

# Crowdfunding Project Success for Game Developers: Evidence from Kickstarter and Steam

Mohsen Jozani  
Augusta University  
[mjozani@augusta.edu](mailto:mjozani@augusta.edu)

Ali Balapour  
Northern Kentucky University  
[balapoura1@nku.edu](mailto:balapoura1@nku.edu)

Morteza Safaei Pour  
San Diego State University  
[msafaeipour@sdsu.edu](mailto:msafaeipour@sdsu.edu)

## Abstract

*Crowdfunding has revolutionized business investor connection in many industries, one of which is game development. Traditionally, triple-A game developers and publishers were able to monopolize the industry, but with the emergence of crowdfunding platforms, smaller game development teams and companies have a way of competing with large corporations by attracting funds. However, Kickstarter reports show that two-third of game funding projects fail to meet their goals. This study develops and empirically examines a theoretical model to predict video game's crowdfunding success to address this gap. We collect data on video game projects that were initiated on Kickstarter and were later released on the Steam platform. Our analysis of more than 7000 reward tiers for 1967 projects reveals that reward type (free game copy, in-game perks, accessories, artworks, and involvement), and reward description length positively influence funding success, while the number of reward tiers and funding period negatively impact funding success.*

## 1. Introduction.

Crowdfunding platforms have impacted the business landscape since their emergence; recent financial predictions are projecting that crowdfunding transactions would exceed \$1 Billion in and after 2021 [1]. Crowdfunding platforms initiated a new route for some software developers to attract funds for their projects. In particular, video games are among the most popular categories, such that Kickstarter and Indiegogo have dedicated tabs on their websites for this category. For an oligopolistic industry like gaming, in which triple-A developers and publishers dominate the business, crowdfunding has revolutionized investor and developer relationships and opened opportunities for small businesses to compete [2]. While this opportunity is unique, the challenge ahead of game developers is to fund their projects successfully. A recent Kickstarter

report revealed that 37% of gaming projects were successfully funded [3, 4], which means roughly two out of three projects fail. Therefore, the main objective of this study is to investigate the factors that could potentially increase gaming project's success on Kickstarter.

Kickstarter, as a renowned reward-based platform, moderates the projects and connections between project owners and investors. Gaming projects have detailed project descriptions, and they offer a variety of rewards to attract investors. Our review of reward-based crowdfunding literature suggested inconsistent results when it comes to project description and compensations. A value-based view suggests that three types of rewards satisfy investors: Utilitarian rewards, socioemotional rewards, and participatory rewards [5]. Another study found that the project funder's personal network and the project quality predict a funding success [6]. Ahlers et al. [7], used signaling theory to examine the effect of venture quality and uncertainty on crowdfunding success. In short, the current state of the literature suggests that crowdfunding project success is a yet-to-be-explored phenomenon, and this study contributes to this domain by focusing on investigating the dynamic relationship between project description, rewards, and projects' funding success. Accordingly, our research question is: What is the effect of reward type on crowdfunding success for games?

To answer the presented research question, we obtained a unique dataset of about 2000 Kickstarter gaming projects that were later released on the Steam platform. Using semantic classification and machine learning algorithms, we came up with a set of thematic classifications for categories of rewards that had the most effects on project funding success on Kickstarter.

The contributions of this study are two folds. First, there are useful, practical values for game developers who wish to get their projects successfully funded by the crowd. Knowing which classes of rewards have the highest impact on their project success, the developer could adjust and revise their strategies to focus on

the rewards tiers that are most attractive to the users. Second, from a theoretical perspective, there is a dearth of studies on factors that lead to crowdfunding project success, mainly because this innovative phenomenon is still in its infancy and evolving. By extension, to our knowledge, there is research scarcity on crowdfunded game projects and their fate. Therefore, this study contributes to this literature by providing new insights and results that can shed light on this phenomenon and enrich our understanding of this investor-developer relationship in the game development industry.

## 2. Literature review

Rewards are the main driver of investors' motive to invest on reward-based platforms [8]. Investors invest in these projects for reasons such as self-serving consumption, altruism, and social belonging [9]. On reward-based funding platforms, fundraisers offer multiple options with different levels of compensations (prices). Backers (the people who back the project; the investors), then decide which option to choose based on their preferences. The studies on reward tiers suggest different results. For example, some found that offering a variety of reward options is beneficial for crowdfunding projects to attract investors, mainly because the variety in options caters to different investor tastes [10], while others have suggested that too many options could confuse the investor and complicate the decision-making process, thus adversely affecting project success [11]. A recent study found that the number of options has an inverted U-shape relationship with backers' decision on supporting a crowdfunding project [8].

In addition to the number of options, the rewards' quality is important to the backers. Backers carefully assess the gain out of each reward option, and the number of options would not matter if the compensations are low-key within the standards of the project category. Our literature review reveals that this factor is not as widely studied as the number of options. One survey study found that project sponsors are unsatisfied with the quality of rewards and their delivery method [12] the authors recommended that the fundraisers need to pay more attention to the quality of the rewards if they want success, but one question remains for any fundraiser: What they should write or how they should write to make the rewards high quality and more compelling?

Projects on crowdfunding platforms are often launched by small operations, many of which have no access to extensive resources to improve project presentation or test which rewards are more attractive

[13]. This problem opens a gap in this domain that has not been addressed, and this study is trying to determine the semantic behind rewards for successful projects on Kickstarter.

Video games are one subgroup of software projects, meaning that their outcomes are digital products. Crowdfunding platforms have revolutionized the digital game industry [14]. Crowdfunding has changed players' position to the developers such that game buyers are now prosumers (proactive consumers) and invest in the same games that they play [2].

The majority of gaming rewards on crowdfunding platforms are digital compensations in the forms of receiving a free copy, in-game digital rewards, subscriptions, and so forth. It is easier for consumers to compare and contrast the physical products or rewards in each tier or class and pledge to the project, but for games in which the majority of compensations are digital, it becomes difficult (for the fundraiser and the investor) to clearly differentiate the values.

For developers, the cost of reproducing and distributing games is minimum (similar to their digital rewards); it means that they should be able to give as many free copies and in-game rewards as needed to motivate the investors and obtain the desired funding for the project. However, the fact that almost two-thirds of gaming projects fail to meet funding goals [3], raises the question of what types/classes of rewards are the most (or less) attractive to the investors (most of which are players of these games).

An emerging body of literature is dedicated to strategy formulation around rewards on crowdfunding platforms. Thürridl et al. [15] empirically evaluated the most successful crowdfunded projects in all categories against different classes of rewards offered in each. They concluded that rewards with one or more of the following eight dimensions tend to lead to success: (1) Reward type; (2) Tangibility; (3) Scarcity; (4) Geographical limitation (project scope); (5) Monetary value/ Reward tier; (6) Recognition; (7) Level of collaboration (supporters as collaborators); and (8) Core features (a value in wholesome-package of rewards and the ultimate product of the project). While these broad dimensions illustrate a better roadmap for future studies and existing crowdfunding projects to revise their strategies, more in-depth classification is needed for each project category. For instance, arts, crafts, or food projects are different from gaming projects in many aspects, hence their rewards.

In short, a different and specialized classification of reward types is needed for gaming projects to help developers achieve success in their fundraising campaigns and address this gap in the evolving scholarly

works around crowdfunding success.

### 3. Theoretical framework

This study uses intrinsic and extrinsic motivation theories as the basic framework for classifying the rewards offered to game investors. As stated, on reward-based platforms, user motivation is the main driver of the decision to invest [9]. Some rewards are rooted to offer immediate compensations like free game copy and in-game rewards, while others are more about altruistic compensations like showing support for the gaming community by supporting developers, or being involved in the game by voicing characters, or listing names as honorable supporters in the ending script [16].

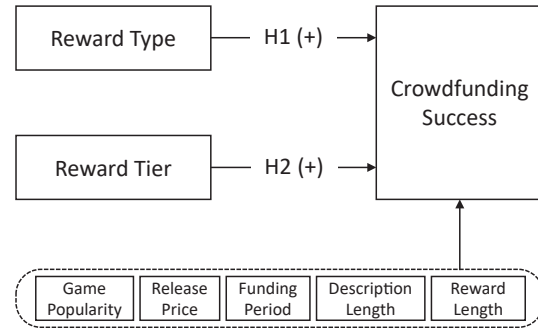
A few studies on crowdfunding motivations adopted these frameworks and found them to be a good fit in explaining the grand-level perspective on why people get involved with the projects [9]. In this study, we use these grand views to have a baseline for finding sub-categories for each reward class. Figure 1 represents the research model.

Backers might pledge funding to the projects according to the expected utility derived from playing the final game or receiving rewards associated with the pledges they have committed [17, 18]. This is the basic utilitarian expectation that motivates users to back a project. On the other hand, reward-based crowdfunding has its roots in the charity field, and altruistic motives could motivate backers [17, 9]. We stress that extrinsic and intrinsic are two grand-level view of the users' motivation, but to be practical in the method and result section, we try to bring out the sub-set and different classifications of reward-types that has the most statistically meaningful effects on the crowdfunding success. The user motivation only serves as the theoretical framework to guide these classifications. Hence, we hypothesize that:

- H1: Reward type positively influences crowdfunding success.

As discussed earlier, the number of reward tiers influences crowdfunding success. Some have found that it positively influences success, while others have a negative impact on success, but this relationship has not been investigated [10, 11]. Conceptually, there should be an association between the number of reward tiers and the crowdfunding success of game projects. For gaming projects, we theorize that having more reward options could create more opportunities to receive funds by satisfying different types of investors' expectations. Therefore, we hypothesized that:

**Figure 1. Conceptual Model of the Study**



- H2: The number of reward tiers positively influences crowdfunding success.

Lastly, this study uses a few control variables that might potentially influence crowdfunding success. prior crowdfunding studies found empirical support that project description length positively influences crowdfunding success [19, 20]. However, no study has ever investigated whether providing more information, specifically in the reward description, would have the same effect on achieving success. Theoretically, more words should be more convincing to the investor because they get to know all the details about a reward tier; thus, we expect reward length to be positively related to crowdfunding success. Besides, we also control for the effect of description length, funding period, initial release price, and game popularity.

### 4. Research method

In this study we adopt deep learning based Natural language processing (NLP) techniques to code and extract sub-categories for intrinsic and extrinsic motivations. Then we use econometric models to test our hypothesized relationships. First, we describe the dataset and our data matching approach. Next, we discuss our data processing method and introduce the study measures. Finally, we discuss the analysis and results.

#### 4.1. Data Collection

Data were collected from the Kickstarter platform in March 2021. Using an automated web scraper, we first searched for Kickstarter projects with the "Video Game" tag and then collected the details for each project. Information such as project name, description, the amount of money raised, funding goal, number of backers, project state, last update, location, story, and funding period were collected. We also collected the various reward tiers for each project. Video game

[illegible]

Next, based on project and developer names, we matched our Kickstarter dataset with the video games posted on the Steam platform. We collected the data on the initial release price of the games as well as the estimated number of users who purchased the game from the Steam store which we use as a measure of game popularity.

Our final dataset contains the information of 7084 reward tiers for 1967 video game projects that were initiated on Kickstarter and were eventually released on Steam.

Our goal was to discover and classify the type of rewards offered by video game developers on the Kickstarter platform. First, we cleaned the data by removing non-English characters and retrieved only

We leveraged text mining methods to extract offered items from provided text description for each reward. Using manual labeling, we labeled 1,500 reward texts with labels consisting of "game" (694), "perk" (147), "involvement" (215), "accessory" (149) and "artwork" (444) labels. We divide the resulted labeled data set to 60%, 20% and 20% portions respectively for training (900), validation (300) and testing (300).

For our text classification task we used bert-base-uncased model consisting of 12-layer, 768-hidden, 12-heads, 110M parameters that pre-trained on a corpus of 2,500M words of unlabeled data extracted from English Wikipedia.

The pre-trained models comes with their own text cleaning and tokenizer [25]. We stopped the training when there was no improvement in the training loss for the three consecutive steps. The performance metrics for BERT present significant improvement over three other based lines (TD-IDF + {SVM, Logistic regression, Naïve Bayes}) [26] that are reported in Table 1. Due to the class imbalance, F1-micro and F1-Macro are

better metrics to compare the models [27]. BERT model achieved F1-micro and F1-Macro of (0.8899, 0.8900), (0.7056, 0.92), (0.8163, 0.9133), (0.8669, 0.9500) and (0.9079, 0.9166) respectively for game, perk, involvement, accessory and artwork classes.

### 4.3. Study Measures

Project owners on Kickstarter must define a funding goal and a funding deadline and a project will be successfully funded only if the funding goal is reached before the specified deadline. Kickstarter follows an “all-or-nothing” approach meaning that project backers will be charged, and the project owners will receive the funds only if the project goal is achieved [28]. Based on this logic, we define total project success as:

$$project\_success = \left( \frac{money\_raised}{project\_goal} \right)$$

For example, a project with a \$10,000 goal that has raised \$35,000 has a project success score of 3.5. However, the goal of this study is to delve into the details of project success. Specifically, we are interested in understanding how each individual reward type contributes to the total project success. To capture this nuance, we need to multiply the total project success by the ratio of success achieved by each reward tier (i.e., the amount asked for each reward tier multiplied by the number of backers of a given tier divided by the total amount of money raised). Therefore, aggregating all the *cf\_success* values for each project yields a measure for the total project success. We define:

$$cf\_success = \log_{10} \left( \frac{money\_raised}{project\_goal} \times \frac{backers \times pledge\_amount}{money\_raised} \right)$$

In the above example, if the project had 12 reward tiers and the \$100 tier was backed by 12 backers, the *cf\_success* will be equal to (3.5 \* 1200/35000) or 0.12.

Next, we consider the 5 type of rewards that we identified during our Data Processing stage. All these reward types are recorded as dummy variables (1 if the reward type is included in the reward tier). *game* indicates if a physical or digital copy of the game is included in the reward tier. *perk* refers to in-game perks such as weapons, vehicles, or skins that can be included in the reward tier. *accessory* indicates if game accessories such as t-shirts, mugs, plush toys, or keychains are included in the reward tier. *artwork* captures the presence of artworks such as posters, maps, soundtracks, artbooks, or wallpapers in the reward tier.

Finally, *involvement* indicates if the developer promises to involve the contributor in building an element in the game or in game’s launch event. Moreover, *reward\_tiers* shows the number of reward options for each project. *reward\_length* indicates the number of words used to describe each reward tier. Table 2 shows the summary statistics for our study variables.

## 5. Analysis and results

To test our hypotheses, we use multilevel mixed-effects generalized linear model (MEGLM). MEGLM is a statistical approach for modeling nested data. In this study, we are examining the effect of reward type and the number of reward tiers on the performance of reward tiers that are nested within each video game project. Each observation (reward tier) is a member of a group (project), and we need to account for group membership as the project itself has a crucial role in determining the outcome. For each project we have 1 to 37 reward tiers and therefore we fit a two-level model that accounts for the random coefficients of the second level variables (i.e., *game*, *perk*, *involvement*, *accessory*, *artwork*, and *reward\_length*). We formally define our econometric model as:

$$\begin{aligned} cf\_success_{ij} = & \beta_0 \\ & + \beta_1 game_{ij} + \beta_2 perk_{ij} \\ & + \beta_3 involvement_{ij} + \beta_4 accessory_{ij} \\ & + \beta_5 artwork_{ij} + \beta_6 reward\_tiers_j \\ & + \beta_7 reward\_length_{ij} + \beta_8 fund\_period_j \\ & + \beta_9 initial\_price_j + \beta_{10} popularity_j \\ & + \beta_{11} description\_length_j \\ & + u_j + \epsilon_{ij} \end{aligned}$$

where  $i = \{1, \dots, 37\}$  show the reward tiers, and  $j = \{1, \dots, 7117\}$  are the projects. The random effect component of our model ( $u_j$ ) occurs at project level (*project\_id*) and serves to shift the intercept of the regression line for each individual project. Table 3 summarizes the results of our multilevel linear model.

To ensure the validity of our results, we performed variance inflation factor (VIF) test and as shown in Table 4, the VIF values are well below the acceptable threshold of 10. Therefore, we can conclude that our model does not suffer from the problem of multicollinearity.

Column (A) in Table 3 shows the regression results with the raw coefficients. There is a strong positive relationship between all the 5 reward types examined and the dependent variable of our study (*log\_cf\_success*), thus supporting H1. Surprisingly, the



**Table 1. Performance metrics of text classification trained models for game, perk, involvement, accessory and artwork classes.**

Model	Game			Perk			Involvement			Accessory			Artwork		
	Accuracy	F1-Macro	F1-Micro	Accuracy	F1-Macro	F1-Micro	Accuracy	F1-Macro	F1-Micro	Accuracy	F1-Macro	F1-Micro	Accuracy	F1-Macro	F1-Micro
BERT	0.89	0.8899	0.8900	0.92	0.7056	0.92	0.92	0.8163	0.9133	0.95	0.8669	0.9500	0.92	0.9079	0.9166
TD-IDF+SVM	0.84	0.8431	0.8433	0.91	0.6756	0.91	0.89	0.7316	0.8866	0.94	0.7717	0.9366	0.90	0.8787	0.9066
TD-IDF+LR	0.81	0.8099	0.8114	0.91	0.7052	0.9066	0.88	0.7494	0.8866	0.93	0.7666	0.93	0.92	0.8921	0.9166
TD-IDF+NB	0.81	0.8098	0.8100	0.87	0.4699	0.8866	0.85	0.4604	0.8533	0.90	0.4727	0.8966	0.82	0.7222	0.82

**Table 2. Summary statistics**

Variable	Obs	mean	std dev	min	max
log_cf_success	7,129	-1.52	0.98	-5.51	3.87
game	9,793	0.64	0.48	0	1
perk	9,793	0.10	0.30	0	1
involvement	9,793	0.15	0.36	0	1
accessory	9,793	0.08	0.27	0	1
artwork	9,793	0.35	0.48	0	1
reward_tiers	9,793	11.85	5.31	1	37
reward_length	9,793	153.60	127.53	0	1463
fund_period	9,803	32.77	8.39	2	90
initial_price	9,776	7.47	10.51	0	199.99
popularity	9,816	134591.50	589316.20	20000	10000000
description_length	9,862	88.51	53.97	0	254

relationship between reward tiers and project success was found to be negative and significant, suggesting that H2 is not supported. With regards to the control variables, *reward\_length* has a positive and significant coefficient indicating that longer reward descriptions are associated with higher degrees of project success. Moreover, longer funding periods are associated with lower chances of success and while games with higher release prices tend to be more successful on Kickstarter platform, the effect of popularity was also positive and significant. Finally, description length was found to be negatively related to crowdfunding success.

Column (B) shows the standardized regression coefficients and allows us to compare the effect of various reward types on project success. Examining these standardized coefficients, we can see that offering a copy of the game, followed by involvement rewards are the stronger predictors of success followed by in-game perks, artworks, and game related accessories.

## 6. Discussion, contributions, and future directions

Crowdfunding is a popular alternative to traditional funding that has impacted the worldwide economy [29]. Against this progress and popularity, success on crowdfunding platforms is a mainstream business problem [19]. This study was a systematic investigation to identify the factors that could improve the success chances of crowdfunding projects in the video gaming industry, one of the popular topics in crowdfunding platforms.

Our results indicate that, for the most part, the proposed model holds, and different types of rewards

**Table 3. Results of the MEGLM Model**

Dependent Variable: <i>log_cf_success</i>		
Variable	(A) Unstandardized	(B) Standardized
game	0.52787*** (0.02)	0.25348*** (0.01)
perk	0.22292*** (0.03)	0.06620*** (0.01)
involvement	0.36763*** (0.03)	0.13165*** (0.01)
accessory	0.12816*** (0.04)	0.03516*** (0.01)
artwork	0.17418*** (0.02)	0.08293*** (0.01)
reward_tiers	-0.01681*** (0.00)	-0.08919*** (0.02)
reward_length	0.00043*** (0.00)	0.05511*** (0.01)
fund_period	-0.01021*** (0.00)	-0.08574*** (0.02)
initial_price	0.00606** (0.00)	0.04285*** (0.02)
popularity	0.00000* (0.00)	0.06367*** (0.02)
description_length	-0.00336*** (0.00)	-0.18140*** (0.02)
constant	-1.38501*** (0.10)	-1.60905*** (0.02)
No. of Obs.	7,084	7,084
No. of Groups	1,747	1,747
log likelihood	-8092.61	-8092.61

Notes: \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$   
Standard errors in parentheses.

have different effects on successful funding. By extension, this study collected a unique dataset on Kickstarter video game projects that were later launched on the Steam platform (known gaming platform). We coded the reward tiers based on five classes of game copy, involvement, Perks, Accessory, and artwork. We grouped these classes into intrinsic (involvement) and extrinsic (Game copy, perks, accessory, and artwork) motivator's scheme in human motivation theory. First, we found that offering a free copy of the game is the most (statistically) dominant predictor of video game funding success. Offering a game copy or in-game perks (character, weapon, etc.) are the most immediate tangible reward one could receive, and it is not a surprise that the majority back the projects to receive a free copy and in-game items. This finding is consistent with prior works on crowdfunding lending in which they found the extrinsic language used in crowdfunding platforms positively influences investors' preferences towards lending money to projects [30]. It should be mentioned that most investors in this context are gamers themselves, and thus, they look forward to testing the game once it is made; naturally, offering a free copy of the game should satisfy the users' needs.

Second, other tangible rewards such as accessories, artworks, and in-game perks also predict project success. These rewards are often targeted to attract

**Table 4. VIF Test Results**

Variable	VIF	1/VIF
<i>game</i>	1.10	0.91
<i>perk</i>	1.04	0.96
<i>involvement</i>	1.22	0.82
<i>accessory</i>	1.08	0.92
<i>artwork</i>	1.18	0.85
<i>reward_tiers</i>	1.14	0.88
<i>reward_length</i>	1.42	0.71
<i>fund_period</i>	1.00	1.00
<i>initial_price</i>	1.09	0.92
<i>popularity</i>	1.06	0.95
<i>description_length</i>	1.05	0.95
<b>Mean VIF</b>	1.13	

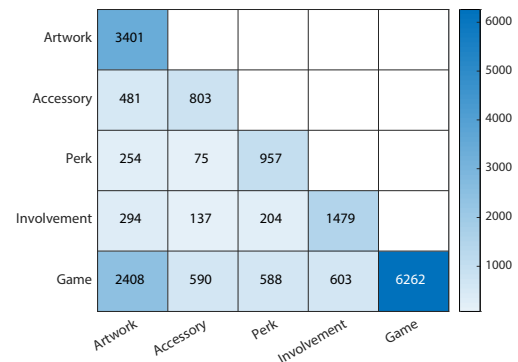
additional funding from the same people who have invested in the game or to reach out to the developer's friends, parents, or family who may like to show their support for the game. These people may invest in the projects to show their appreciation and support and receive a token or reminder such as a mug or a t-shirt in return.

Third, we found that involvement positively influences project funding success. In fact, it is the second important predictor of success after offering a copy of the game. This highlights the fact that intrinsic motivators influence investors' decisions to back projects. Game audiences value symbolic recognition like their faces appearing in-game or their names integrated into the game. Prior works consistently suggested that investors consider altruistic motives [15, 9] when deciding about crowdfunding investment because they contribute a small amount of money that they would not mind giving someone for their success.

Furthermore, we found reward description length increases the success chances. This means the more descriptive reward tier would perform better in convincing the investors to commit to that category. However, we found an excessive extension of the funding period hurts the funding success. Other studies have found that an increase in the funding period does not affect project success [20] Likewise, we found that for gaming projects, it is most likely that extending the funding period could only hurt the funding success. Lastly, our results depicted that increasing reward tiers would negatively impact funding success. This could be due to reasons such as overcomplicating the decision-making process for the investor [11].

The co-occurrence matrix in Figure 3 shows that game copy followed by artwork are the most

**Figure 3. Co-occurrence of reward types**



frequent reward types and they also have the highest co-occurrence in the reward descriptions (2408). Moreover, in-game perk and accessory have the lowest number of co-occurrences. Understanding the effect of various reward types can guide developers' decision and help bundle the optimum reward types for each tier.

## 6.1. Contributions

This study contributes to the ongoing research on crowdfunding success by focusing on a unique niche in the game development industry. First, prior works on crowdfunding success, for the most part, did not thoroughly investigate the reward types. The existing body of literature has tried to investigate factors that are primarily concerned about the project, and reward types did not receive the attention it merits. To our knowledge, a few investigated the reward types, yet they are not applicable to all categories, such as video game projects [15]. This is important because before deciding to commit to a project, the investors spend time assessing the rewards' values. Therefore, finding which classes are influential in project funding success sheds light on the unique linguistics that defines success on crowdfunding platforms.

Second, the gaming industry is a massive value chain in the IS field; yet there is a dearth of studies on this trendy phenomenon from industry, developer, investor, and player perspectives. Hence, this study highlighted the economic and social aspects of games for investors and players as proactive consumers by focusing on the gaming industry. Lastly, success is primarily studied as a binary variable of meeting the goal or not meeting the goal [31, 32, 33, 20]. The bipolar approach to success would not allow the researcher to differentiate the success among funded projects. Some projects would only meet the goal, while others are overly successful and triple the funding goal, yet a binary

approach treats them the same. Therefore, this study used a continuous dependent variable for success that considers each reward category's contribution towards the funding goal.

## 6.2. Implications

This study has a few implications for fundraisers on crowdfunding platforms. First, our results indicate that if a fundraiser should offer free game copy because this is going to determine the success of their funding campaign. Second, we encourage fundraisers to follow a more targeted and detailed description for their reward tiers because we found the increase in the reward description length takes them one step closer to convince investors and achieve funding success. Third, extending the funding period on platforms does not necessarily lead to success for a fundraiser; in fact, it can reduce their likelihood of achieving success if fundraisers are to extend their funding period. Fourth, in addition to a free copy, if game projects offer in-game items like weapons, characters, or outside of the game accessories like mugs, T-shirts, soundtracks, and wallpaper, they will achieve success in their funding. Last but not the least, the number of reward tiers should not be too many because the fundraisers are going to make it harder for their investors to decide and overwhelm them with too many options.

Moreover, this study has a broader implications for crowdfunding projects in general. For the most part, digital projects like music, film, and video could experience difficulty in their fundraising because in general as stated the crowdfunding success is low across all projects on platforms such as Kickstarter. One implication for other digital projects is to consider factors that we found to be effective when they design their reward tiers. For instance, the most basic form is giving a lifetime or limited time access to the music, film, or video that was funded on Kickstater. Another example is audience involvement with their music, film, or video projects. For instance, if a fundraiser has been organized for a video/film, one simple way to involve backers is to list their names at the end of the clip as the active participants on the project. Giving away early access, limited-access, perks, accessories, and involvement in the project are one of the many ways that other Kickstarter projects could utilized to increase their success chances. For example, for music, prior works have shown reward types increases success, but the specifications of reward tiers are often neglected, so the findings of this study could be used as a baseline to increase success for other project categories [34].

## 6.3. Limitations and future research

This study should be viewed in light of its limitations like any other study. We matched Kickstarter projects with the Steam platform to control for the effect of game price and popularity. While we believe that including these control variables is essential, this selection limits our dataset as Steam only offers games for Windows, macOS, or Linux Operating systems. Moreover, the choice of reward type may also depend on contributors' demographics and their age group. Finally, our dataset focuses on the project side only and does not contain the details of individual contributors.

Based on the findings, we have suggestions for future directions. The most important implication for future studies is that the reward length, tiers, and types could influence crowdfunding success, and future studies should investigate this aspect and the project description length that has been studied frequently. In addition, we did not investigate how project description length would interact with reward description length to affect funding success, and we encourage future studies to investigate these aspects. Moreover, our study shows how different reward types can influence the success of a Kickstarter project. A possible direction for future research is to find the optimum reward bundles for each reward tier.

## 7. Conclusion

Crowdfunding success is a mainstream business problem. However, our understandings of how this affects social and business relationships is continuously evolving, and there is a need to investigate this phenomenon at different levels further. This study was a systematic attempt to investigate how video game projects meet funding goals on digital platforms. Our results indicated that extrinsic or intrinsic rewards motivate users to invest in game projects, but extrinsic motivators are a more robust determinant for funding success. In addition, this study highlighted that designing too many reward options could negatively impact crowdfunding success, but adding more description to explain what each reward is, tends to be more convincing.

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