Exploring Crowdfunding Performance of Agricultural Ventures: Evidence from FlyingV in Taiwan

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Abstract. Crowdfunding has been growing rapidly as a new financing source for ventures. To support the application of crowdfunding for the agricultural sector, this study explored the characteristics and crowdfunding performance of agricultural projects. A total of 112 projects were selected from one of the largest crowdfunding platforms in Asia. The results showed most of the agricultural projects were grouped under the categories of leisure, public, or local. Within two months of the funding duration, each of these agricultural projects pledged an average of 6,880.9 USD from 123 contributors. But the total share and the overall success rate of agricultural projects remained low. Furthermore, project category, funding target, and number of contributors had significant effects on the crowdfunding performance of the agricultural projects. The findings suggest project initiators may need to diversify project categories, set a relatively low funding target, and expand social network to increase number of contributors.

Keywords: Crowdfunding performance · Reward-based crowdfunding · Alternative financing · FlyingV · Agricultural development · Innovative ventures

1 Introduction

In recent years, crowdfunding has emerged as a new approach for individuals and teams to obtain financial support from people across the world through online platforms. Many start-ups and innovative ventures are able to apply for funds from end customers or potential sponsors in the online community rather than from banks or other traditional funding systems. Since its first platform launched in 2001, crowdfunding has been growing rapidly [1]. In 2014, there were 1,250 platforms which collectively raised $16.2 billion worldwide. The estimated funding volumes had even doubled in 2015 and reached to $34.4 billion, particularly because of the expansion in Asia [2]. Through these online platforms, numerous project categories, including real estate, sports, entertainment, art, and healthcare, have been financially supported [3]. Crowdfunding substantially enables access and opportunities for entrepreneurs and contributors to meet their needs.

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In many developing countries, the agricultural sector is the core economy. But capital is often not accessible for small-scaled agricultural ventures. With the rising trend of crowdfunding, it may serve as an alternative channel to bring capital and resources for agricultural development and stimulate industry innovations. Many micro-financing projects also proved small amount of credit may effectively reinforce entrepreneurship and improve community income in rural areas and developing countries [4–6]. Nevertheless, the understanding of crowdfunding adoption in the agricultural sector is limited. Current studies mainly focus on the funding system itself rather than the venture aspect of various industries. To gain progressive insight of how this new online mechanism may benefit agriculture, this study seeked to answer the following questions: (1) What were the funding characteristics set in agricultural projects for crowdfunding? (2) How successful were agricultural projects in crowdfunding? (3) What was essential in agricultural projects to succeed in crowdfunding?

To support the crowdfunding adoption of agricultural ventures, this study targeted one of the largest crowdfunding platforms in Asia to investigate the features and crowdfunding performances of agricultural projects. The relationship between funding characters of agricultural projects and their crowdfunding performances would also be explored. The results may provide valuable knowledge of how agricultural ventures can succeed in crowdfunding.

2 Literature Reviews

2.1 Crowdfunding

Crowdfunding is a new form of finance sources for entrepreneurial individuals and groups to draw relatively small contributions of funds from a relatively large number of audience using the Internet [7]. The concept of crowdfunding originated from crowdsourcing, which gathers ideas, feedback, and solutions from the crowd to create enterprise activities [8]. There are four major models of crowdfunding: donation, lending, reward, and equity crowdfunding. The donation crowdfunding can be regarded as the most traditional form of crowdfunding. Contributors do not receive any reward for their donations. But with the increasing competition for funds, some proposers of free donation projects also start to provide incentives for their contributors. With the second type, lending crowdfunding, contributors receive monetary compensation, such as profit sharing. The reward crowdfunding, on the other hand, offers non-monetary compensations. This is also the most prevalent approach and frequently operationalized using a kind of pre-selling or pre-ordering of the final product or service. As for the equity crowdfunding, contributors receive shares or similar rights in return for their contribution. Moreover, contributors may not only support the project financially but also participate in further aspects of the projects, e.g., designing products [7].

In addition to the primary role for financing ventures, crowdfunding can also serve for multiple purposes, including the marketing function to raise public awareness of the products, the testing function to validate market potentials of the products, and the legitimizing function to obtain public approval of the products through early societal interaction [7, 9, 10]. These functions of crowdfunding not only help the cost sharing of

the commercialization of innovation, but also reduce the risk of launching wrong products and services that lead to failure. The nature that anyone can be an investor or a project initiator of crowdfunding without requiring large capital or high profit [11] also facilitates the realization of creative ventures. Many small and medium-sized enterprises (SMEs) have obtained financing through crowdfunding since the global financial crisis [12]. Crowdfunding is also regarded as a potential trigger for the economic growth and social advancement in developing countries.

The high expectation comes along with the impressive expansion of crowdfunding in recent years. An industry report showed crowdfunding increased 166% from $6.1 billion USD in 2013 to 16.2 billion USD in 2014, and then achieved $34.4 billion USD, another remarkable increase of 112%, in 2015 [2]. While North America remains leading, and accounts for half of the crowdfunding market with 17.2 billion USD, Asia has overtaken Europe (6.5 billion USD and 19%) as the second largest market with 10.5 billion USD and a share of 31% in 2015. The funding volume of South America, Oceania, and Africa, on the other hand, reached 85.7, 68.6, and 24.1 million USD, respectively.

The growing crowdfunding movement has attracted research on the behavior of crowdfunding communities and the determinants of crowdfunding success. A study indicated the motivations of entrepreneurs to engage in crowdfunding are not merely for capital, but also for awareness, connection, approval, control, and learning [1]. On the other hand, contributors are propelled not simply by rewards, but also by charity, ideals, and community identification. Nevertheless, fear of failure can be a deterrent of crowdfunding participation to project initiators as lack of trust can be another one to contributors. Additionally, other studies have found the success of crowdfunding campaigns can be related to several factors, and the main ones which have been repeatedly highlighted include the scale of funding targets, minimum funding amount, days of campaign duration, and number of contributors [7, 13–18]. After the fundraising targets are achieved, contributors' satisfaction in the implementation process of crowdfunding projects may still be affected by entrepreneur activeness, contributor participation, project novelty, delivery timeliness, and product quality [19].

2.2 FlyingV

FlyingV, founded in April 2012, is a rewards crowdfunding platform registered in Taiwan. To be launched on FlyingV, each project needs to be registered with a heading, fundraising goal, an abstract within 100 words, a start date, a cover picture, a short campaign video, a brief proposal within 2,000 words, and reward items with the expected delivery dates for contributors [20]. In accordance with their features, the projects would also be classified into twelve categories, including design, music, film, technology, art, leisure, public, local, sport, game, publishing, and travel.

With an all-or-nothing model, FlyingV charges an 8% fee for successful campaigns. If the goal is not met, the collected money is refunded to contributors. The minimum funding goal of a project is 5,000 NTD (about 160 USD) within a time limit from 7 to 60 days. It is estimated that a project lasting 45–60 days on FlyingV would have between 6,000 and 10,000 views [20]. Most of the contributors are young people with an average age of 30 years old.

By June 2016, 785 projects have successfully achieved their fundraising goals which collectively solicited over 326 million NTD (approximately 10 million USD) on FlyingV [21]. The highest funding was 25.9 million NTD (about 0.8 million USD) for a font design project, which largely surpassed its setting goal of 1.5 million NTD. The top three categories of successful projects with the highest funds accumulated were public, design, and technology, and they accounted for 30.3%, 23.8%, and 8.2% of the total funds raised, respectively. The entire success rate among the 1,700 launched projects was about 46%. In addition, projects of music (72.7%), local (64.6%), and game (56.9%) had the highest success rates.

Currently, FlyingV is also planning to gather ended projects to curate online exhibitions with different themes, such as agriculture [22]. Project initiators will have opportunities to share their crowdfunding experiences, which may not only deepen the relationship between initiators and contributors, but also provide references for future project initiators.

3 Research Methods

3.1 Research Framework

To support agricultural ventures through crowdfunding, this study attempted to identify the characteristics of agricultural projects on a crowdfunding platform. Furthermore, the influences of project category, funding target, funding duration, and number of contributors on the crowdfunding performance of these agricultural projects were also explored. The findings may help develop strategies for agricultural ventures to successfully pledge required capital on crowdfunding platforms (Fig. 1).

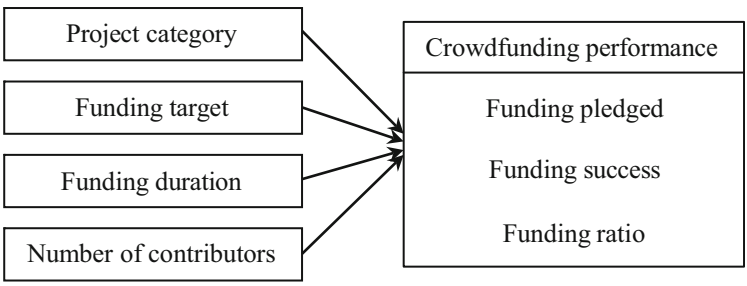

Fig. 1. Research framework and key variables of this study.

3.2 Data Collection and Analyses

The crowdfunding campaigns of agricultural projects between April 2012 and June 2016 on the crowdfunding platform FlyingV were targeted in this study. A total of 112 agricultural projects were identified from 1,693 crowdfunding projects. Quantitative data of the key variables were individually obtained from the text content of crowdfunding campaigns of these agricultural projects on FlyingV. Table 1 displays the

measurement descriptions of the variables. The project category and funding success, in particular, were measured using dummy variables. In addition, the SPSS 18.0 statistical software was adopted in this study to display descriptive statistics, linear regression models for funding pledged and funding ratio as well as a binary logistic regression model for funding success.

Table 1. Measurement descriptions of variables collected in the study.

Variables	Measurement descriptions
Project category	Dummy = 1 if project category is one of the major three categories of the agricultural projects; 0 otherwise
Funding target (1,000 NTD)	The total amount of capital that project initiators aimed to raise from the crowdfunding campaign
Funding duration (days)	The number of days from the start to the end of the crowdfunding campaign
Number of contributors (persons)	Number of people provided fund to the project
Funding pledged (1,000 NTD)	The total amount of capital raised by the end of the crowdfunding campaign
Funding success	Dummy = 1 if funding pledged is greater than or equal to funding target; 0 otherwise
Funding ratio	The ratio of funding pledged over funding target

4 Results and Discussion

4.1 Profile Analysis of the Agricultural Projects

Table 2 shows the descriptive statistics of the 112 targeted agricultural projects on FlyingV. Three categories, leisure (46.4%), public (20.5%), and local (8.9%) accounted for the majority of these projects. The average amount of funding targets was 262,959.9 NTD. Their funding duration tended to be long with a mean of 52.9 ± 14.1 days, relatively close to the top limit of two months set by FlyingV. Each project attracted 123.0 contributors and pledged 215,026.8 NTD on average. But the results indicated most of the agricultural projects were unsuccessful (56.3%). The funding ratio of pledge over target was merely 0.82.

Table 2. Descriptive statistics of the agricultural projects on FlyingV from April 2012 and June 2016.

Characteristic	N	%	Sum	Mean	SD
Project category	112	100.0	–	–	–
• Public	23	20.5	–	–	–
• Design	9	8.0	–	–	–
• Art	0	0.0	–	–	–
• Technology	5	4.5	–	–	–

(*continued*)

Table 2. (*continued*)

Characteristic	N	%	Sum	Mean	SD
• Publication	7	6.3	–	–	–
• Film	4	3.6	–	–	–
• Leisure	52	46.4	–	–	–
• Travel	1	0.9	–	–	–
• Local	10	8.9	–	–	–
• Game	1	0.9	–	–	–
• Sport	0	0.0	–	–	–
• Music	0	0.0	–	–	–
Funding target (1,000 NTD)	112	–	29,451.5	263.0	293.2
Funding duration (days)	112	–	–	52.9	14.1
Number of contributors (persons)	112	–	13,771	123.0	490.4
Funding pledged (1,000 NTD)	112	–	24,083.0	215.0	644.7
Funding success	112	–	–	–	–
• Unsuccessful	63	56.3	–	–	–
• Successful	49	43.8	–	–	–
Funding ratio	112	–	–	0.82	1.18

4.2 Factors to Funding Pledged of Agricultural Projects

The results of the linear regression analysis (see Table 3) showed project category, funding target, and number of contributors would significantly affect the funding pledged of the agricultural projects ($R^2 = 0.937$, $p < .001$). The projects with higher funding targets or number of contributors tended to have higher amount of funding pledged. But the projects grouped into the three major categories, namely "leisure", "public", and "local" seemed to pledge less amount of funding than projects in other categories.

Table 3. Linear regression model for funding pledged of the agricultural projects.

Variable	B	S.E.	R^2	F	Significance of the model
Constant term	29.629	38.287	0.937	533.202^{***}	<.001
Project category	-13.249^{*}	5.713			
Funding target (1,000 NTD)	0.426^{***}	0.057			
Number of contributors	1.167^{***}	0.034			

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$; n = 112

4.3 Factors to Funding Success of Agricultural Projects

Table 4 shows that the binary logistic regression model for funding success of the agricultural projects was significant ($\chi^2 = 87.261$, $p < .001$). The model explains 72.5% of the variation of the funding success. Projects with higher number of

contributors were more likely to be successful. But higher funding targets, on the other hand, decreased the likelihood of funding success of the agricultural projects.

Table 4. Binary logistic regression model for funding success of the agricultural projects.

Variable	B	S.E.	Nagelkerke's pseudo R^2	Chi^2	Significance of the model
Constant term	−0.894	1.046	0.725	87.261***	<.001
Project category	0.988	0.722			
Funding target (1,000 NTD)	−0.003*	0.002			
Funding duration (days)	−0.029	0.021			
Number of contributors	0.070***	0.015			

*$p < .05$, **$p < .01$, ***$p < .001$

4.4 Factors to Funding Ratio of Agricultural Projects

The third model using funding ratio as the dependent variable was also found significant ($R^2 = 0.325$, $p < .001$). The results showed funding target was negatively affecting funding ratio of the agricultural projects while number of contributors remained a positive factor to the crowdfunding performance (see Table 5).

Table 5. Linear regression model for funding ratio of the agricultural projects.

Variable	B	S.E.	R^2	F	Significance of the model
Constant term	0.855***	0.124	0.325	26.293***	<.001
Funding target (1,000 NTD)	−0.001*	0.000			
Number of contributors	0.001***	0.000			

*$p < .05$, **$p < .01$, ***$p < .001$

5 Conclusions

Overall, this study aims to reveal the potential of crowdfunding for agricultural ventures. Since crowdfunding has grown rapidly in developing regions, it may serve as a supportive financing system for small-scaled innovative agricultural ventures. Using the existing agricultural projects from one of the largest crowdfunding platform in Asia, this study conducted an empirical approach to identify the characteristics of agricultural projects and relevant factors of crowdfunding performances. The major findings are summarized as follows:

First, agricultural projects did not have a specific category in the crowdfunding platform, but grouped into diverse categories, mostly "leisure", "public", and "local" categories. So far these projects only accounted for a small share of the total projects proposed (6.6%) and succeed (6.3%) as well as the total funding pledged (6.9%). Furthermore, their funding duration tended to be as long as the default days of top limit,

but the crowdfunding success rate (43.8%) and funding ratio (0.82) of the agricultural projects still needs to be improved.

Second, project category, funding target, and number of contributors were found to have significant effects on the crowdfunding performance of the agricultural projects. The findings imply project initiators may diversify and group their projects into other categories, rather than "leisure", "public", and "local" categories. The funding target should also be reasonable and relatively low. Also, project initiators may use multiple media effectively to extend the social network and increase the number of contributors. To fulfill the promising potential of crowdfunding for agricultural ventures, further researches are encouraged.

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