

Exploring the relationship between engagement and total contributions in crowdfunding campaigns

Author: Florin Heun
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,

Philanthropic crowdfunding has emerged as a vital source of capital for entrepreneurs, as traditional sources of funding are difficult to obtain. With online platforms like GoFundMe becoming increasingly popular, understanding the factors that influence campaign success is crucial. The aim of this study is to examine the impact engagement metrics, namely comments and social shares, have on the amount raised in campaigns. Moreover, the study aims to understand how the relationship between these metrics and the amount raised is mediated by the campaign duration. Using a dataset including 17,402 campaigns that have been scraped from the crowdfunding platform GoFundMe, we conducted correlation, regression and moderation analyses to explore these relationships. The findings reveal that social shares have a significant positive relationship with the amount raised, while comments exhibit a more complex relationship, having a significant negative relationship with the amount raised. The control variables, namely campaign hearts and target amount, were found to be confounding variables, indicating their influence on the amount raised and engagement metrics. The moderation analyses show that longer campaign durations negatively impact the effectiveness of both comments and social shares. These results contribute to the theoretical understanding of crowdfunding dynamics by highlighting the importance of engagement and the diminishing returns of engagement over extended campaign durations. Practically, the study suggests that campaign creators should focus on maximizing early engagement and consider optimal campaign durations to enhance fundraising success.

Graduation Committee members:

Dr. P.S.C. van Teunenbroek

Dr. R.P.A. Loohuis MBA

Keywords

Donation-based crowdfunding, reward-based crowdfunding, engagement, fundraising success, social shares, comments, campaign duration

1. INTRODUCTION

Entrepreneurs continue to face challenges such as limited cash flow and a lack of transparency with investors regarding the quality of their venture (Fraser et al., 2015). The primary obstacle they encounter is attracting external funding for their venture, especially during the early stages of their entrepreneurial journey (Cosh et al., 2009). New ventures need various resources to be successful, and one critical resource required is funding (Gompers et al., 2004). There are numerous different forms of funding that entrepreneurs can select to obtain the capital needed for their campaigns, and one form of funding that has increased in popularity in recent years is crowdfunding. Crowdfunding has become a way for entrepreneurs to secure funding without having to seek out venture capital or other more traditional forms of investment (Mollick, 2014). There are multiple types of crowdfunding, each with different attributes and characteristics, and the types of crowdfunding that will be discussed in this paper are donation-based crowdfunding and reward-based crowdfunding. From theory, we know that reward-based crowdfunding and donation-based crowdfunding are similar (Bürger & Kleinert, 2021). This is why both are often analyzed together in research studies, as they both share common mechanisms and underlying principles of raising funds from a large number of people (Bürger & Kleinert, 2021). Both forms of crowdfunding can be summarized as philanthropic crowdfunding (Van Teunenbroek & Hasanefendic, 2023; Bürger & Kleinert, 2021). The term philanthropic can be defined as promoting the welfare of others. Thereby, philanthropic crowdfunding means raising funds to support initiatives that benefit the community or individuals in need (Wiepking, 2021).

In reward-based crowdfunding, campaign donors provide a predetermined amount of money to campaign creators in exchange for rewards (Kuppuswamy, 2018). Campaign creators and donors meet on online platforms such as Kickstarter, where creators post their campaigns and indicate a funding goal, as well as a reward for donors. These rewards could be tangible, such as personalized items, exclusive merchandise, early access to the product, etc., or intangible, such as experiences, recognition, social rewards, etc. Donation-based crowdfunding is different from reward-based crowdfunding as campaigns receive donations without compensation or the expectation of receiving something in exchange for the donation (Van Teunenbroek et al., 2023; Salido-Andres et al., 2021). Donors can browse on platforms such as Kickstarter or GoFundMe and discover campaigns that they want to invest in.

An important attribute that should be considered in the process of a successful campaign is the engagement between the campaign creator and campaign donors (Gangi, 2023). On platforms such as GoFundMe or Kickstarter, campaign creators can use multiple features to enhance the level of engagement they have with their donors. For example, creators can post updates on their campaign, interact with donors via comments and provide an FAQ page where they can inform donors on important subject matters. Engagement builds trust between donors and creators, which influences campaigns since it demonstrates transparency, commitment and accountability (Liu et al., 2024). Furthermore engagement can be an indicator for the quality of a crowdfunding campaign, which influences campaign success (Mollick, 2014).

1.1 Research Gap and Objective

The success rate of a campaign on the platform Kickstarter to date is 41.31%, which means that campaigns are more likely to fail rather than succeed (Kickstarter, 2024).

Research on philanthropic crowdfunding is scarce, as researchers mainly focus on equity-based or lending-based crowdfunding (Van Teunenbroek, Dalla Chiesa & Hesse, 2023). More extensive research needs to be conducted to provide campaign creators with a framework on what factors lead to successful crowdfunding campaigns. Previous research has determined that engagement has a positive impact on crowdfunding success, however, it is unclear how engagement differs across campaigns with different amounts raised or funding goals. (Wang et al., 2018; Jia et al., 2023; Liu et al., 2024). Henceforth, this research aims to explore the relationship between the amount raised and the engagement between donors and creators in crowdfunding campaigns.

1.2 Research Question

Considering the above discussed research gap, this research paper will answer the following research question:

“To what extent is the engagement between campaign creators and donors related to the amount raised in crowdfunding campaigns?”

1.3 Theoretical and Practical Relevance

As discussed above, extensive prior research has been conducted on equity-based and lending-based crowdfunding, but not on philanthropic crowdfunding (Van Teunenbroek, Dalla Chiesa & Hesse, 2023). The context of online fundraising differs from that of offline fundraising. As a result, traditional sources cannot be directly applied to this online fundraising scenario (Van Teunenbroek & Hasanefendic, 2023). Therefore, this research aims at contributing to the topic of philanthropic crowdfunding and bridge the gaps in knowledge on how engagement is related to the amount raised in crowdfunding campaigns. In other words, how engagement might be more or less critical for the success of campaigns depending on their financial targets. Our research is important for scholars because it offers valuable insights into the dynamics between engagement and amount raised in crowdfunding campaigns, and consequently it contributes to the broader understanding of digital fundraising and the behavior of online communities, enhancing theoretical models in these areas. Previous qualitative studies suggest that engagement is a crucial factor in reaching additional funding (Efrat & Gilboa, 2020; Van Teunenbroek & Smits, 2023). Our study distinguishes itself by utilizing a large sample that includes multiple projects, rather than relying on a limited number of interviews. This approach enhances the generalizability of our findings, providing a more comprehensive understanding of the relationship between engagement and amount raised in the context of online funding. Furthermore, the results should inspire further research into philanthropic crowdfunding and engagement in crowdfunding campaigns.

Besides the theoretical relevance of this thesis, this research also offers practical insights for campaign creators. If the study finds a relationship between engagement and amount raised, campaign creators can use those insights into the planning and execution of their own crowdfunding campaigns. For example, knowing how engagement metrics like comments and social shares influence total fundraising can help creators set realistic target amounts and develop strategies to boost interaction. Moreover, campaign creators can also deduce how to engage with their audience, according to their funding goal. The results should also show if some engagement metrics have a stronger relationship with the amount raised than others, which would lead to valuable information for campaign creators on which engagement metrics to focus on in particular. Additionally, by understanding insights into how engagement

relates with total donations, creators can tailor their campaigns to maximize funding potential, considering factors such as their personal networks and how to maintain donor interest over the entire campaign duration. This practical guidance can ultimately enhance the effectiveness of crowdfunding efforts and improve the chances of reaching funding goals.

2. LITERATURE REVIEW

The following section will provide an overview of existing research relevant to crowdfunding dynamics, engagement metrics and their impact on fundraising success.

2.1 Definition Crowdfunding

Crowdfunding is a form of crowdsourcing, that involves obtaining work, information, finances or opinions from a large group of people in exchange for various types of payments or as volunteers (Zhang et al., 2023). While this a more general definition of crowdfunding, scholars have proposed that crowdfunding is a broad concept encompassing different types, each with its own distinct purposes (Bagheri, 2019). According to this proposal, multiple definitions of crowdfunding can be true that focus on different aspects of the concept. For example, Paschen (2017) defined crowdfunding in a general context: "the outsourcing of an organizational function, through IT, to a strategically defined network of actors (i.e., the crowd) in the form of an open call-specifically, requesting monetary contributions towards a commercial or social business goal" (p. 179), while Mollick et al., (2014) defined crowdfunding from an entrepreneurial context as "the efforts by entrepreneurial individuals and groups—cultural, social, and for-profit— to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries" (p.2). Kraus et al. (2016) describes crowdfunding as a two sided market, where two distinct users of a network meet. Two sided networks encompass a money side and a subsidy side, where the subsidy side consists of a group of investors, the campaign donors, and the money side consists of the founder who receives the capital to fund their campaign (Kraus et al., 2016).

An important addition to these definitions that make up the concept of crowdfunding is the target amount set by campaign creators. Reward-based crowdfunding has two different business models, one being the keep-it-all (KIA) model and the all-or-nothing (AON) model (Cumming et al., 2014). In the AON model, the creator sets a fundraising goal and does not receive the money if the target amount falls short of being raised, while in the KIA model the creator keeps all the money raised regardless of whether the target amount has been reached (Cumming et al., 2014). While most online reward-based crowdfunding platforms like Kickstarter follow an AON model, most of the donation-based crowdfunding platforms like GoFundMe follow a KIA model. Regarding our research, both models are applicable because in both models the campaign creator can set a funding goal. While in the KIA model the creator still receives the funds, it is still of high importance to reach the funding goal, or else the campaign may fail to meet its intended objectives or lose future support and trust from potential donors.

To proceed with the literature review, we need to first acknowledge other forms of crowdfunding and distinguish between their similarities and differences, as different forms of crowdfunding might bring contrasting elements and ideas. According to Shneor et al. (2020), crowdfunding can be sorted into two categories, investment models that include equity-based crowdfunding and lending-based crowdfunding, and non-

investment models that include donation-based and reward-based crowdfunding (Shneor, 2020). As discussed earlier, donation-based crowdfunding is different from reward-based crowdfunding as campaigns receive donations without compensation, whereas in reward-based crowdfunding donors receive compensation (Van Teunenbroek et al., 2023). Regarding the investment-models, in equity-based crowdfunding investors buy stocks or shares in a company and receive part of future profits, whereas in lending based crowdfunding investors give out direct loans (Berns et al., 2020; Hornuf et al., 2016). Both of these forms of crowdfunding have the overarching aim for investors to make profits from their investments (Shneor et al., 2020). This is inherently different from non-investment models, where investors do not invest for profits, but according to Bagheri et al. (2019), rather for reasons including "shared problems, values, thoughts, and beliefs, helping a minority, technical knowledge, and the capacity of the campaign to learn from and help realize ideas, creating value that leads donations to charity crowdfunding" (p. 218). These differences in investors' motives are crucial to recognize when analyzing engagement in crowdfunding campaigns.

2.2 Donor Motives and Success Factors

The relationship between the campaign initiator and donor in crowdfunding is crucial for the success of the campaign (Efrat et al., 2020). Van Teunenbroek, Dalla Chiesa and Hesse (2023) found that the campaign creator and social information portrayed are important factors that impact donations. They note that various studies indicate that donors are influenced by social information within a crowdfunding setting, and how that is serving as a quality indicator. Crowdfunding pages often display the number of supporters and donation amounts, which provides insights into others behavior (Van Teunenbroek et al., 2023). They also propose that the ties with the campaign creator and the creators reputation influences donors. This means that direct communication through, for example, updates and comments are important measures to strengthen the tie between the creator and donors. Furthermore, they discuss that information asymmetry and uncertainty often exist in crowdfunding, and as a result, credibility and trustworthiness of the campaign creator are critical elements that impact donations (Van Teunenbroek et al., 2023; Cavalcanti Junqueira et al., 2022). Wang et al. (2018) discussed in their study how philanthropic crowdfunding is different to the investment models due higher chances of information asymmetry and uncertainty. Information asymmetry is problematic because it creates challenges for both donors and creators in the crowdfunding market. Donors who may lack the expertise compared to traditional investors struggle to accurately assess the potential benefits and risks of crowdfunding campaigns (Ahlers et al., 2015). Moreover, creators may struggle to convey credibility and effectively communicate all information to donors (Wang et al., 2018). Therefore, finding ways to decrease information asymmetry in philanthropic crowdfunding is crucial to improve the likelihood of campaign success.

Burtch et al. (2013) found that the duration of the campaign positively impacts the chances of success, as it facilitates a longer period over which people can donate. Burtch et al. (2013) also denotes that increased entrepreneurs' efforts to increase the exposure has a positive impact on the success of a campaign. This is in line with the paper from Kraus et al. (2016), which discusses that increased visibility of campaigns leads to increased funding. Conversely, Burtch et al. (2013) also found evidence of a crowding-out effect, where donors may feel that their donations become less impactful as more funds are raised over time (Burtch et al., 2013). This finding is in line with

Mollick (2014), who discusses that longer campaign durations decreases the chances of success because longer durations are a sign of lack of confidence.

2.3 Engagement

In philanthropic crowdfunding, engagement refers to the interactive relationship between campaign creators and donors, characterized by communication and involvement during the campaign (Srinivasan et al., 2020; Kunz et al., 2016). Philanthropic crowdfunding is conducted entirely online, meaning that creators and donors can only engage with each other through digital platforms to communicate and build relationships. Engagement includes a range of interactions, activities and initiatives done by campaign creators to connect with and involve donors in various aspects of the campaign (Srinivasan et al., 2020; Kunz et al., 2016). On the platform GoFundMe, engagement can be facilitated by campaign creators in several ways, for example through comments, updates, social shares, videos etc..

Arshad et al. (2023) discusses in their study how engagement differs depending on the crowdfunding stage. They show that engagement intensity is moderate to high at the pre and post-launch stage, while it is low in the stages between them. Our research will focus on the post launch stage, where campaigns are either finished or are close to finishing, since this stage gives important insights into the overall effectiveness of engagement strategies and lets us analyze the final outcomes and how donors respond to the campaigns. Furthermore, it is discussed that engagement comes in different forms, namely cognitive, behavioral, emotional and social engagement (Arshad et al., 2023). Our research will focus on behavioral engagement, that can be defined as actions of participation, and social engagement, which can be defined as interaction of stakeholders. They both encompass the engagement between campaign creators and donors. Behavioral engagement is most prominent at the pre and post-launch stages, while social engagement is level throughout all stages (Arshad et al., 2023).

Trust in crowdfunding contributes significantly to fundraising performance (Zheng et al. 2016; Liu et al., 2024). Trust management is essential in crowdfunding because it influences donation behavior, acts as a mediating variable in human interaction, impacts crowdfunding success, builds donor confidence and enhances information dissemination (Liu et al., 2024). Engagement can contribute to building trust if campaign creators interact with donors effectively, as it demonstrates transparency, commitment and accountability, which are essential elements in establishing trust (Zheng et al. 2016; Liu et al., 2024).

Engagement can be an indicator for the quality of a crowdfunding campaign, which influences success (Mollick, 2014). Mollick (2014) demonstrates that signals such as updates and videos are associated with greater success. This is in line with findings of Kraus et al. (2016), which indicate that videos, pictures, blogs, and other online elements in many cases play an important role in successful crowdfunding. It also aligns with the results of Srinivasan et al., (2020), where it was found that consistent engagement through updates positively influences founder belief. Other than updates, comments are another important mechanism of engagement, as they allow for direct communication between campaign creators and donors (Wang et al., 2018; Jia et al., 2023). The results of Jia et al., (2023) indicate an inverted U-shaped relationship between comment quantity/sentiment and successful crowdfunding campaigns. Wang et al. (2018) results show that with more comments, higher

scores, longer replies and faster responses crowdfunding campaigns tend to do better. Contrary to Jia et al. (2023) findings, Wang et al. (2018) has not found an inverted U-Shaped relationship, but a positive relationship between comments and crowdfunding success. Overall, this highlights how important it is for creators to engage with donors for crowdfunding to be successful.

While there are multiple engagement mechanisms, it is important to understand that different levels of engagement exist. For example, comments on Kickstarter represent a higher level of engagement than a frequently asked question page, social shares or updates, since the campaign donors directly interact with the creator and can receive replies as well (Jia et al. 2023; Kraus et al., 2016; Mollick, 2014). An FAQ question page represents a rather lower level of engagement as there is little direct interaction between the campaign donors and the creator, with inquiries typically being addressed through pre-existing information provided by the creator (Telve, 2019).

2.4 Hypotheses

Multiple hypotheses have been constructed to investigate the potential relationship between amount raised and engagement in crowdfunding.

2.4.1 Comments

Increased engagement through comments may indicate higher interest and support for the campaign, leading to more donations. As discussed in the literature review, when a crowdfunding campaign receives more comments, it shows active engagement and interest from potential backers (Wang et al., 2018; Jia et al., 2023). This high level of engagement can create a sense of community and trust around the campaign, encouraging more people to donate. Each comment can act as social proof, demonstrating to others that the campaign is worth supporting. As a result, campaigns with more comments may see higher donation amounts (Wang et al., 2018; Jia et al., 2023). Accordingly, the following has been hypothesized:

Hypothesis 1a: The number of comments in a crowdfunding campaign is positively related to the amount raised.

Over time, the initial excitement and engagement driven by comments may decrease. In the early stages of a campaign, comments can significantly boost visibility and encourage donations (Wang et al., 2018). Previous research discusses that longer campaign durations may lead to decreased engagement and interest do to a crowding-out effect (Mollick, 2014; Burtch et al., 2013). Campaign no longer feel fresh and urgent and show lack of confidence (Mollick, 2014; Burtch et al., 2013) Accordingly, the following has been hypothesized:

Hypothesis 1b: The duration of the crowdfunding campaign negatively moderates the relationship between the number of comments and the amount raised, weakening the positive effect of comments on donations.

2.4.2 Social Shares

Social shares are crucial for increasing the reach and visibility of a crowdfunding campaign, which leads to increased chances of success (Wessel et al., 2016; Wang et al., 2021; Mollick, 2014). Each share exposes the campaign to new potential backers who might not have otherwise encountered the campaign. This broader visibility can lead to higher engagement and more donations (Wessel et al., 2016; Wang et al., 2021). Social shares serve as endorsements from the people who share the campaign, adding credibility and motivating their network to

contribute (Wang et al., 2021). Therefore, campaigns with more social shares might raise more funds than those without. Accordingly, the following has been hypothesized:

Hypothesis 2a: The total number of social shares in a crowdfunding campaign is positively related to the amount raised.

Social shares can create significant initial momentum and drive donations, especially when a campaign is new and exciting (Wang, 2021). However, as a campaign progresses, the initial impact of these shares may fade. Previous research discusses that longer campaign durations may lead to decreased engagement and interest due to a crowding-out effect, with the campaign no longer feeling fresh and urgent (Mollick, 2014; Burtch et al., 2013). Accordingly, the following has been hypothesized:

Hypothesis 2b: The duration of the crowdfunding campaign negatively moderates the relationship between the number of comments and the amount raised, weakening the positive effect of comments on donations.

3. METHODOLOGY

To test the hypothesis and to answer the research question, quantitative methods will be used. By quantifying our variables, we can precisely analyze numerical data, providing accurate insights into the relationship between target amount and engagement. Quantitative methods enable comparison between engagement metrics across crowdfunding campaigns with varying total amounts raised and predict outcomes based on statistical models. This research aims to produce findings that are generalizable to a broader population of crowdfunding initiatives.

3.1 Sample

The data was scraped from the platform GoFundMe using the R programming language. GoFundMe is one of the biggest crowdfunding platforms in the world, connecting more than 150 million people and organizations through its mission of helping people help each other (Woloszyn, 2024). Prior research has been successfully conducted using data from GoFundMe to study charitable contributions in a real-world setting (Sisco & Weber, 2019). The dataset used for this study includes 17,402 crowdfunding campaigns, consisting of campaigns located in four countries, namely the United States, United Kingdom, Australia and Canada.

3.2 Data

The data was shared from a colleague from the first supervisor. It is a raw dataset that includes numerical data, categorical data and written information. This study investigates the relationship between engagement metrics and the amount raised in crowdfunding campaigns, with campaign duration as a moderating variable. Consequently, the variables in this study are categorized into independent, dependent, control, and moderating variables.

3.2.1 Independent, Dependent & Moderating Variables

The independent variables are the number of comments and total social shares. The number of comments captures the total number of comments received by a crowdfunding campaign, while total social shares measure the total number of times a crowdfunding campaign has been shared on social media platforms. The dependent variable is the amount

raised, which represents the total amount of money donated to a crowdfunding campaign. This serves as the primary outcome of interest in this study. The moderating variable is campaign duration, which represents the length of time a crowdfunding campaign is active, measured in days. Campaign duration is considered a moderating variable that may influence the strength and direction of the relationship between the independent variables (number of comments and total social shares) and the dependent variable (amount raised).

3.2.2 Control Variables

Additionally, control variables are considered in the analysis to account for other factors that might influence the amount raised. These variables include campaign hearts and target amount. Campaign hearts reflect the number of likes a campaign has received, indicating its popularity. This variable is important because it serves as a proxy for the overall attractiveness and visibility of the campaign, potentially influencing donor behavior independently of the social shares and comments (Wang et al., 2021). The target amount is the initial fundraising goal set by the campaign creators, which may influence donor behavior and expectations. A higher target amount might signal a more ambitious campaign, potentially attracting more donations, but it might also discourage potential donors if the goal seems unattainable. A lower target amount might be perceived as more achievable, encouraging donations to help reach the goal. By including these control variables in the analysis, the study aims to find the specific impact of the engagement metrics on the amount raised, providing a clearer understanding of how these factors interact to affect the success of crowdfunding campaigns.

3.3 Data Preprocessing

The raw dataset was imported into Rstudio, where it had to be cleaned and processed before the analyses could be conducted. Multiple data pre-processing steps have been taken to assure that the data fits with the used statistical models. First histograms of the data have been made to see whether the data is normally distributed (see Appendix 1). It can be observed that the data for the independent, dependent and control variables are highly skewed to the right and thus need to be processed to allow for regression analysis. Next, a Q-Q plot of the two independent variables and the dependent variable have been created to visualize the distribution of the data. The plots in figure 1 show that the data points deviate from the red reference line at the tail. This indicates that the variables do not follow a normal distribution. Regarding the Q-Q plot of amount raised unattributed, all the data points are sitting on the x-axis and there is no slope, which typically means that there is no variation in the data, probably stemming from a large number of zero or identical values. In social sciences, common data preprocessing steps include outlier exclusion, data transformation, and non-parametric tests to make the data fit the assumptions of the statistical tests and improve the accuracy and validity of the analysis (Brown et al., 2023).

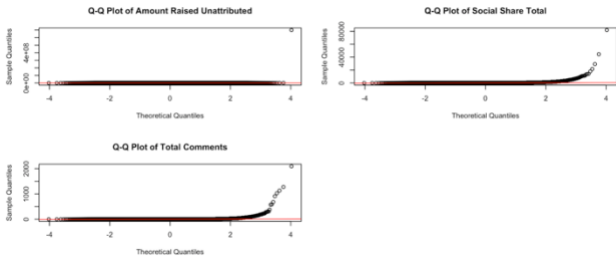


Figure 1 - Q-Q plots of amount raised, social shares & comments

The first step undertaken to resolve the skewness was to exclude outliers. An outlier is a data point that significantly differs from the rest of the data. Outliers are problematic because they can skew the results and lead to misleading conclusions. Values outside the range of the mean plus or minus one standard deviation for the amount raised variable were excluded. This resulted in the loss of one observation and the data distribution has not changed. Since the exclusion of outliers has not resolved the skewness of the data, another, more radical data cleaning step was applied.

A natural log-transformation (base e) was applied to the variables. This transformation is appropriate because it helps to stabilize the variance, make the data more normally distributed, and reduce the impact of outliers. By applying the log transformation, the data distribution became more symmetrical, meeting the assumptions required for many statistical analyses, including regression analysis. This transformation was performed using the program R and resulted in a significantly improved distribution of the data (see Appendix 2). The variables now appear to be nearly normally distributed. Figure 2 shows another Q-Q plot that has been created for the two independent variables and the dependent variable. It shows that the log transformation made the distribution of each variable considerably more like a normal distribution.

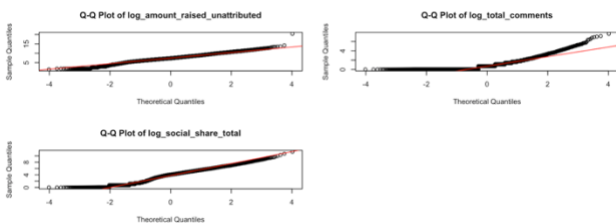


Figure 2 – Q-Q plots of log transformed variables

The histogram of the the amount raised in figure 3 shows that there are a substantial number of zero values that are not relevant to the analysis. These zero values do not make sense in the context of this study because they indicate campaigns that did not raise any funds, which is outside the scope of our analysis focused on active fundraising efforts. Therefore, these zero values have been filtered out. This is a common practice in the field of philanthropy (Van Teunenbroek & Bekkers, 2020). Furthermore, the variables funding period, campaign hearts, and target amount, which were also highly skewed like the other variables (see Appendix 1), have been log transformed to stabilize variance, normalize their distributions, and improve the accuracy and reliability of the statistical analyses.

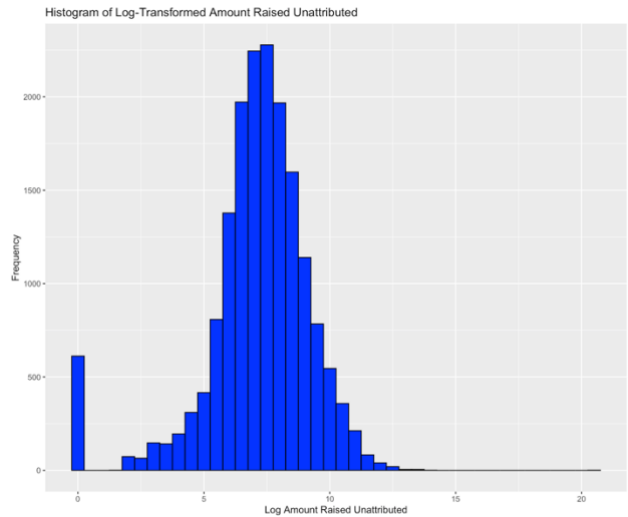


Figure 3 – Histogram of the log-transformed amount raised

To explore the moderating effect of campaign duration, interaction terms have been created between the independent variables and the moderating variable. The interaction term between the number of comments and the campaign duration helps to analyze how the duration of the campaign influences the impact of comments on the amount raised. Similarly, the interaction term between the total social shares and the campaign duration examines how the duration of the campaign affects the impact of social shares on the amount raised. These interaction terms are crucial for the moderation analysis and so for understanding whether and how the campaign duration moderates the effects of comments and social shares on the amount raised in crowdfunding.

3.4 Data Analysis

The data will be analyzed through the software R. Descriptive statistics will be calculated to summarize the central tendencies and dispersion of the key variables. These will include mean, median, standard deviation, quartile 1 and quartile 3. A correlation matrix will be constructed to examine the relationships between the variables and to check for multicollinearity. Regression analysis will be conducted to test the hypothesis regarding the relationship between comments and social shares and the amount raised. A moderation analysis will be performed to examine the potential moderating effect of campaign duration on the relationship between comments and social shares on amount raised. Lastly, a robustness analysis will be performed to test for consistency and reliability of our findings.

4. RESULTS

We will test each of the four hypotheses individually to evaluate the relationship between each independent variable on the amount raised, as well as the moderating effect of the funding period on the relationship between both independent variables and the amount raised. As a final step, we will construct a robustness analysis with all variables combined into one model to test for consistency and reliability of our findings. That means that in addition to the descriptive statistics and correlation matrix, we will have five different tests.

4.1 Descriptive Statistics

Table 1 shows descriptive statistics for the log transformed variables used in this study. The statistics for comments show the most variation, with a mean of .86 and a standard deviation of .94. This means that the number of

comments received by crowdfunding campaigns varies around the average value and is skewed, indicating substantial differences in engagement across campaigns. In contrast, the log-transformed total social shares have a mean of 3.79 and a standard deviation of 1.808, suggesting that while there is still considerable variability, it is less compared to comments. This indicates that social shares are somewhat more consistent across campaigns but still show notable differences in how frequently campaigns are shared on social media. Regarding the amount raised, mean and standard deviation indicate that while there is some variability in the amount of money raised by campaigns, most campaigns cluster around the average amount. This suggests that the amount raised is relatively stable, with fewer extreme variations. This finding is in line with the histogram of the amount raised in figure 3, that shows a normal distribution.

Table 1 – Descriptive Statistics

	Mean	Median	SD	Q1	Q3
Comments	.86	.69	.94	0	1.39
Social Shares	3.79	4.06	1.81	2.49	5.05
Funding period	3.56	3.71	.73	3.00	4.17
Amount raised	7.40	7.38	1.65	6.43	8.42
Campaign hearts	3.60	3.50	1.27	2.77	4.33
Target amount	8.66	8.52	1.51	7.82	9.62

4.2 Correlation Matrix

To interpret the correlation matrix, we are using Cohen's categorization. As seen in Table 2, multiple variables show significant strong correlations with each other. The amount raised has a significant strong correlation with comments, social shares, target amount and campaign hearts, indicating that campaigns with more comments, campaigns that are shared more on social media, campaigns with higher target amounts and campaigns that are more liked tend to raise more money. The funding period has a significant weak correlation with all other variables, indicating that the duration of a campaign has no strong linear relationship with engagement metrics, control variables or the amount raised.

Table 2 – Intercorrelations between main variables

	1	2	3	4	5	6
Comments	-	-	-	-	-	-
Social Shares	.55*** ($<.001$)	-	-	-	-	-
Funding period	.03*** ($<.001$)	.04*** ($<.001$)	-	-	-	-
Amount raised	.65*** ($<.001$)	.73*** ($<.001$)	-.05*** ($<.001$)	-	-	-
Campaign hearts	.76*** ($<.001$)	.77*** ($<.001$)	-.05*** ($<.001$)	0.9*** ($<.001$)	-	-
Target amount	.39*** ($<.001$)	.43*** ($<.001$)	-.05*** ($<.001$)	.55*** ($<.001$)	.50*** ($<.001$)	-

4.3 Results Hypothesis 1a

In hypothesis 1a it was hypothesized that comments in a crowdfunding campaign are positively related to the amount raised. To test this hypothesis, regression analysis was conducted using the amount raised as the dependent variable and comments as the independent variable, while controlling for campaign

hearts and the target amount. Table 3 shows the results of the regression analysis. The results show a b of $-.110$ and a p -value of $<.001$ for the relationship between comments and amount raised. This suggests a significant negative relationship between the number of comments and the amount raised. Approximately 82.59% of the variability in the dependent variable (amount raised) can be explained by other variables in the model. The data does not support hypothesis 1a.

Table 3 – Regression analysis of comments on amount raised (n=16,196)

	b (SE)	p -value	95% Confidence interval	
			Lower bound	Upper bound
Constant	2.25 (.03)	$<.001$	2.19	2.32
Comments	-.11 (.01)	$<.001$	-.13	-.09
Campaign hearts	1.14 (.01)	$<.001$	1.13	1.15
Target amount	.135 (.00)	$<.001$.13	.14
Multiple R-squared: .82				
Adjusted R-squared: .82				

4.4 Results Hypothesis 1b

In hypothesis 1b it was hypothesized that the duration of a crowdfunding campaign negatively moderates the relationship between the number of comments and the amount raised, weakening the positive effect of comments on donations. To test this hypothesis, moderation analysis was conducted where an interaction term between comments and campaign duration was included to test the moderation effect. Table 4 shows the results of the moderation analysis. The results show a b of $-.03$ and a p -value of $<.001$ for the interaction between comments and campaign duration. This indicates a significant negative interaction effect, suggesting that as the campaign duration increases, the positive effect of comments on the amount raised becomes weaker. Approximately 82% of the variability in the dependent variable (amount raised) can be explained by the other variables in the model. The data supports hypothesis 1b.

Table 4 – Moderation analysis of Comments and funding period on amount raised (n=12,470)

	b (SE)	p -value	95% Confidence interval	
			Lower bound	Upper bound
Constant	2.21 (.06)	$<.001$	2.10	2.32
Comments	.01 (.03)	.659	-.05	.08
Funding period	.05 (.01)	$<.001$.03	.08
Campaign hearts	1.12 (.01)	$<.001$	1.10	1.13
Target amount	.13 (.01)	$<.001$.12	.14

Comments x funding period	-03 (.01)	<.001	-.05	-.02
Multiple R-squared: .82				
Adjusted R-squared: .82				

4.5 Results Hypothesis 2a

In hypothesis 2a it was hypothesized that social shares of a crowdfunding campaign are positively related to the amount raised. To test this hypothesis, regression analysis was conducted using the amount raised as the dependent variable and social shares as the independent variable, while controlling for campaign hearts and the target amount. Table 5 shows the results of the regression analysis. The results show a *b* of .06 and a *p*-value of <.001 for the relationship between comments and amount raised. This suggests a significant positive relationship between the number of social shares and the amount raised. Approximately 83% of the variability in the dependent variable (amount raised) can be explained by the other variables in the model. The data supports hypothesis 2a.

Table 5 – Regression analysis of social shares on amount raised (n=16,196)

	<i>b</i> (<i>SE</i>)	<i>p</i> -value	95% Confidence interval	
			Lower bound	Upper bound
Constant	2.42 (.03)	<.001	2.36	2.49
Social shares	.06 (.01)	<.001	.05	.07
Campaign hearts	1.02 (.01)	<.001	1.00	1.03
Target amount	.13 (.00)	<.001	.12	.14
Multiple R-squared: .83				
Adjusted R-squared: .83				

4.6 Results Hypothesis 2b

In hypothesis 2b it was hypothesized that the duration of the crowdfunding campaign negatively moderates the relationship between the number of social shares and the amount raised, weakening the effect of social shares on donations. To test this hypothesis, moderation analysis was conducted where an interaction term between social shares and campaign duration was included to test the moderation effect. Table 6 shows the results of the moderation analysis. The results show a *b* of -.01 and a *p*-value of .002 for the interaction between social shares and campaign duration. This indicates a significant negative interaction effect, suggesting that as the campaign duration increases, the positive effect of social shares on the amount raised becomes weaker. Approximately 82% of the variability in the dependent variable (amount raised) can be explained by the other variables in the model. The data supports hypothesis 2b.

Table 6 – Moderation analysis of social shares and funding period on amount raised (n=12,470)

	<i>b</i> (<i>SE</i>)	<i>p</i> -value	95% Confidence interval	
			Lower bound	Upper bound
Constant	2.32 (.08)	<.001	2.16	2.47
Social shares	.10 (.02)	<.001	.07	.14
Funding period	.07 (.02)	<.001	.03	.11
Campaign hearts	1.00 (.01)	<.001	.99	1.02
Target amount	.13 (.01)	<.001	.12	.13
Social shares x funding period	-.01 (.01)	.002	-.02	-.01
Multiple R-squared: .82				
Adjusted R-squared: .82				

4.7 Robustness Analysis

Lastly, a robustness analysis was conducted to test for consistency and reliability of our findings. The results in Table 7 show that the total number of comments does not have a significant relationship with the amount raised (*b* = -.01, *p*-value = .787). The previously significant negative relationship between the number of comments and the amount raised is no longer significant. This change suggests that comments might not have a clear effect on the amount raised when we consider other factors and interactions. The interaction between social shares and funding period does not have a significant relationship with the amount raised (*b* = -.01, *p*-value = .408). In the previous analysis, this relationship was significant. This means that the positive effect of social shares on the amount raised remains the same regardless of the campaign duration when we consider more factors and interactions. In alignment with the previous analysis, the total number of social shares has a significantly positive relationship with the amount raised (*b* = .06, *p*-value = .003), and interaction between total comments and funding period has a significantly negative relationship with the amount raised (*b* = -.02, *p*-value = .018).

Table 7 – Robustness Analysis of Total Comments, Social Shares, and Funding Period on Amount Raised (n=12,470)

	<i>b</i> (<i>SE</i>)	<i>p</i> -value	95% Confidence interval	
			Lower bound	Upper bound
Constant	2.23 (.08)	<.001	2.07	2.39
Comments	-.01 (.04)	.787	-.08	.06
Funding period	.05 (.02)	.008	.01	.09
Social shares	.06 (.02)	.003	.02	.10
Campaign hearts	1.07 (.01)	<.001	1.05	1.09
Target amount	.13 (.01)	<.001	.12	.13

Comments x funding period	-02 (.01)	.018	-.04	.00
Social shares x funding period	-.01 (.05)	.408	-.02	.01

Multiple R-squared: .82

Adjusted R-squared: .82

5. DISCUSSION

This study aimed to investigate the extent to which engagement metrics, namely comments and social shares, are correlated with the amount raised in crowdfunding campaigns. Additionally, it was investigated how project duration mediates this relationship. The main findings revealed that engagement through social shares has a significant positive relationship with the amount raised. Comments on the other hand showed a significant negative relationship with the amount raised. The analyses of the mediating effect of campaign duration between both engagement metrics and the amount raised revealed that the effect of engagement metrics diminishes over longer campaign durations.

For hypothesis 1a, “The number of comments in a crowdfunding campaign is positively related to the amount raised.” significant results have been found during the correlation and regression analysis. The correlation matrix indicated a significantly strong positive relationship. However, with the addition of target amount and campaign hearts as control variables in the regression analysis, the results showed a significant negative relationship. This direction change suggests that the control variables are confounding variables and a multivariate relationship is present. The effect of comments on the amount raised is not direct, but influenced by the control variables. The target amount and campaign hearts are influencing both comments and amount raised, thereby changing the relationship that was observed when no control variables were considered. Regarding campaign hearts, it is possible that campaigns with more hearts attract more comments and funds, indicating that campaign popularity drives the collection of more funds, rather than the number of comments. For the target amount, campaigns with higher target amounts might attract more attention and thus more comments are present. However, if the target amount is too ambitious, it could lead to lower success rates and less engagement. This finding is not in line with the existing literature, where it is shown that comments positively impact funding (Wang et al., 2018; Jia et al., 2023). Furthermore, previous literature indicates that public awareness and increased visibility of campaigns leads to increased funding (Kraus et al., 2016; Burtch et al. 2013). While the correlation matrix results are in line with these findings and provided added evidence for comments, target amounts and campaign hearts to have positive correlations with the amount raised, the regression analysis showed that both control variables are confounding variables that influence the dependent and independent variable. This is a new insight that was not extensively covered in earlier research.

For hypothesis 1b, “The duration of the crowdfunding campaign negatively moderates the relationship between the number of comments and the amount raised, weakening the positive effect of comments on donations.” significant results have been found during the moderation analysis. The model indicated a significant negative relationship between the interaction term and amount raised. This means that the longer

the campaign is collecting funds, the less effective comments become. This result is somewhat in line with previous research, which has determined that project duration positively impacts public awareness which in turn is an indication of campaign success (Burtch et al., 2013; Kraus et al., (2016). Burtch et al. (2013) also found evidence of a crowding-out effect, where donors may feel that their donations become less impactful as more funds are raised over time (Burtch et al., 2013). This suggests that while longer campaign durations can boost visibility, as explained by Kraus et al. (2016) and Burtch et al. (2013), they might also reduce the perceived importance of individual contributions and showcase a lack of confidence, making engagement metrics like comments less effective (Mollick, 2014).

For hypothesis 2a, “The total number of social shares in a crowdfunding campaign is positively related to the amount raised.” significant results have been found during the correlation matrix and regression analysis. The correlation analysis indicated a significantly strong positive relationship between social shares and amount raised. Similarly, the regression analysis revealed a significant positive relationship. This means that as the number of social shares increases, the amount raised increases. This finding is in line with previous literature. Kraus et al. (2016) and Burtch et al. (2013) discussed in their studies that public awareness and increased visibility of campaigns leads to increased funding. Social shares are a contributor to increased online presents and so is an indication of increased visibility and public awareness (Wang, 2021). While the significant positive relationship exists, the effect size can be considered quite modest. This could be an indication of the control variables acting as confounding variables like in hypothesis 1a. Campaigns with a lot of hearts and a high target amount could influence the amount raised as well as the total amount of social shares.

For hypothesis 2b, “The duration of the crowdfunding campaign negatively moderates the relationship between the number of comments and the amount raised, weakening the positive effect of comments on donations.” significant results have been found during the moderation analysis. The model indicated a significant negative relationship between the interaction term and amount raised. This means that the longer the campaign is collecting funds, the less effective social shares become. This finding is in line with previous literature. As discussed above in the discussion for hypothesis 1b, previous research has determined that project duration contributes to increased visibility. However, it's also been found that a longer duration can cause a crowding-out effect and showcase a lack of confidence. This suggests that while longer campaign durations can boost visibility and public awareness, which is positively related with crowdfunding success as explained by Kraus et al. (2016) and Burtch et al. (2013), it might also reduce the perceived importance of individual contributions, making engagement metrics like social shares less effective.

5.1 Implications

In terms of the theoretical implications, earlier literature has provided a comprehensive overview of the positive effect comments have on the amount raised (Wang et al., 2018; Jia et al., 2023). Contrary to these findings, our study shows a negative relationship between comments. Additionally, it was found that the control variables influence not only the amount raised, but also the number of comments. This finding is a new insight into the knowledge base of the relationship between engagement and funding success. While the findings for hypothesis 2a are in line with the findings of Kraus et al. (2016), Burtch et al. (2013) and Wang et al. (2021), that increased

visibility positively relates with success of a campaign, we only found a moderate effect size. This could, again, be due to the control variables acting as confounding variables. This further underlines the new insight into campaign hearts and funding goals affecting engagement metrics such as social shares and comments. These new insights are valuable for researchers, showing that multiple elements on crowdfunding pages influence each other, and not just the amount raised. The moderating effect of campaign duration has not been previously extensively studied. Previous research has mostly described how campaign duration negatively affects success and not how campaign duration affects engagement (Mollick, 2014; Burtch et al., 2013). The findings of our research provide further evidence into the negative effect of longer campaign durations. Specifically the negative effect longer campaigns have on the effectiveness of engagement. The regression models have shown that the control variable campaign hearts are the by far the biggest predictor of donations. This is a further insight into what element on a crowdfunding campaign page is most relevant in the prediction of campaign success. This goes back to the theory that campaigns with increased visibility tend to be able to raise more funds (Kraus et al., 2016; Wang et al., 2021). By campaign hearts impacting engagement metrics such as comments and social shares, it underlines the importance of how increased visibility of a project affects donations as well as engagement.

Regarding the practical implications, this thesis aimed to provide valuable insights for project creators on how engagement and project duration are correlated with total donations. The results of the correlation matrix indicated that social shares, comments, target amounts and campaign hearts all are positively correlated with amount raised, and so campaign creators should factor these elements into the planning and execution of their campaigns. The results of the regression analysis indicated that a 1% increase in the total number of social shares is associated with an approximate 0.0588% increase in the amount raised. While the impact seems rather low, in the grand scheme of an entire campaign, it can make a large difference in the donations. This finding should underline the importance for campaign creators to actively try to increase engagement through social shares. The results of the moderating analyses indicate that campaign creators should encourage comments and social shares early in the campaign to maximize impact. They should tailor campaign duration to balance visibility with engagement effectiveness. In conclusion, campaign creators can use these insights to optimize their strategies, focusing on generating high engagement early in the campaign and considering shorter project durations to maximize the impact of engagement.

6. CONCLUSION

The central question of this research was: **“To what extent is the engagement between campaign creators and donors related to the amount raised in crowdfunding campaigns?”**. The results of the regression analysis provide answers that differ from those suggested by the correlation matrix. The correlation matrix shows significant positive relationships of engagement metrics and the amount raised. The regression analyses show a moderate positive relationship between social shares and amount raised, and a negative relationship between comments and amount raised due to a multivariate relationship with the control variables. Overall, the findings indicate that while social shares are positively related with the amount raised, comments have a negative relationship when accounting for the influence of control variables. The moderation analyses show a significant effect where each additional comment or social share decreases the amount raised in longer project durations. As a result, longer campaign

durations seem to decrease the effectiveness of engagement metrics. Project creators should avoid increasing campaign durations with the goal to increase engagement benefits. Some platforms shy away from setting a campaign duration, this study speaks against this practice.

6.1 Limitations and further research

This study has some limitations. Firstly the study relied on data from a donation-based crowdfunding platform. While we discussed earlier that donation-based and reward-based crowdfunding both fall under philanthropic crowdfunding, which is the focus of this study, the sample may be limited to the generalizability of the findings to reward-based crowdfunding platforms. Secondly, the analyses focuses on specific engagement metrics like comments and social shares, but other potential engagement factors, for example updates or an FAQ page were not considered, which might also influence the amount raised and change our results. Thirdly the sample size, while robust, had missing data for some variables. This could affect the robustness of the results. The handling of the missing data through deletion could have introduced bias and negatively affected the accuracy of the results, as it reduces the sample size and may change important patterns in the data.

This research provides several avenues for further research. The relationship between engagement and amount raised further can be investigated further, and how exactly campaign hearts and funding goals affect engagement metrics. This multivariate relationship between engagement metrics, campaign hearts and target amount, and the amount raised should be explored further to gain deeper insights into the dynamics of a crowdfunding page. While the study provides practical recommendations, the actual implementation of these strategies by campaign creators and their effectiveness in real-world settings were not tested. This could be investigated further to gain insights into how to implement these findings in crowdfunding campaigns. Lastly, further research could focus on developing new theories that account for the diminishing returns of comments and social shares over longer campaign durations, and design more comprehensive studies to investigate how and why the effectiveness of comments and social shares changes over time.

7. ACKNOWLEDGEMENTS

I would like to thank my supervisor Dr. Claire van Teunenbroek for her incredible support and feedback during my thesis project. I would also like to thank her colleague for sharing their dataset with me, and again thank Claire for putting me in contact with them. Finally I would like to thank my bachelor circle, friends and family for their support.

8. REFERENCES

- {1} Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in equity crowdfunding. *Entrepreneurship theory and practice*, 39(4), 955-980.
- {2} Arshad, N., Shneor, R., & Berndt, A. (2023). The reward crowdfunding campaign management process: an engagement perspective. *International Journal of Entrepreneurial Behavior & Research*, 30(11), 1-18.
- {3} Bagheri, A., Chitsazan, H., & Ebrahimi, A. (2019). Crowdfunding motivations: A focus on donors' perspectives. *Technological Forecasting and Social Change*, 146, 218-232.
- {4} Berns, J. P., Figueroa-Armijos, M., da Motta Veiga, S. P., & Dunne, T. C. (2020). Dynamics of lending-based prosocial crowdfunding: Using a social responsibility lens. *Journal of Business Ethics*, 161, 169-185.
- {5} Borst, I., Moser, C., & Ferguson, J. (2018). From friendfunding to crowdfunding: Relevance of relationships, social media, and platform activities to crowdfunding performance. *New media & society*, 20(4), 1396-1414.
- {6} Brown, P. A., & Anderson, R. A. (2023). A methodology for preprocessing structured big data in the behavioral sciences. *Behavior Research Methods*, 55(4), 1818-1838.
- {7} Bürger, T., & Kleinert, S. (2021). Crowdfunding cultural and commercial entrepreneurs: An empirical study on motivation in distinct backer communities. *Small Business Economics*, 57(2), 667-683.
- {8} Burtch, G., Ghose, A., & Wattal, S. (2013). An empirical examination of the antecedents and consequences of contribution patterns in crowd-funded markets. *Information systems research*, 24(3), 499-519.
- {9} Cavalcanti Junqueira, M. I., & Soetanto, D. (2022). Funding decisions and the role of trust: A qualitative study of reward-based crowdfunding in the creative industries. *Management Decision*, 60(8), 2174-2194.
- {10} Cosh, A., Cumming, D., & Hughes, A. (2009). Outside entrepreneurial capital. *The Economic Journal*, 119(540), 1494-1533.
- {11} Cumming, D. J., Leboeuf, G., & Schwienbacher, A. (2020). Crowdfunding models: Keep-it-all vs. all-or-nothing. *Financial Management*, 49(2), 331-360.
- {12} Efrat, K., & Gilboa, S. (2020). Relationship approach to crowdfunding: How creators and supporters interaction enhances projects' success. *Electronic Markets*, 30(4), 899-911.
- {13} Fraser, S., Bhaumik, S. K., & Wright, M. (2015). What do we know about entrepreneurial finance and its relationship with growth?. *International small business journal*, 33(1), 70-88.
- {14} Gangi, F., Daniele, L. M., Scuotto, V., & Tani, M. (2023). Uncovering Backers' Intention to Participate in Reward-Based Crowdfunding: The Role of Value Cocreation. *IEEE Transactions on Engineering Management*.
- {15} Gompers, P. A., & Lerner, J. (2004). The venture capital cycle. MIT press.
- {16} Gupta, J. P., Li, H., Kärkkäinen, H., & Mukkamala, R. R. (2023). The role of project owners' and potential backers' implicit social ties in crowdfunding project success. *Internet Research*, 34(7), 1-23.
- {17} Gupta, S., Zhang, F., & Zhang, H. (2023). Investor participation in reward-based crowdfunding: impacts of entrepreneur efforts, platform characteristics, and perceived value. *Information Technology and Management*, 24(1), 19-36.
- {18} Hornuf, L., & Schmitt, M. (2016). Success and failure in equity crowdfunding. *CESifo DICE Report*, 14(2), 16-22.
- {19} Jia, L., Zhang, Y., & Lin, C. (2023). Social interaction and the successful exit of cultural and creative crowdfunding projects: Evidence from the Modian platform. *Information Technology & People*.
- {20} Kickstarter. (2024). Stats. Kickstarter. <https://www.kickstarter.com/help/stats>.
- {21} Kraus, S., Richter, C., Brem, A., Cheng, C. F., & Chang, M. L. (2016). Strategies for reward-based crowdfunding campaigns. *Journal of Innovation & Knowledge*, 1(1), 13-23.
- {22} Kunz, M. M., Bretschneider, U., Erler, M., & Leimeister, J. M. (2017). An empirical investigation of signaling in reward-based crowdfunding. *Electronic Commerce Research*, 17, 425-461.
- {23} Kuppuswamy, V., & Bayus, B. L. (2018). Crowdfunding creative ideas: The dynamics of project backers (pp. 151-182). Springer International Publishing.
- {24} Liu, X., Zhao, N., Zhang, M., & Cui, X. (2024). Consequences of donors' trust toward project-related information: Impact on charitable crowdfunding propagation in social networks. *Journal of Data, Information and Management*, 1-14.
- {25} Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of business venturing*, 29(1), 1-16.
- {26} Paschen, J. (2017). Choose wisely: Crowdfunding through the stages of the startup life cycle. *Business horizons*, 60(2), 179-188.
- {27} Salido-Andres, N., Rey-Garcia, M., Alvarez-Gonzalez, L. I., & Vazquez-Casielles, R. (2021). Mapping the field of donation-based crowdfunding for charitable causes: systematic review and conceptual framework. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 32, 288-302.
- {28} Shneor, R. (2020). Crowdfunding models, strategies, and choices between them. *Advances in crowdfunding: Research and practice*, 21-42.
- {29} Simon, M., Stanton, S. J., Townsend, J. D., & Kim, J. (2019). A multi-method study of social ties and crowdfunding success: Opening the black box to get the cash inside. *Journal of Business Research*, 104, 206-214.
- {30} Sisco, M. R., & Weber, E. U. (2019). Examining charitable giving in real-world online donations. *Nature communications*, 10(1), 3968.

{31} Steigenberger, N. (2017). Why supporters contribute to reward-based crowdfunding. *International Journal of Entrepreneurial Behavior & Research*, 23(2), 336-353.

{32} Telve, L. (2019). Building a successful crowdfunding campaign: what marketing factors do really matter for your project? (Doctoral dissertation).

{33} Van Teunenbroek, C., & Bekkers, R. (2020). Follow the crowd: Social information and crowdfunding donations in a large field experiment. *Journal of Behavioral Public Administration*, 3(1).

{34} Van Teunenbroek, C., Dalla Chiesa, C., & Hesse, L. (2023). The contribution of crowdfunding for philanthropy: A systematic review and framework of donation and reward crowdfunding. *Journal of Philanthropy and Marketing*, 28(3), e1791.

{35} Van Teunenbroek, C., & Hasanefendic, S. (2023). Researching the crowd: Implications on philanthropic crowdfunding and donor characteristics during a pandemic. *Journal of Philanthropy and Marketing*, 28(1), e1773.

{36} Van Teunenbroek, C., & Smits, R. (2023). Four lessons learned: Employees' perceptions of fundraising via reward-based crowdfunding. *Journal of Philanthropy and Marketing*, 28(3), e1793.

{37} Wang, F., Yang, Y., Tso, G. K., & Li, Y. (2021). The determinants of social promotion success: A case study of crowdfunding projects. *Applied Stochastic Models in Business and Industry*, 37(2), 251-265.

{38} 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.

{39} Wessel, M., Thies, F., & Benlian, A. (2016). The emergence and effects of fake social information: Evidence from crowdfunding. *Decision Support Systems*, 90, 75-85.

{40} Wiepking, P. (2021). The global study of philanthropic behavior. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 32(2), 194-203.

{41} Woloszyn, J. (2024, March 19). 10 best crowdfunding sites for Smart Fundraising. Classy. <https://www.classy.org/blog/best-crowdfunding-sites/#:~:text=GoFundMe%20is%20the%20trusted%20leader,generosity%20with%20Classy%20since%202010>.

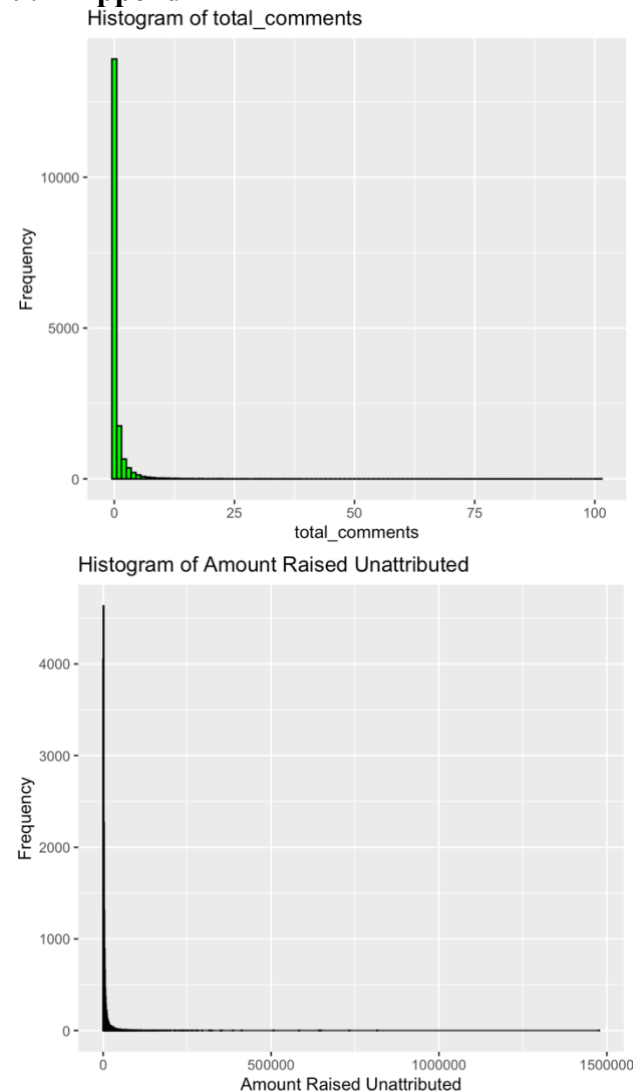
{42} Zhang, F., Zhang, H., & Gupta, S. (2023). Investor participation in reward-based crowdfunding: impacts of entrepreneur efforts, platform characteristics, and perceived value. *Information Technology and Management*, 24(1), 19-36.

{43} Zhao, Y., Harris, P., & Lam, W. (2019). Crowdfunding industry—History, development, policies, and potential issues. *Journal of Public Affairs*, 19(1), e1921.

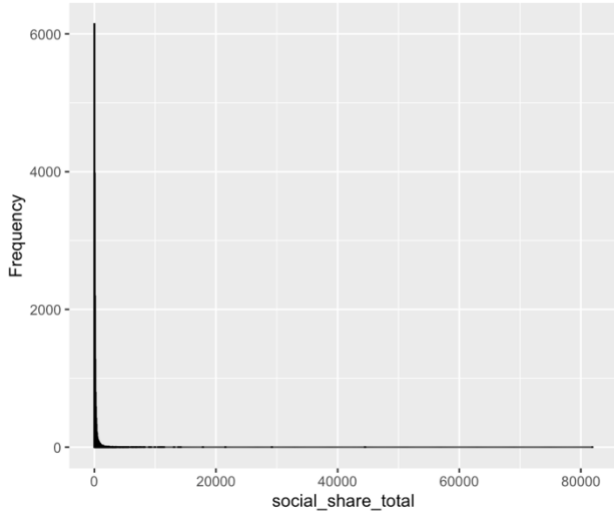
{44} Zheng, H., Hung, J. L., Qi, Z., & Xu, B. (2016). The role of trust management in reward-based crowdfunding. *Online Information Review*, 40(1), 97-118.

9. APPENDIX

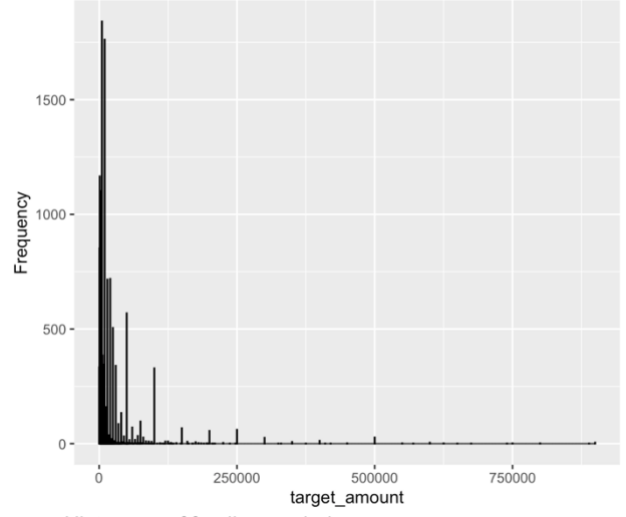
9.1 Appendix 1



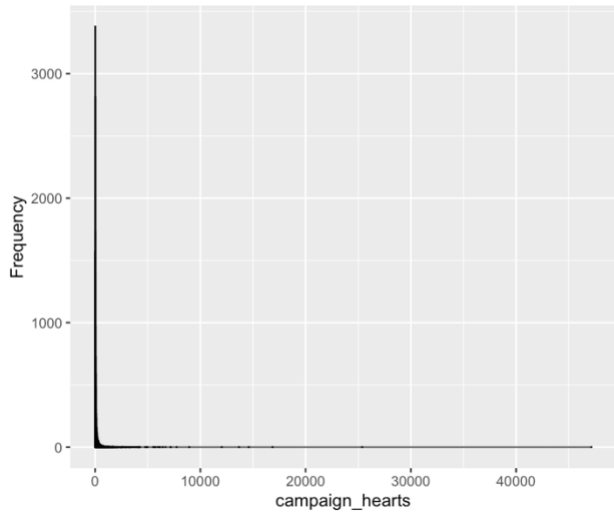
Histogram of social_share_total



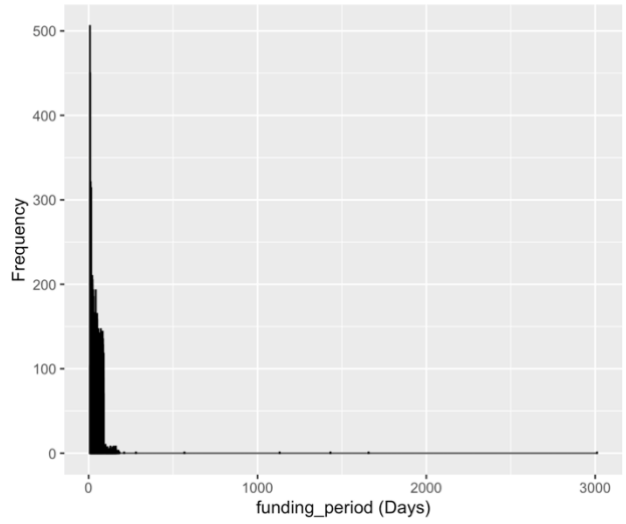
Histogram of target_amount



Histogram of campaign_hearts



Histogram of funding_period



9.2 Appendix 2

