CROWDFUNDING: ANTECEDENTS OF NUMBER OF BACKERS AND SUCCESS OF A PROJECT

Md Fourkan

PhD student in the Department of Marketing and Entrepreneurship
Kent State University

ABSTRACT: *This paper offers a discussion of the projects of a crowdfunding platform and exposes the determinants of the success and failure dynamics of crowdfunding projects. We have shown with two different models' estimation that the probability of success comes through attracting a greater number of backers and demonstrated the antecedents of attracting sufficient number of backers. Drawing around 303,582 projects from an artistic crowdfunding platform this paper attempts to show that number of backers of a project depend on factors such as goal amount, time between project start and end date, amount pledged by backers, and the main category of the project. The project success ultimately comes through the accomplishment of being able to bring adequate number of backers. We have contributed to the crowdfunding projects' success-failure dynamics research by offering important insights with two different models and discussing options that can still be explored in this area.*

KEY WORDS: crowdfunding, alternative financing, new venture financing, entrepreneurship, backers.

INTRODUCTION

Crowdfunding is a platform where many people donate small amount of money to new ventures, social or artistic or cultural projects, and individuals in need of money for any legitimate cause. This type of crowdfunding platforms has been very commonplace and feasible because of availability of internet. For instance, A. K. Agrawal, Catalini, and Goldfarb (2011) mention that the most remarkable feature of "crowdfunding" is the broad geographic dispersion of investors in small, early-stage projects. Crowdfunding nullifies existing theories that predict entrepreneurs and investors will be co-located due to distance-sensitive costs. Analyzing projects from a crowdfunding setting for financing musical projects they find that average distance between artists and investors is about 3,000 miles, suggesting a reduced role for spatial proximity. Consequently, anyone can initiate a legitimate project on art, social or personal causes with a short description or video of the project and urge people to support the scheme given innovative ideas is there (A. Agrawal, Catalini, & Goldfarb, 2014). Moreover, according to Fundly, a non-profit and charity fundraiser, crowdfunding raised close to USD 30 billion in 2019 and the market can observe a compound annual growth rate of over 16% for next decade (Markets, 2021).

Although many papers in crowdfunding literature have focused mainly on exploratory studies of projects' success, however, there are scarcity of research on other aspects such as backers' dynamics. This paper presents a discussion of the projects of a crowdfunding platform and reveals the determinants of the success and failure dynamics of crowdfunding projects. In this analysis we have used data scrapped from a crowdfunding platform namely Kickstarter that is a public benefit corporation and it maintains a global presence of this crowdfunding platform. We have looked at this artistic focused crowdfunding platform as it is one of the older crowdfunding platforms and there exist a number of empirical works which employed smaller number of projects from this site for analysis. One important note is that although Kickstarter was initially providing funding opportunity for only artistic projects related to dance, music, or theatre, however, now any projects other than arts such as food, technology, comics, crafts, photography, and publishing related projects can finance their new venture initiative through the Kickstarter platform.

However, we have a major scope to use data from this platform to further contribute to the crowdfunding area and utilized a gigantic data set unlike many other works done in crowdfunding research before. Furthermore, the paper explores the antecedents of the maximum number of backers of a crowdfunding project particularly the factors that facilitate a greater number of backers to fund a project.

Problem Statement
In the crowdfunding literature, empirical works that are conducted are still not filled, and more scopes are there to explore this area further. So, doing an analysis which will look at this emerging topic from a few aspects is justified. We would like to see the impact of a few variables, that are observable from the secondary crowdfunding data sites, on two important outcome variables in crowdfunding literature: success and number of backers. Our first research focus is to determine the factors that are facilitating the success of crowdfunding projects. Success can be defined as whether a project has reached its goal amount set during the project initiation in a platform and reaching its goal amount means the project gets the pledged amount of money from the funders of the platform. Otherwise, a project gets nothing for the initiative from the platform. This question has been consulted by researchers previously using different data sets from distinct crowdfunding sites. For instance, in their paper (Zheng, Wan, Chen, & Wang, 2014) developed a research model to investigate the antecedents of crowdfunding project success and find that meeting specifications is of more important than delivery timeliness.

However, from crowdfunding literature it can be concluded that success of crowdfunding projects depends mainly on number backers (Kuppuswamy & Bayus, 2018). Backers of crowdfunding projects promise to provide a certain amount to a project, and it is delivered by bakers to the founders once a project fulfils its goal amount set during the project launch. Otherwise, funders do not require to pay anything to the founder/s of a project. Yet, there are literally very few papers that looked at the factors that encourage backers to pledge a certain amount to a project (Wang, Li, Liang, Ye, & Ge, 2018). So, our second crucial focus is to identify the factors that can be attributed to the attraction of a greater number of backers in pledging a certain amount for a project.

LITERATURE REVIEW

During the last few decades with the emergence of new technologies and internet, the field of innovation and entrepreneurship has ushered ways to small entrepreneurs and startups to come up with new ideas that has some business or societal impact. For instance, Tang, Baker, and An (2020) claim that the network of entrepreneurs has expanded significantly during the past decade as a result of the development of crowdfunding platforms.

Crowdfunding is an entrepreneurial attempt which was first created mainly in the creative activities comprising music, film and video, independent writers, journalists, publishers, creators of performing and visual arts, games, theatres etc. However, the presence of crowdfunding has spread so widely to other social projects and to broad humanitarian purpose to help individuals or groups or human causes or social issues (Hemer, 2011). Crowdfunding is the practice of funding a project or venture by raising small amounts of money from many people, typically via Internet (Dictionary, 2021). Kickstarter is one of the first crowdfunding platforms which make the word crowdfunding a mass word used by people in entrepreneurship field and to general public. Although many people think crowdfunding is a new phenomenon, however, it is existing for centuries as a concept (Calic, 2021). However, it got its momentum in the decade of 2010s because of the arrival of new technologies.

Moreover, in the 21st century, young generations are very dynamic and like more freedom by working on their own rather than working under some bosses. So, creative, and feasible projects in artistic, social, and business concepts are coming out frequently because of the growth of online funding platforms and what donors are getting is some satisfaction of donations (Osili, Bergdoll, Pactor, Ackerman, & Houston, 2021). These creative projects can manage finance from several crowdfunding platforms.

With technology changing every moment, and people are getting more access to resources in online to create their own creative projects, any initiative can get the tag of new venture if it can possess some potential to be viable. Consequently, in the field of entrepreneurship new ventures with creative ideas are finding substantial development over the short period of time. In a contemporary paper on crowdfunding, (Mollick, 2014) found that the success of crowdfunding efforts emerges from personal networks and original project quality. Some of the recent studies looked at the crowdfunding platforms based on specific project types such as nonprofit performing arts organizations only and how they find crowdfunding as a source of alternative funding (Boeuf, Darveau, & Legoux, 2014).

Some of the crowdfunding papers who investigated the antecedents of success of projects have gone a little further. For instance, using panel data of crowdfunding projects from GoFundMe, Yazdani, Chakravarty, and Inman (2021) examine how facial reactions expressed in displayed illustrations can lead to increased individual project triumph such as donation amount per project.

Based on the literature review presented above we have attempted to develop two models of crowdfunding projects based on a secondary data : one to identify the determinants of success and the other for determinants of number of backers for crowdfunding projects.

Research Hypothesis
Hypothesis 1: Crowdfunding projects' success depends on the number of backers of the projects.
Hypothesis 2: The same factors that contributes to success of a crowdfunding project facilitate in bringing a larger number of backers toward a project.
Hypothesis 3: Number of backers for crowdfunding projects varies based on the interaction of the timeline of projects and the category it falls into. [not tested]

Data Section
This is an exploratory study on crowdfunding and the objective of this paper is to provide evidence of factors leading to success of crowdfunding projects and the antecedents of number of backers of a project. Since this area is relatively new and emerging in entrepreneurship literature so an exploratory study can be appropriate to explore it from diverse aspects (Cornelius, Landström, & Persson, 2006). We have used data from Kickstarter, the largest and dominant crowdfunding platform, site for this analysis. This data is collected from a secondary data source Kaggle, a data science platform, where enthusiast data scientists provide datasets for analysis by members of the platform. Since Kickstarter in one of the pioneer crowdfunding platforms which is used in previous empirical works its data can be used to explore more on this research area. We used data for all the projects from Kickstarter site from its inception in 2009 to December 2017.

We had to do quite data cleaning for this huge data set where initially we had a total number of 331675 projects data. We have observed that some of the data in project goal amount and project pledged amount are outliers and having very large value which might increase the overall mean of these two variables, but this is outlier effect not true mean value. So, we have created benchmark of 50,000 as highest values for both variables consistent with the median value of the two variables. After this data cleaning we are left with a total number of 303582 observations. The mean of projects' goal, the amount of money they sought, is $50,000. The number of successful projects in the dataset is 125899, and the number of failed projects is 177683. We have provided the summaries of this data in Table 2. Our data represents projects from 23 countries indicating the diverse geographic locations from around the world. Besides, it has been possible because of widespread nature Kickstarter site worldwide which is a diverse source of financing for artistic projects in crowdfunding.

Table 1 Description of variables

Variable	Description
Success	Dichotomous variable coded success =1, failure=0
USD_Goal	The goal set by each crowdfunding project in U.S. dollar.
Backers	Numbers of backers who are willing to support the project.
USD_Pledged	Pledged amount by individual donor in U.S. dollar.
Age_of_Projects_Year	We have calculated the age as difference between project start date at the crowdfunding platform and the date of our analysis on 01/18/2021.
Time_Between_PL.DL	This is the difference between the project start date and project deadline in the crowdfunding platform.
Main_category	There are a total of 14 categories. Each project falls into any one category.
Country	The country of origin of a project.

METHODOLOGY

In this empirical paper, we are going to apply two methods of estimation to calculate our equations: OLS and probit model.

For our first equation we will use an OLS estimation where our dependent variable is number of backers.

$$\text{Backers} = B_0 + \beta_1 \text{ USD\_ Amount\_Goal} + \beta_2 \text{ USD\_Amount\_Pledged} + \beta_3 \text{ Age\_of\_Projects\_Year} + \beta_4 \text{ Time\_Between\_PL.DL} + \alpha_i \text{ Main\_Category Dummies} + e \qquad (1)$$

Backers is the number of backers of a project which is a continuous variable.

α_i represent all the coefficients of Main category dummies.

e is the error term which follow identical independent distribution (i.i.d) and follow normal distribution.

For our second equation we are going to utilize probit model estimation. The reason of using probit model is as our dependent variable is binary in nature with 0,1 outcome, and it is shown in the second equation below. It is estimated using maximum likelihood estimation method (Wooldridge, 2013) where the model takes the form as follows:

$$\text{Success} = 1 \; [B_0 + \beta_1 \text{USD\_ Amount\_Goal} + \beta_2 \text{ Backers} + \beta_3 \text{ USD\_Amount\_Pledged} + \beta_4 \text{ Age\_of\_Projects\_Year} + \beta_5 \text{ Time\_Between\_PL. DL} + \alpha_i \text{ Main\_Category Dummies} - e > 0] \qquad (2)$$

Here, Success is a binary dependent variable which takes the values of 0 and 1.

In maximum likelihood estimation the assumption is the probability that the dependent variable takes value of 1 given cumulative distribution of all covariates are greater than zero. The purpose is to maximize the likelihood of the intended event to occur. Because of the nonlinear nature of the distribution of the right-hand side of equation 2, we will later estimate the partial effect of each variable on success, our dependent variable.

Table 2 Descriptive Statistics of Main Variables

	N	mean	median	std.dev	min	max
State	303582	1.41	1.00	0.49	1.00	2.00
USD_ Amount_Goal	303582	8855.59	5000.00	10686.17	0.01	50000.00
Backers	303582	66.57	15.00	365.32	0.00	154926.00
USD_Amount_Pledged	303582	3237.90	496.00	6653.00	0.00	50000.00
Age_of_Projects_Year	303582	5.90	6.00	1.96	3.00	11.00
Time_Between_PL.DL	303582	33.62	30.00	12.69	1.00	92.00
Main_category	303582	8.43	8.00	3.95	1.00	15.00
Country	303582	20.06	23.00	6.15	1.00	23.00

Model Estimation

Probit model, a popular specification for a binary response model, is a type of regression where dependent variable takes only two values. In our case it is 1 when a project is successful and 0 when a project is failed. Probit model treats the same set of problems as logistic regression does using similar techniques. In the generalized linear model framework, the probit model uses a probit link function (Agresti, 2015, pp. 183-186). It is generally estimated using the maximum likelihood procedure (Aldrich & Nelson, 1984, pp. 48-65) and such an estimation is termed as probit regression.

Table 3 Correlation Matrix of Main Variables

		1	2	3	4	5	6	7	8
1	Success	-							
2	USD_ Amount_Goal	-0.21	-						
3	Backers	0.17	0.07	-					
4	USD_Amount_Pledged	0.45	0.27	0.28	-				
5	Age_of_Projects_Year	0.07	-0.08	-0.04	0.09	-			
6	Time_Between_PL.DL	-0.11	0.12	0.00	0.01	0.19	-		
7	Main_category	-0.03	0.05	-0.01	-0.01	0.03	0.04	-	
8	Country	0.05	0.01	0.01	0.06	0.28	0.04	0.00	-

RESULTS AND DISCUSSIONS

In table 3 above, we have shown the model free association of variables in the analysis. The correlation matrix not only show model free results but also provides a good benchmark of detecting one major econometric problem in multiple regression model i.e., multicollinearity. If any two independent variables are correlated above a threshold point usually 0.80 then researchers suspect a multicollinearity, and the consequences are very damaging for any regression model. if multicollinearity exists in a econometric analysis then the model results will change erratically given a small change in data or model. In our case we see none of the regressors variables are highly correlated, so we can assert that multicollinearity is not present in our models.

Table 4 OLS Regression Results for Number of Backers

	Dependent variable: Backers	
	Model 1	**Model 2**
Log (USD_ Amount_Goal)	-0.7	-1.000[**]
	(0.47)	(0.48)
USD_Amount_Pledged	0.015[***]	0.015[***]
	(0.00)	(0.00)
Age_of_Projects_Year	-13.000[***]	-11.000[***]
	(0.33)	(0.36)
Time_Between_PL.DL	0.210[***]	0.230[***]

	(0.05)	(0.05)
Main_categoryComics		44.000***
		(4.20)
Main_categoryCrafts		-6.7
		(4.60)
Main_categoryDance		-5.3
		(6.30)
Main_categoryDesign		54.000***
		(3.30)
Main_categoryFashion		-9.800***
		(3.40)
Main_categoryFilm&Video		-9.100***
		(2.70)
Main_categoryFood		-14.000***
		(3.40)
Main_categoryGames		81.000***
		(3.20)
Main_categoryJournalism		-4.7
		(6.10)
Main_categoryMusic		2.8
		(2.80)
Main_categoryPhotography		-2
		(4.20)
Main_categoryPublishing		8.500***
		(2.90)
Main_categoryTechnology		10.000***
		(3.40)
Main_categoryTheater		-1.4
		(4.20)
Constant	90.000***	42.000**
	(4.40)	(18.00)
Observations	303,582	303,582
R^2	0.08	0.086
Adjusted R^2	0.08	0.086

Note: *p**p***p<0.01 represent significance at 10,5 and 1 percent level, respectively.
Standard errors are in parenthesis.

DISCUSSIONS

We have estimated first equation using ordinary least square estimation method for our dependent variable 'backers' following the OLS estimation method similar to (Fourkan, 2019, 2021a, 2021b). We find that the effect of log converted USD_ Goal on number of backers for a Kickstarter project is significantly positive. Consequently, our assumption is so far supported that USD Goal has a significant positive effect on the number of backers for any project.

The 'main_category' of the projects in our analysis is considered as a categorical variable with n-1 dummies included in the model estimation. This categorical variable has 15 factors. Therefore, one of the categories goes in the intercept or constant part of the model. Among those categories, comics, design, games, and publishing categories have shown significant positive effects on bringing a greater number of backers for a project. Whereas food and technology categories have shown significant negative effects on the number of backers for a project.

The effect of USD_Amount_Pledged on number of backers is also positive and statistically significant ($\beta_2 = 0.007^{***}$, p =0.000). We also looked at the effect of age of projects in year, calculated by subtracting initial project start year and from current year 2021, and found the positive effect of the Age variable on attracting a larger number of backers for a project. Furthermore, the effect of Time between Project PL.DL, which is the number of days between project posted date and project deadline in crowdfunding platform, is negative and it is also statistically significant ($\beta_4 = -0.610^{***}$, p =0.10). So, from our findings of the OLS regression of number of backers we see that most of the factors of crowdfunding projects that lead to success of a project are also effective in bringing a greater number of backers for any crowdfunding project. We find that our second hypothesis is effectively supported.

Table 5 Probit Model Results for Success

	Dependent Variable: Success	
	Model 1	**Model 2**
Log (USD_ Amount_Goal)	-0.610***	-0.620***
	(0.00)	(0.00)
Backers	0.017***	0.018***
	(0.00)	(0.00)
USD_Amount_Pledged	0.0002***	0.0002***
	(0.00)	(0.00)
Age_of_Projects_Year	0.042***	-0.006***
	(0.00)	(0.00)
Time_Between_PL.DL	-0.006***	-0.006***
	(0.00)	(0.00)
Main_categoryComics		-0.034*
		(0.02)

Main_categoryCrafts		-0.530***
		(0.02)
Main_categoryDance		0.670***
		(0.03)
Main_categoryDesign		-0.490***
		(0.02)
Main_categoryFashion		-0.360***
		(0.02)
Main_categoryFilm &Video		0.140***
		(0.01)
Main_categoryFood		-0.520***
		(0.02)
Main_categoryGames		-0.800***
		(0.02)
Main_categoryJournalism		-0.400***
		(0.03)
Main_categoryMusic		0.270***
		(0.01)
Main_categoryPhotography		-0.190***
		(0.02)
Main_categoryPublishing		-0.160***
		(0.01)
Main_categoryTechnology		-0.650***
		(0.02)
Main_categoryTheater		0.640***
		(0.02)
Constant	3.600***	3.900***
	(0.02)	(0.10)
Observations	303,582	303,582
Log Likelihood	-105,213.00	-98,777.00
Akaike Inf. Crit.	210,438.00	197,636.00

*Note: *p**p*** represent significance at 10,5 and 1 percent level, respectively.*

Standard errors are in parenthesis.

For the second equation our dependent variable is success. We have modelled success as a function of all relevant covariates that we modelled in the antecedents of number of backers' model. our interest is to see whether the same antecedents that predict the success of a crowdfunding project work for number of backers. The purpose is to later develop a model where we can show the interaction of number of backers as a moderator with some of the recognized determinants of success from previous research. Thus, the results are shown in table 5. In probit and logit model we only look for sign and significance of coefficients since the magnitude is not accurate estimation of effect of the independent variable on the dependent variable. The reason of not being able to interpret the coefficients directly from logit and probit models is the elements of the right-hand side of such equation is nonlinear in nature. The distribution is standard normal cumulative distribution function. Accurate causal effect of any interested regressor variable can be determined from marginal effect estimation which is post estimated after conducting the limited dependent variable models in any statistical software such as R, Python or Stata.

We can see that the USD_Goal_Amount has a significant negative effect on the probability of being successful for a project when goal amount increases by 1 dollar in both model 1 and model 2. That make sense since having large goal might deter donors to be willing to donate since it can cause some confusion to the donors' mind about the transparency of the project. We also observe that number of backers has significant positive impact on the probability of being successful for a project. That means a increase in number of backers increases the probability of being successful by around 1.8 percent. USD_Amount_Pledged has also shown a significant positive impact on probability of being successful however, the magnitude is very small. With 1 more dollar of pledge from donors the probability of being successful increase by around 0.02 percent. Age of the projects in year has shown to have a significant effect on the probability of being successful. Time between project initiation and project deadline has a significant negative impact on the probability of being successful. This is logical since taking more time in between project start and end date in a platform can discourage and deter donors on the reliability of projects timely delivery.

Thus, we have seen that the same antecedents that are predicting on bringing a larger number of backers for a project are having strong impact on the probability of being successful for the projects. Therefore, from this result we can build upon our next work of modeling number of backers as a moderator between some other important determinants such as project goal or amount pledged and success of a project. Our interest would rest on to see whether it moderates the relationship between the common antecedents and the success of a project.

Implication to Research and Practice
We think the implications of the paper in crowdfunding research will be beneficial in a few ways. The purpose of the paper was to model two important aspects of crowdfunding projects -success and number of funders- and see them in a holistic way by modeling them simultaneously in the same paper. Where there is scarcity of research in modeling the two aspects of crowdfunding in the same paper, we wanted to fill that gap modeling them at the same time. Overall, there are very few quantitative studies in the field (Bouncken, Komorek, & Kraus, 2015; Short, Ketchen Jr, McKenny, Allison, & Ireland, 2017). One main contribution of the paper is that it has modeled the success and number of backers for a crowdfunding project in the same paper whereas previous

research looked at them in isolation. Another major contribution is that there are vey few papers, except some, on crowdfunding research which have used a representative data set for their analysis. Our highly representative data set and the findings are more comprehensible and generalizable since we have ensured the proper analytical procedure before asserting our findings.

CONCLUSION

In this paper, we would like to answer the question of which factors contribute to bringing more backers in pledging a certain amount towards a crowdfunding project. In addition to this, we would like to see which factors ultimately bring success to a crowdfunding project. Answering these questions are very crucial for new projects in crowdfunding platforms. New projects need to bring more backers and ultimately to be successful in this area of new financial opportunities. Particularly it is very valuable to get finance for a new startup or a social cause or an artistic project underrepresented by traditional financers.

Applying some boundary conditions such as implications of categories of projects and age of projects during measuring the effect of the previously used recognized variables on success or bringing a greater number of backers, we would like to contribute to this topic. Drawing around 303,582 projects from an artistic crowdfunding platform this paper endeavors to show that number of backers of a project depend on few factors such as goal amount, time between project start and end date, amount pledged by backers, and the main category of the project. The project success ultimately comes through the success of being able to bring adequate backers. We have shown with two different models' estimation that the probability of success comes through attracting a greater number of backers and demonstrated the antecedents of attracting adequate number of backers.

References

Agrawal, A., Catalini, C., & Goldfarb, A. (2014). Some simple economics of crowdfunding. *Innovation policy and the economy, 14*(1), 63-97.

Agrawal, A. K., Catalini, C., & Goldfarb, A. (2011). *The geography of crowdfunding* (0898-2937). Retrieved from

Agresti, A. (2015). *Foundations of linear and generalized linear models*: John Wiley & Sons.

Aldrich, J. H., & Nelson, F. D. (1984). *Linear probability, logit, and probit models*: Sage.

Boeuf, B., Darveau, J., & Legoux, R. (2014). Financing creativity: Crowdfunding as a new approach for theatre projects. *International Journal of Arts Management, 16*(3).

Bouncken, R. B., Komorek, M., & Kraus, S. (2015). Crowdfunding: The current state of research. *International Business & Economics Research Journal (IBER), 14*(3), 407-416.

Calic, G. (2021). Crowdfunding. Retrieved from http://sk.sagepub.com/reference/the-sage-encyclopedia-of-the-internet-3v/i1840.xml

Cornelius, B., Landström, H., & Persson, O. (2006). Entrepreneurial studies: The dynamic research front of a developing social science. *Entrepreneurship theory and practice, 30*(3), 375-398.

Dictionary, M.-W. (2021). Crowdfunding. Retrieved from https://www.merriam-webster.com/dictionary/crowdfunding

Fourkan, M. (2019). *Does Medicaid Increase Emergency Room Use: Evidence from Oregon Health Program?* South Dakota State University, Electronic Theses and Dissertations. 3650. Retrieved from https://openprairie.sdstate.edu/etd/3650

Fourkan, M. (2021a). Modeling Current Account Balance and General Government Net Lending and Borrowing and GDP Growth for Developed Countries. *Asian Journal of Economics, Finance and Management*, 11-19.

Fourkan, M. (2021b). Modeling Long Run Relationship of GDP General Government Net Lending & Borrowing Gross National Savings and General Government Revenue for Bangladesh. *Asian Journal of Economics, Finance and Management*, 34-42.

Hemer, J. (2011). *A snapshot on crowdfunding*. Retrieved from

Kuppuswamy, V., & Bayus, B. L. (2018). Crowdfunding creative ideas: The dynamics of project backers. In *The economics of crowdfunding* (pp. 151-182): Springer.

Markets, R. a. (2021). Crowdfunding Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.researchandmarkets.com/reports/5239562/crowdfunding-market-growth-trends-covid-19?

Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing, 29*(1), 1-16.

Osili, U., Bergdoll, J., Pactor, A., Ackerman, J., & Houston, P. (2021). Charitable Crowdfunding: Who Gives, to What, and Why?

Short, J. C., Ketchen Jr, D. J., McKenny, A. F., Allison, T. H., & Ireland, R. D. (2017). Research on crowdfunding: Reviewing the (very recent) past and celebrating the present. *Entrepreneurship theory and practice, 41*(2), 149-160.

Tang, L., Baker, R., & An, L. (2020). The success of crowdfunding projects: technology, globalization, and geographic distance. *Economics of Innovation and New Technology*, 1-22.

Wang, N., Li, Q., Liang, H., Ye, T., & Ge, S. (2018). Understanding the importance of interaction between creators and backers in crowdfunding success. *Electronic Commerce Research and Applications, 27*, 106-117.

Wooldridge, J. M. (2013). *Introductory Econometrics: A modern Approach*. Mason,OH: Cengage Learning.

Yazdani, E., Chakravarty, A., & Inman, J. (2021). Identifying Emotions in Images and Their Effects on Donation Behavior in Online Crowdsourcing Platforms. *Available at SSRN 3778357*.

Zheng, H., Wan, N., Chen, D., & Wang, T. (2014). *Antecedents of Project Implementation Success in crowdfunding*. Paper presented at the PACIS.