

The Determinants of Reward-based Crowdfunding Success in Turkey

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Abstract

This study investigates success factors of reward-based crowdfunding projects in Turkey. In addition to common success drivers that have been used previously, we propose two consumption related macroeconomic factors (consumer confidence and inflation). By using binary logistic regression, we find that consumer confidence and inflation affect funding success.

Keywords: Crowdfunding, success factor, consumer confidence, inflation, binary logistic regression

JEL Codes: L26, G23, C51

1. Introduction

Crowdfunding (CF) is an alternative way of funding for commercial, cultural and artistic new projects, where project owners start a campaign on a web platform and try to convince large number of individuals to support their projects with relatively small financial contributions. CF platforms have been widely used in the US and developed EU countries since early 2000s, but crowdfunding is relatively new phenomenon in most emerging countries. There are three main types of CF: reward-based, equity-based and lending-based. In this study, we analyze only reward-based CF method which is the most popular in practice. In a reward-based CF project, backers provide funding in return for pre-order of a new product with a better price, but there is risk of undelivered product in case of failed projects. Funding a reward-based CF project can be accepted as consumption decision with maximum financial loss of funding amount.

Success drivers of reward-based CF projects have been widely investigated in various empirical studies. Pioneering study of Mollick (2014) defines quality signals as social capital of project owner and preparedness of project and finds these variables as significant success factors of reward-based CF projects in the US. Petitjean (2018) also examine the determinants of reward-based crowdfunding success factors in France. Clauss et al. (2018) analyze the role of social interaction as success factor in Germany and Colombo et al. (2015) investigate the importance of internal social capital for funding success. Yeh et al. (2019) examine success drivers in two developing CF markets (Taiwan and Japan) by emphasizing marketing-related variables.

Majority of these studies focus on the characteristics of projects, project owners and backers as possible success factors. Monetary goal, number of backers, duration of CF campaign, communication, social capital of project owners are some significant success factors that have been discovered in the previous empirical studies. However, consumption-related macroeconomic variables such as consumer confidence index and inflation rate may influence the probability of success for a reward-based CF project as funding is a consumption decision. Consumer Confidence Index (CCI) reflects expectations of households concerning future consumption and saving behavior. A higher CCI means higher tendency to consume (Ludvigson, 2004). As a result of such causal relationship between CCI and consumption, the probability of success for a reward-based CF project is expected to increase if it is started during a period with a higher CCI score. In addition, macroeconomic uncertainty, represented with a lower CCI score, may aggravate concerns about uncertainty of the project to be achieved. Secondly, reward-based CF projects are more likely to be funded in relatively low inflation rate environment where people do not experience noticeable changes in their purchasing power. High inflation may deter people from supporting reward-based CF projects by eroding real value of household income and wealth.

The aim of this study is to investigate funding success factors of reward-based CF projects in Turkey. To the best of our knowledge, this study is the first to consider consumption-related macroeconomic variables as success factors for reward-based CF projects. Most empirical studies on CF cover only US or developed EU countries by ignoring emerging countries due to data availability. In Turkey, there are two active reward-based CF platforms (arikovani and fongogo) and 6.4 million Turkish Liras were collected since 2013. To the best of our knowledge, Turkey is not-yet analyzed CF market

and this is the first study to investigate possible success factors for reward-based projects in developing CF market of Turkey.

2. Data and Methodology

The hand-collected data is based on the online information of two active platforms in Turkey; arikovani and fongogo. Arikovani mainly accepts technology-oriented CF campaigns, whereas fongogo offers projects from various categories like movies, arts and innovation. Since crowdfunding is a relatively new concept in Turkey, we do not apply a time constraint and collect all available data from the platforms. We exclude the projects with funding goal lower than 3000 Turkish Liras. Based on this criterion, our sample covers 164 projects over the time period of 2013-2019. The platforms in Turkey follow All-Or-Nothings model where the project owner receives nothing unless the monetary goal is reached (Cumming et al. 2015).

In the Figure 1, these failed and successful projects’ distributions are represented respectively.

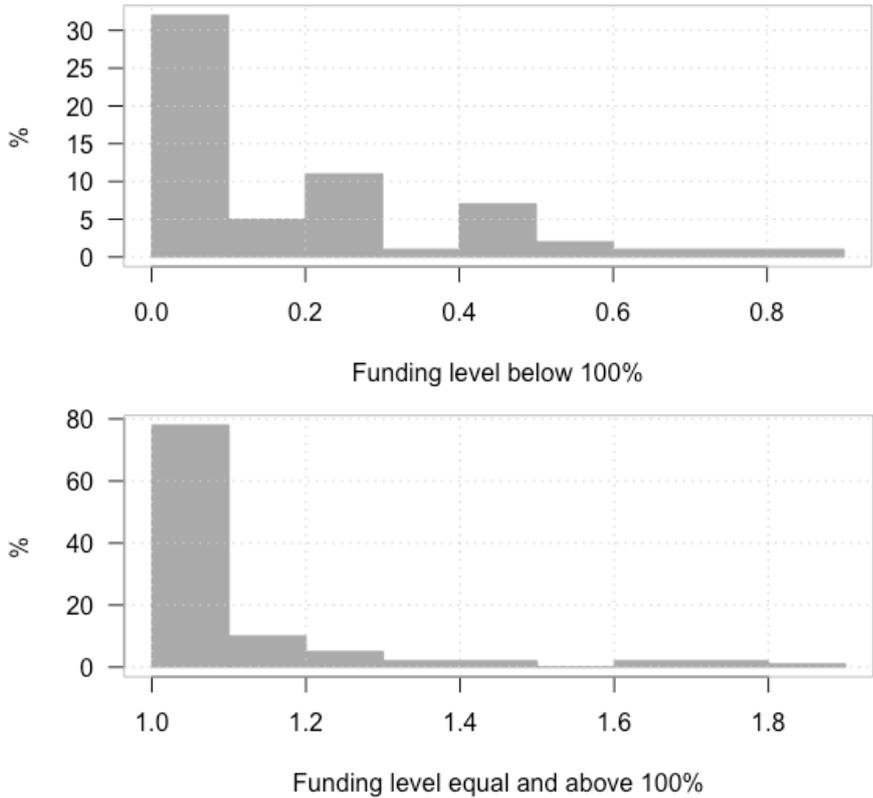


Figure 1. The distribution of Funding Level data

Table 1 presents the preliminary statistics of our data. 103 of all projects are funded successfully whereas other 61 are failed to achieve the goal. The average amount of raised fund is 61.865 Turkish Liras for successful projects and the average funding level (total pledge / target) of successful projects is 1.06 and this ratio is 0.15 for failed projects. This points out the importance of determining level of target amount rationally. The average number of backers is 103 people and average pledge is 402 Turkish Liras per backer. CCI

and inflation rate series fluctuate considerably over the sample period that can easily affect consumer spending.

Table 1. Descriptive Statistics

Variables	Mean	Sd	Median	Min	Max	Type of variable
Funding success	0.63	0.48	1	0	1	Dummy
Goal	54891.89	81795.21	25000	3400	783955	Metric
Backers	103.43	209.05	43	1	1994	Metric
Prize	0.13	0.34	0	0	1	Dummy
Updates	2.37	6.21	1	0	71	Metric
Comments	8.23	20.70	0	0	129	Metric
Twitter Followers	1285.06	3562.68	438.5	1	33460	Metric
Platform	0.69	0.46	1	0	1	Dummy
Consumer Confidence Index	66.01	6.12	67.31	55.28	78.06	Metric
Inflation Rate	11.8	4.46	10.18	7.32	19.91	Metric

Note: Number of observations are 164.

In total, we use 9 variables in this study. The descriptions of the variables are as follows:

Funding success: Funding success is our dependent variable. It is 1 if the project reaches monetary goal, 0 otherwise.

Goal: Goal is total targeted monetary value determined by project owner at the beginning of the campaign.

Backers: Total number of backers reported on the platform for each project.

Prize: It is 1 if the project idea wins a prize or reward before the starting date of CF campaign, 0 otherwise.

Updates: Total number of updates (new information) from project owners during campaign period. These are posted online to inform the platform users.

Comments: Total number of comments from the platform users during campaign period. These are posted online to criticize or support project owners.

Twitter Followers: Total twitters followers of project owners.

Consumer Confidence Index (CCI): CCI is a proxy for expectations of households concerning future consumption and saving behavior. It is index score announced monthly.

Inflation Rate: Annual inflation rate announced monthly.

Platform: It is 1 if the project offered on arikovani platform, 0 otherwise.

The causal relationship analysis is a common methodology to explain the crowdfunding success (Mollick 2014, Petitjean 2018, Clauss et al. 2018, Yeh et al. 2019). In our empirical study, to investigate the success factors of crowdfunded projects we run

multiple logistic regression model. A binary logistic regression model fits to the dichotomous nature of the dependent variable that represents the funding success or failure of the projects. Beyond the explanatory variables used in previous empirical studies, we add new macroeconomic factors, CCI and inflation rate, and build two different models, because of the nature of collinearity between these two variables. In model 1, we use CCI with other variables, while we use inflation rate in model 2. In keeping with release date, we study with one period-lagged values of CCI and inflations rates. We consider goal and twitter follower variables in logarithmic scale.

3. Empirical Results

The analysis results of the models are represented in the Table 2. The results of model 1 shows that CCI affects funding success of reward-based CF projects. Higher level of the consumer confidence index is more likely to lead to a successful funded project on platforms. Consistent with the existing literature, the variables of goal, backers, prize, updates and twitter followers are associated with the funding success. The signs of the coefficients are reasonable and support the previous studies. The findings of model 2 indicate the importance of inflation rate on probability of funding success for reward-based CF projects. In other words, low inflationary environment is more likely to lead to a successful funded project. Similar to model 1 results, we find that goal, backers, inflation rate, updates and twitter followers influence the funding success. The sign of the coefficient of inflation rate is negative as expected.

Thus, we find that stable macroeconomic environment represented by higher consumer confidence and lower inflation positively affects the backers' decisions on supporting CF projects.

Table 2. Results of the Logistic Regression Analysis (dependent variable is funding success)

	Model 1				Model 2			
	α	Wald	p-value	$Exp(\alpha)$	α	Wald	p-value	$Exp(\alpha)$
Estimation Results								
Constant	0.860	1.5	0.22	2.363	1.945***	11.6	0.00066	6.996
Goal	-0.141**	7.8	0.0053	0.867	-0.141**	7.8	0.0053	0.867
Backers	0.0006***	12.6	0.00039	1.0006	0.0006***	12.6	0.0004	1.0006
Prize	0.204*	3.9	0.048	1.227	0.184 .	3.1	0.077	1.201
CCI	0.013*	5.4	0.02	1.013				
Inflation Rate					-0.019*	5.3	0.022	0.981
Updates	0.0129*	5.1	0.024	1.013	0.0118*	4.2	0.041	1.011
Comments	0.0018	0.7	0.40	1.001	0.0020	0.89	0.35	1.002
Twitter Followers	0.0350*	4.3	0.038	1.035	0.0353*	4.4	0.037	1.036
Platform	-0.004	0.0013	0.97	0.995	0.029	0.052	0.82	1.029
Goodness of fit statistics								
Cox and Snell (ML)			0.247				0.246	
Nagelkerke (Cragg & Uhler)			0.3302				0.329	
Correct Cases Classified			42.7%				43.3%	

Note: Significance levels *** for $p < 0.001$; ** for $p < 0.01$; * for $p < 0.05$; . for $p < 0.1$. α indicates the coefficient of the models

As to goodness of fit measure, Pseudo R^2 results of Cox and Snell and Nagelkerke Test suggest that approximately 25% and 33% of both model is explained by the binary logistic model. The comparison of predicted and observed funding levels give the percentages of corrected cases as 42.7% and 43.3%, respectively.

4. Conclusion

In this study, we examine reward-based crowdfunding success factors in Turkey by considering consumer confidence and inflation as new determinants. By using binary logistic regression model, we analyze 164 projects during the period of 2013 – 2019. We find that monetary goal, number of backers, updates from projects, comments on projects and twitter followers of project owners are significant common factors for funding which seems to confirm the consistency of our results with previous findings in the literature. More importantly, we find that funding decisions of backers are affected by consumer confidence and inflation. Specifically, higher consumer confidence and low inflationary environment increase the probability of success for reward-based CF projects. Our results represent initial evidence about developing CF market of Turkey and these findings should be supported with additional data as this market evolves in the future.

References

- Clauss, T., Breitenecker, R. J., Kraus, S., Brem, A., & Richter, C. (2018). Directing the wisdom of the crowd: the importance of social interaction among founders and the crowd during crowdfunding campaigns. *Economics of Innovation and New Technology*, 27(8), 709-729. DOI: 10.1080/10438599.2018.1396660
- Colombo, M. G., Franzoni, C., & Rossi-Lamastra, C. (2015). Internal social capital and the attraction of early contributions in crowdfunding. *Entrepreneurship theory and practice*, 39(1), 75-100. DOI: 10.1111/etap.12118
- Cumming, D. J., Leboeuf, G., & Schwienbacher, A. (2015). Crowdfunding models: Keep-it-all vs. all-or-nothing. *Financial Management*. DOI: 10.1111/fima.12262
- Ludvigson, S. C. (2004). Consumer confidence and consumer spending. *Journal of Economic perspectives*, 18(2), 29-50. DOI: 10.1257/0895330041371222
- Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of business venturing*, 29(1), 1-16. DOI: 10.1016/j.jbusvent.2013.06.005
- Petitjean, M. (2018). What explains the success of reward-based crowdfunding campaigns as they unfold? Evidence from the French crowdfunding platform KissKissBankBank. *Finance Research Letters*, 26, 9-14. DOI: 10.1016/j.frl.2017.11.005
- Tsai-Lien Yeh, Tser-Yieth Chen & Cheng-Chun Lee (2019) Investigating the funding success factors affecting reward-based crowdfunding projects, *Innovation*, 21:3, 466-486. DOI: 10.1080/14479338.2019.1585191