunding, as a new marketing channel and financing model to solve the dual problem of financing and selling agri-food products. In China, over 3.14 million backers pledged USD 142.78 million to bring 2 987 crowdfunding projects in the agri-food industry to fruition in 2017. Compared with other industries, the scale of crowdfunding in the agri-food industry is relatively small, and the speed of financing is slow. Most agri-food projects involve perishable fresh foods with unpredictable output and demand, thus requiring rapid financing. For agricultural crowdfunding, achieving a funding target quickly is important for several reasons. First, initiators can rely on a large group of loyal supporters to aid in launching the project, and can adjust their marketing strategies timely to meet the personalised needs of their consumers and the market. Second, initiators can raise sufficient funds in time to produce their agri-food products. Third, it enables initiators to deliver fresh agri-food products to their supporters in a timely manner.

To evaluate the speed of financing, previous studies employ indicators such as the daily average completion, the daily average completion rate, and the number of days required to achieve the funding target. However, these indicators do not reflect differences in the funding targets of projects resulting from different product prices or the effects of the project duration and the time remaining after completing the funding target. Thus, to measure the speed of achieving a crowdfunding target, we define a new indicator, crowdfunding speed, expressed as a percentage, as the ratio of the number

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of days required to achieve the financing target to the project duration. This indicator avoids the problem of large differences in funding targets caused by different product prices, and objectively reflects the initiator’s ability to attract investment in the early stage of crowdfunding. When the crowdfunding speed is fast (i.e. the percentage is small), the funding target can be achieved quickly and the time remaining in the project is long, and vice versa. Using data from successful agri-food projects collected from CrowdFunding Net (2019), we obtain the distribution of the crowdfunding speed of such projects (Figure 1). Some projects reached their funding target on the first day, while others did so on the last possible day. The average crowdfunding speed is 63.74%, indicating that the time to achieve the funding target is more than two-thirds of the project duration for most projects. Of the projects reviewed, 233 achieved their target on the last day, and 205 did so in less than 20% of the project duration. Overall, the crowdfunding speed in the agri-food industry is slow. In general, the threshold mechanism is implemented on a crowdfunding platform. Initiators need to achieve their funding target within the investment window or must return all funds already raised. Therefore, it is essential that we determine which factors hasten the crowdfunding speed in the agri-food industry to help initiators develop sensible campaign plans and obtain necessary capital as quickly as possible.

Prior studies have focused mainly on the factors influencing the success of crowdfunding and the investment motivation of the crowd. Using signal theory (Ahlers et al. 2015; Courtney et al. 2017), social capital theory (Lambert and Schwienbacher 2010; Zheng et al. 2014), trust theory (McKnight et al. 2002), and herd behaviour (Zhang and Liu 2012), many factors have been found to influence the success of crowdfunding, including financing target, social capital, initiator’s credit, media, campaign updates. Zhang et al. (2017) found that the number of progress updates is positively associated with project funding performance, whereas the financing target is negatively associated with this performance. Mitigating information asymmetry can enhance a project’s likelihood of attaining funding (Courtney et al. 2017). Yang et al. (2019) show empirically that a crowd’s participation has a positive effect on project success. Others have explored what motivates a crowd to fund a project. In reward-based crowdfunding, capital-giving motivation is influenced by social relationships (Zhao et al. 2017), psychological returns, rewards and financial returns (Xie et al. 2019). These results show that early contributions are from local investors and rewards supplied by initiators can encourage potential backers to invest (Mollick 2014). More recently, scholars have begun investigating how to obtain financial support from backers as quickly as possible. Existing studies do not consider differences in investment windows or funding targets between projects, or the speed at which a target is reached. In addition, few studies examine crowdfunding in the agri-food industry. Therefore, we empirically investigate how to achieve a crowdfunding target quickly in the agri-food industry, and determine the factors that hasten the speed of crowdfunding.

Agri-food crowdfunding is one category of reward-based crowdfunding campaigns. Because the major business model of reward-based crowdfunding is “pre-selling”, backers can be viewed as both investors and consumers, with their own diverse values. Backers will only invest in a project quickly if the reward provided by the initiator satisfies their value, which

![Figure 1. The histogram (A) and probabilities (B) of the crowdfunding speed of projects (N = 1138)
is a core concept of customer delivered value theory. Therefore, based on customer delivered value theory, we examine the factors that drive crowdfunding speed in the agri-food industry from five dimensions: product value, person value, service value, image value and monetary cost. The studies supplement literature regarding the application of customer delivered value theory in the crowdfunding. The values added to this paper are the determination of factors for accelerating crowdfunding, and the mediating role of comments by potential backers.

**Theory and hypotheses**

Customer delivered value is defined as the difference between total customer value (including product value, service value, person value and image value) and total consumer costs (including monetary, time, energy and psychic), and reflects a product's overall capacity to satisfy the consumer's needs. As consumers of crowdfunding products, backers pay greater attention to product quality when making investment decisions. The value perceived by the crowd has an important effect on their decision to invest quickly. Therefore, based on the five components of customer delivered value theory, we determine which factors promote achieving a crowdfunding target quickly. Figure 2 shows the theoretical model of backers' value demand.

- **Product value.** Product value in crowdfunding is perceived by the crowd from the description of a product's quality. In general, high quality products can attract investors quickly. Product certification documents and related information can enhance backers’ understanding of a project. Prior studies have revealed that high-quality descriptions of a project reduce the risk of information asymmetry effectively and promote rapid investment decisions by backers (Boeuf et al. 2014). Therefore, we hypothesise as follows.

  \[ H_1: \] Trademark registration certifications have a positive effect on crowdfunding speed.

- **Person value.** Person value of a crowdfunding project is brought by the project initiation team, and plays a key role in the success of project (Liu and Wang 2011). Initiators can be divided into two categories: institutional initiators and individual initiators. Usually, institutional initiators enjoy greater credibility than individual initiators do. Agrawal et al. (2015) revealed that financing speed is significantly and positively correlated with regional social capital, indicating that crowds like to invest in familiar local crowdfunding projects.

  Altruistic participants in crowdfunding projects are members of the project team who provide financial support for the project without receiving a reward. Participation by altruistic participants can attract the attention of crowds and induce potential backers to invest quickly. Previous studies on crowdfunding have shown that backers exhibit herd behaviour when deciding to invest in a project (Zhang and Liu 2012; Frydrych et al. 2014). Thus, we hypothesise as follows.

  \[ H_2: \] Number of altruistic participants has a positive effect on crowdfunding speed.

- **Service value.** Service value in crowdfunding can be realised by the description of number of images, number of lottery, reward delivery timeline, and number of progress updates. These elements can inform potential backers about the project's progress and status, increasing the crowd's understanding. Studies have shown that projects with achievements that are clearly communicated can attract backers quickly (Boeuf et al. 2014). Therefore, we hypothesise as follows.

  \[ H_3: \] Number of images has a positive effect on crowdfunding speed.

- **Image value.** Image value in crowdfunding is realised by the description of the minimum investment amount. Minimal investment amount can reduce the risk perceived by the crowd, increasing the probability of investment. Thus, we hypothesise as follows.

  \[ H_4: \] Minimum investment amount has a positive effect on crowdfunding speed.

- **Monetary value.** Monetary value in crowdfunding can be measured by the description of the number of crowdfunding platforms and number of comments. Crowdfunding platforms can gather a large number of potential backers, and comments can provide valuable information and promotion. Therefore, we hypothesise as follows.

  \[ H_5: \] Number of crowdfunding platforms has a positive effect on crowdfunding speed.

  \[ H_6: \] Number of comments has a positive effect on crowdfunding speed.

Figure 2. Research model

Source: Authors’ own elaboration
**H₂:** A project launched by an institutional initiator will more rapidly achieve the funding target.

**H₃:** Number of crowdfunding platforms where the initiators are located has a positive effect on crowdfunding speed.

**H₄:** Number of altruistic participants has a positive effect on crowdfunding speed.

**Service value.** Service value refers to the crowd’s experience of satisfaction supplied by the initiators. In crowdfunding, initiators usually establish a lottery to improve the service value perceived by backers. In addition, a delay in reward delivery has a significant and negative effect on the investment behaviour of crowds (Mollick 2014). Their reduced information asymmetry means crowdfunding projects with detailed plan descriptions, including text, images, and videos, can quickly achieve their funding targets. Therefore, we hypothesise as follows.

**H₅:** The presence of a lottery has a positive effect on crowdfunding speed.

**H₆:** Shortening the reward delivery timeline has a positive effect on crowdfunding speed.

**H₇:** Number of pictures displayed on the crowdfunding platform has a positive effect on crowdfunding speed.

**Image value.** Image value refers to the overall image of an enterprise and its products, as perceived by the public. If backers fully understand a project’s image value, they will more likely invest in the project quickly. Colombo et al. (2015) found that frequent updates to project information can increase the financing success rate. Mollick’s study (2014) suggested that the number of progress updates and the number of topics are positively correlated with the financing success rate. Ordanini et al. (2011) confirmed that information updates by initiators have a significant effect on the investment enthusiasm of the crowd. Based on these previous results, we hypothesise as follows.

**H₈:** Frequent information updates improve crowdfunding speed.

**Monetary value.** When measuring the role of total customer cost on crowdfunding speed, previous studies tend to ignore certain costs as assessment indicators, such as time and energy. Thus, the economic cost is reflected in the minimum investment amount set by the initiators. Frydrych et al. (2014) analysed the factors that influence a project’s success, finding that success is significantly related to the minimum investment amount. Thus, we hypothesise as follows.

**H₉:** Minimum investment amount has a positive effect on crowdfunding speed.

**Mediating value.** The theory of value perception indicates that the investment behaviour of a crowd is influenced by their value perception of a project. Belleflamme et al. (2014) showed that initiators’ personal communities should communicate with the crowd in order to obtain investment. A greater number of comments can help a project gain the crowd’s attention and investment, thus increasing the crowdfunding speed. In internet transactions, a reputable initiator and a good crowdfunding platform local to the initiator location can promote the attainment of financing. High-quality agri-food products can enhance the crowd’s value perception by satisfying their dual needs of investment and consumption. Therefore, we hypothesise as follows.

**H₁₀:** Number of comments plays a mediating role in the effect of customer delivered value on crowdfunding speed.

**DATA AND METHODOLOGY**

**Data.** Data for our study were derived from the Crowdfunding Net (2019), one of the largest and most influential crowdfunding platforms in China, founded in February 2013. We reviewed 1 138 successful crowdfunding projects related to the agri-food industry between October 31, 2013 and February 28, 2018. The quantitative data for many key variables were collected from the text of the project descriptions on Crowdfunding Net (2019).

**Methodology.** Using multiple linear regression analysis methods, we examined the factors that increase the speed of achieving funding targets. The dependent variable is crowdfunding speed. The independent variables are a mix of categorical and continuous variables (Table 1). Among the independent variables, the availability of a trademark registration certification reflects product value. The person value of a crowdfunding project is reflected by the initiator type, number of crowdfunding platforms and number of altruistic participants. The availability of a lottery, reward delivery timeline and number of images reflect service value. The indicator for image value is the number of progress updates. The minimum investment amount is the cost of money. The number of comments is a mediating variable. In addition, the funding target, funding success rate and per capita investment are employed as control variables.

In addition, we use the three-step test proposed by Baron and Kenny (1986) to explore the mediating effects. Model 1 tests the effect of the independent
variables on the dependent variable (i.e. crowdfunding speed). Model 2 tests the effect of the independent variables on the mediating variable (i.e. number of comments). Model 3 tests the regulatory role of the mediating variable. The following models are used to test our hypotheses.

\[ CS = \alpha_0 + \alpha_1 TRC + \alpha_2 IT + \alpha_3 NCP + \alpha_4 NAP + \alpha_5 AL + \alpha_6 RDT + \alpha_7 NI + \alpha_8 NPU + \alpha_9 MIA + \alpha_{10} FT + \alpha_{11} FSR + \alpha_{12} PCI + \epsilon \]  

(1)

\[ NC = \beta_0 + \beta_1 TRC + \beta_2 IT + \beta_3 NCP + \beta_4 NAP + \beta_5 AL + \beta_6 RDT + \beta_7 NI + \beta_8 NPU + \beta_9 MIA + \beta_{10} FT + \beta_{11} FSR + \beta_{12} PCI + \epsilon \]  

(2)

\[ CS = \chi_0 + \chi_1 TRC + \chi_2 IT + \chi_3 NCP + \chi_4 AL + \chi_5 ID + \chi_6 RDT + \chi_7 NI + \chi_8 NPU + \chi_9 MIA + \chi_{10} NC + \chi_{11} FT + \chi_{12} FSR + \chi_{13} PCI + \epsilon \]  

(3)

where: \( CS \) – crowdfunding speed; \( TRC \) – availability of trademark registration certification; \( IT \) – initiator type; \( NCP \) – number of crowdfunding platforms; \( NAP \) – number of altruistic participants; \( AL \) – availability of a lottery; \( RDT \) – reward delivery timeline; \( NI \) – number of images; \( NPU \) – number of progress updates; \( MIA \) – minimum investment amount; \( NC \) – number of comments; \( FT \) – funding target; \( FSR \) – funding success rate; \( PCI \) – per capita investment; \( \alpha_0, \beta_0, \lambda_0 \) – the intercepts of the models; \( \alpha_i, \beta_i, \lambda_i \) \( (i = 1, 2, ..., 12) \), \( \beta_i \) \( (i = 1, 2, ..., 12) \), \( \lambda_i \) \( (i = 1, 2, ..., 13) \) – the coefficients of the models; \( \epsilon \) – random error terms.

RESULTS

Descriptive statistics. The descriptive statistics of the variables reflecting the customer delivered value of a crowdfunding project are shown in Table 2. The results show that simply communicating project infor-
mation (including trademark registration certifications, images and progress updates) is not insufficient. Most projects are initiated by an individual initiator. In 51.05% of projects, the number of crowdfunding platforms local to the initiators is less than 10. Most projects have a few altruistic participants. Some projects established a lottery. The statistical result of the reward delivery timeline indicates that initiators pay greater attention to the timely delivery of the reward. In general, the minimum investment amount set by crowdfunding projects is not high.

Regression analysis and hypothesis testing. In order to account for heteroscedasticity in the residuals, we employ a logarithmic transformation for the continuous variables. The regression results are shown in Table 3. The variance inflation factors of all variables indicate that our data do not suffer from significant multicollinearity.

As reported in Table 3, the variable embodying product value (i.e. the availability of a trademark registration certification) has a positive effect on crowdfunding speed at the 10% level indicating that agricultural products with the trademark registration certifications are of better quality and eliminate the concerns of backers. Hypothesis $H_4$ is supported. The initiator type and the number of crowdfunding platforms are found to have significant positive effects on crowdfunding speed at the 5% level, thereby supporting $H_2$ and $H_3$. Thus, compared with individual initiators, institutional initiators have a better reputation, which increases backers’ investment confidence. However, the number of altruistic participants has a significant and negative effect on the dependent variable, thus, hypothesis $H_4$ is not supported. In other words, altruistic participants who provide little support decrease the value expectations of potential backers. Among the variables reflecting service value, availability of a lottery has a significant and negative effect on crowdfunding speed at the 5% level, demonstrating that participation by speculative backers in a crowdfunding lottery yields too little capital, thus reducing the funding speed. $H_5$ is not supported. The reward delivery timeline does not pass the $T$ test, which is inconsistent with the result of Mollick (2014). The data show that the reward delivery for agri-food projects is timely, and thus not a concern for backers. Thus, hypothesis $H_6$ is not supported. The number of images has a positive effect on crowdfunding speed at the 10% level, supporting hypothesis $H_7$. Thus, showing images improves backers’ perceptions of a product and increases the crowdfunding.

### Table 2. Distribution statistics of variables reflecting customer delivered value ($N = 1138$)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value</th>
<th>Number of projects</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of trademark registration certification</td>
<td>1</td>
<td>32</td>
<td>2.81</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1 106</td>
<td>97.19</td>
</tr>
<tr>
<td>Initiator type</td>
<td>1</td>
<td>340</td>
<td>29.88</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>798</td>
<td>70.12</td>
</tr>
<tr>
<td>Number of crowdfunding platforms</td>
<td>&lt; 10</td>
<td>581</td>
<td>51.05</td>
</tr>
<tr>
<td></td>
<td>≥ 10</td>
<td>557</td>
<td>48.95</td>
</tr>
<tr>
<td>Number of altruistic participants</td>
<td>1–4</td>
<td>404</td>
<td>35.50</td>
</tr>
<tr>
<td></td>
<td>≥ 5</td>
<td>432</td>
<td>37.96</td>
</tr>
<tr>
<td>Availability of a lottery</td>
<td>1</td>
<td>481</td>
<td>42.27</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>657</td>
<td>57.73</td>
</tr>
<tr>
<td>Reward delivery timeline</td>
<td>&lt; 10</td>
<td>762</td>
<td>66.96</td>
</tr>
<tr>
<td></td>
<td>≥ 10</td>
<td>376</td>
<td>33.04</td>
</tr>
<tr>
<td>Number of images</td>
<td>&lt; 20</td>
<td>623</td>
<td>54.75</td>
</tr>
<tr>
<td></td>
<td>≥ 20</td>
<td>515</td>
<td>45.25</td>
</tr>
<tr>
<td>Number of progress updates</td>
<td>&lt; 10</td>
<td>979</td>
<td>86.03</td>
</tr>
<tr>
<td></td>
<td>≥ 10</td>
<td>159</td>
<td>13.97</td>
</tr>
<tr>
<td>Minimum investment amount</td>
<td>&lt; 100</td>
<td>920</td>
<td>80.84</td>
</tr>
<tr>
<td></td>
<td>≥ 100</td>
<td>218</td>
<td>19.16</td>
</tr>
</tbody>
</table>

Source: Raw data from the Crowdfunding Net (2019)
The significant and positive effect of the number of progress updates on crowdfunding speed at the 5% level confirms hypothesis $H_8$. This shows that eliminating asymmetric information can increase the crowdfunding speed. The minimum investment amount has a positive effect on crowdfunding speed at the 10% level, thus supporting $H_9$. Therefore, increasing the investment threshold can increase the crowdfunding speed.

Model 2 confirms the significant effects of the number of crowdfunding platforms, number of altruistic participants, availability of a lottery and number of progress updates on the number of comments. However, the five independent variables (availability of trademark registration certification, initiator type, reward delivery timeline, number of images and minimum investment amount) do not pass the significance test; thus, there is no mediation effect. Comparing the regression results of model 1 and model 3, we find that the significant effect of the number of crowdfunding platforms, number of altruistic participants, availability of a lottery and number of progress updates on crowdfunding speed decrease in model 3. Thus, the number of comments has a mediating effect on the relationship between some independent variables and the dependent variable, partially supporting hypothesis $H_{10}$. The number of comments reduces information asymmetry, thus increasing the crowdfunding speed.

Robustness assessment. To test the robustness of the regression results and explore the effect of the sample selection on the final results, we use different sample groups and alternative variables. We apply our model to 823 samples with funding targets below USD 1,449.59 and 569 samples with a funding success rate less than or equal to 110%. In addition, we use daily average completion rate as the dependent variable to test the robustness of our model. The results show that our findings continue to hold for different sample groups and a different dependent variable [Tables S1–S2; Tables S1–S2 in electronic supplementary material (ESM); for the supplementary material see the electronic version].

**CONCLUSION AND IMPLICATIONS**

**Conclusion.** This review created an evaluation indicator system to investigate the factors that affect the quick achievement of crowdfunding targets in the agri-food industry, based on customer delivered value theory. Our findings will help initiators set reasonable project duration to shorten the time taken to achieve their funding target. The results are as follows. First, initiators should actively apply for and dis-
play trademark registration certification to enhance the product’s value. Reducing information asymmetry decreases the concerns of potential investors, thus reducing the time taken to attain the funding target. Second, a good development environment can improve the person value of crowdfunding, which plays an active role in hastening crowdfunding speed. Whether to include altruistic participants in a project requires careful consideration. Third, initiators should pay close attention to the timely delivery of the reward and the display of images. A lottery has a negative effect on the speed of raising funds. Fourth, the timely release of information related to the progress of a project can encourage the crowd to invest, reducing the time needed to raise funds. Fifth, initiators should increase the minimum investment amount to improve the monetary value of projects and accelerate crowdfunding speed. Finally, initiators should implement measures to encourage the potential crowd to participate in project comments, because this enhances the value perception of crowdfunding.

Implications for theory. This study extends customer delivered value theory, and contributes to the literature in two respects. First, we identify several new factors that influence the value perception of a crowd in crowdfunding. Second, from the perspective of the five dimensions of customer delivered value theory, we examined which factors speed up the raising of funds in the agri-food industry, thus expanding on the application of customer delivered value theory. Previous studies employ customer delivered value theory, and contributes to the literature in two respects. First, we identify several new factors that influence the value perception of a crowd in crowdfunding. Second, from the perspective of the five dimensions of customer delivered value theory, we examined which factors speed up the raising of funds in the agri-food industry, thus expanding on the application of customer delivered value theory.

Implications for practice. From a practical perspective, our findings suggest several implications for agri-food entrepreneurs who want to obtain financial support from crowdfunding platforms. First, initiators should carefully design a project plan based on a detailed investigation, and should take reasonable measures to attract backers. Second, crowdfunding platforms should strengthen the supervision of initiators to reduce the risk of information asymmetry for the crowd. Third, regulators should encourage agricultural entrepreneurs to apply for trademark registration certifications for high-quality agri-food products, and set up funds to support the development of crowdfunding.

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