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# How Much Is Too Much? The Impact of Update Frequency on Crowdfunding Success

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**Abstract:** This research seeks to clarify the uncertainty in crowdfunding literature regarding the relationship between the number of updates and campaign success. By integrating signal theory and the notion of information overload, this study posits a curved, inverted U-shaped relationship between the number of updates and campaign success. Empirical evidence to support this hypothesis is drawn from an analysis of 2852 projects sourced from a reward-based crowdfunding platform. The aim of this inquiry is to provide insights into the intricate dynamics that influence how the number of updates impacts the results of crowdfunding campaigns.

**Keywords:** crowdfunding; signals; number of updates; information overload; success

## 1. Introduction

Crowdfunding platforms have emerged as transformative tools for connecting creators with potential backers (e.g., Elitzur and Solodoha 2021; Solodoha and Blaywais 2023). These platforms facilitate a novel form of financing where individuals contribute funds to support creative projects, innovative products, or community-based initiatives. Crowdfunding democratizes access to capital, bypassing traditional gatekeepers such as banks or venture capitalists, and enables a wide range of ventures to flourish (Shneor and Vik 2020). The appeal of these platforms lies in their ability to aggregate small contributions from a large number of individuals, offering creators access to a global pool of potential supporters (Mollick 2014; Hornuf and Schwienbacher 2018). Beyond financial contributions, backers often provide valuable feedback and marketing support, making crowdfunding a multifaceted tool for project development and execution (Kuppuswamy and Bayus 2017).

The success of campaigns on these platforms often hinges on how effectively project founders communicate their value proposition to potential supporters. Effective communication is not only a matter of clarity but also of timing, frequency, and relevance. Updates, as a dynamic mechanism, have gained increasing attention in the literature for their role in maintaining backer engagement and fostering trust. Founders use updates to provide project progress reports, address concerns, and maintain transparency, thereby influencing backers' perceptions and willingness to contribute (Wang et al. 2020). For instance, in their examination of crowdfunding success, Tafesse (2021) found that a vivid and strategic use of updates significantly enhances campaign outcomes, particularly for projects in competitive categories such as technology and arts.

Updates, as signals of project commitment and progress, play a critical role in influencing backers' decisions. They are entirely within the founders' control, enabling consistent and targeted communication throughout the campaign lifecycle (Koch and Siering 2015). Signals such as updates offer a dual advantage: they reassure existing backers about the project's viability, while also attracting new contributors who may be swayed by evidence of ongoing progress (Deng et al. 2022). For example, in the context of equity crowdfunding, Courtney et al. (2017) demonstrated that regular updates serve as effective signals to reduce uncertainty and attract investments.

However, the relationship between updates and campaign success is not straightforward. While moderate updates can enhance backer confidence and trust, excessive updates

check for updates

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may lead to cognitive overload, diluting the intended impact (Eppler and Mengis 2008; Sun and Wang 2019). Cognitive overload, a condition where individuals are overwhelmed by excessive information, can negatively affect backer engagement, as they struggle to process and prioritize the abundance of details presented (Baron 1998; Jackson and Farzaneh 2012). For instance, Thapa (2020) observed a curvilinear relationship between the number of updates and crowdfunding outcomes, highlighting that beyond an optimal point, additional updates may hinder rather than help.

This study investigates the nonlinear effects of updates on crowdfunding success, proposing that the relationship follows an inverted U-shaped curve. Specifically, I argue that there exists an optimal frequency and content level for updates, beyond which their effectiveness diminishes due to information overload. This framework is grounded in the information-processing perspective, which emphasizes the balance between adequate communication and the cognitive limits of the audience (Baron 1998; Edmunds and Morris 2000). By focusing on update frequency and content, this study builds on the work of Chan et al. (2020), who identified a similar curvilinear relationship in crowdfunding pitch readability and its effect on campaign success.

Drawing on a dataset of 2852 projects from Israel's Headstart platform, the study provides empirical evidence for this curvilinear relationship. By focusing on update frequency and content, I aim to offer actionable insights for entrepreneurs on how to maximize their campaigns' success by strategically managing communication. This approach contributes to the ongoing discourse on effective signaling in crowdfunding and sheds light on the nuanced dynamics of backer engagement. Furthermore, the findings provide practical implications for platform designers, suggesting the need for tools that assist creators in optimizing their update strategies.

## 2. Theory and Hypothesis Development

In his pioneering work on signaling theory, A. M. Spence (1973) emphasized the role of information in decision-making. Decisions are facilitated when comprehensive, objective, and accessible information is available. However, in situations of incomplete or subjective data, observable signals are used to bridge information gaps and support decision-making (A. M. Spence 1973; M. Spence 2002). The adoption of signaling theory, initially formulated by A. M. Spence (1973), is experiencing growing prominence in entrepreneurship research. This theory posits that high-quality projects reveal their concealed quality through observable activities or attributes that are costly and challenging for low-quality projects to emulate. This surge in interest is not unexpected, as signaling theory effectively addresses a fundamental challenge encountered by new ventures: the need to mitigate substantial information disparities for critical stakeholders, including strategic partners, potential customers, and investors (Kleinert et al. 2020; Shafi et al. 2020).

Within the realm of crowdfunding, signaling plays a pivotal role due to the limited opportunities available to backers for comprehensive evaluation of physical product or service information before offering their support. This inherent limitation leads to information imbalances (Wells et al. 2011). Consequently, signals are instrumental in alleviating perceived uncertainty and encouraging backers to support projects. Ahlers et al. (2015) empirically validate the importance of these "effective signals" in assisting investors in navigating the uncertainties inherent in crowdfunding. Project founders strategically employ signals to convey project quality and establish founder credibility, as observed by Mollick (2014). These signals serve to inspire confidence and assuage any reservations potential backers may have, facilitating crowdfunding support. However, Deng et al. (2022), in their comprehensive literature review on crowdfunding success factors, have shed light on the fact that the relationship between the number of updates and crowdfunding campaign success remains ambiguous.

Table 1 encapsulates varied findings, underscoring the necessity for further research to unravel the intricacies that underlie the multifaceted relationship between the number of updates and the success of crowdfunding campaigns. On one hand, a moderate number

of updates can enhance backers' engagement and understanding without imposing an excessive cognitive burden. This could explain the positive correlation between the number of updates and campaign success observed in numerous studies. In fact, some studies have argued that information is crucial for legitimizing crowdfunding campaigns and exerting a positive influence on funding success, as noted by Fisher et al. (2017). On the other hand, an excessive influx of updates has the potential to overwhelm potential backers, resulting in cognitive strain and a diminished ability to make well-informed decisions, as highlighted by Baron (1998). Furthermore, prospective backers are actively seeking and evaluating opportunities as they search for projects to support. Information overload, a condition characterized by an excess of information surpassing an individual's cognitive processing capacity, is particularly prevalent within crowdfunding platforms. This susceptibility arises from the extensive listings of projects featured on these platforms, as articulated by Eppler and Mengis (2008). Consequently, the deluge of information can be overwhelming for potential backers (Jackson and Farzaneh 2012). Furthermore, an abundance of information has the potential to result in messages that are both unclear and tangled (Edmunds and Morris 2000).

**Table 1.** A thorough review of research studies exploring the relationship between the number of updates and the success of crowdfunding campaigns.

| Crowdfunding Success Factors | Positive Effect | Negative Effect |
|---|---|---|
| Success ratio (funds raised divided by the funding goal) | (De Larrea et al. 2019; Koch 2016; Moradi and Badrinarayanan 2021; Moutinho and Leite 2013; Tafesse 2021; Usman et al. 2020; Wang et al. 2020, 2021). | (Cappa et al. 2021; Cordova et al. 2015; Usman et al. 2020). |
| Funds raised (the total amount pledged at the end of the project) | (Evers et al. 2012; Usman et al. 2020; Wang et al. 2020, 2021; Zhao and Vinig 2020). | (Bukhari et al. 2020; Kromidha and Robson 2016; Usman et al. 2020). |
| Funding success dummy (yes/no) | (Beier and Wagner 2015; Bukhari et al. 2020; Cornelius and Gokpinar 2020; Courtney et al. 2017; Hobbs et al. 2016; Hsieh et al. 2019; Jin et al. 2020; Joenssen et al. 2014; Koch and Siering 2015; Koh et al. 2020; Lagazio and Querci 2018; Mollick 2014; Müllerleile and Joenssen 2015; Thies et al. 2016; Ullah and Zhou 2020; Wang et al. 2020, 2021; Zhao and Vinig 2020). | (Cordova et al. 2015; Wang et al. 2018; Zhao and Vinig 2020). |
| Number of backers | (Kuppuswamy and Bayus 2017; Tafesse 2021; Wang et al. 2020, 2021). | (Wessel et al. 2016). |

These findings are consistent with the conclusions emphasized by Deng et al. (2022), which have pointed out negative correlations between the frequency of updates and campaign success in some studies. It is important to note that there has been limited exploration of information overload within the crowdfunding context. In any crowdfunding platform, potential backers are confronted with a plethora of project options, rendering it vulnerable to information overload. Furthermore, as the volume of information increases, each project's share of attention diminishes (Shepherd et al. 2017; Sun and Wang 2019). Consequently, it can be formally stated as follows:

**Hypothesis 1.** *A nonlinear, inverted U-shaped association between the number of updates and the success of crowdfunding campaigns.*

**Hypothesis 2.** *A nonlinear, inverted U-shaped association between the number of words per update and the success of crowdfunding campaigns.*

## 3. Sample and Model Specification

Employing a customized software tool, I collected data from Headstart[1], which is Israel's pioneering and largest reward-based crowdfunding platform, inaugurated in 2011. Throughout its trajectory until 2023, this platform has amassed over NIS 400 million in support from a cohort exceeding 1,908,500 backers. Similar to Kickstarter, Headstart operates under an "all-or-nothing" paradigm, wherein the undertook funds are only collected if the campaign attains its predefined goal. The data I gathered included projects that were active from 2011 up to July 2023.

The dataset initially consisted of 2922 projects on the Headstart platform, spanning the years 2011 to July 2023. Of these, 70 projects (2.4%) that did not meet their funding targets were excluded from the analysis. Consequently, the final dataset includes 2852 projects, with an average of approximately 219 projects launched annually.

I use the success ratio, which refers to the funds raised divided by the funding goal (I didn't utilize the failure measure or binary success variables because only 2.4% of projects failed to reach their target amount).

In this study, the independent variable under consideration is the number of updates. Entrepreneurs are encouraged to post "Updates" about their project during and after the fundraising phase. These updates function as a way for project founders to interact with both current and potential supporters, offering them updates on the project's progress and developments. The dataset on updates contains information regarding the quantity of these updates. Furthermore, I also incorporate the number of words per update for each project. This addition is intended to provide an understanding of the level of information that project developers communicate to potential supporters in each update.

In line with established research practices and drawing upon prior studies (e.g., Ahlers et al. 2015; Butticè et al. 2017), I have included many control variables in my analysis to ensure a thorough examination of the research framework. These control variables encompass various facets of project and entrepreneur characteristics, enhancing the robustness of the analysis. The number of men entrepreneurs variable quantifies the presence of men entrepreneurs actively participating in the project, while the number of women entrepreneurs variable similarly quantifies the participation of women entrepreneurs. The prior entrepreneurial experience variable signifies whether the project founders possess prior experience in entrepreneurship, providing insights into the entrepreneurial background of the individuals involved. The video variable, represented as a binary indicator, assumes a value of 1 when the entrepreneur presents a project video and 0 when they do not. This variable provides insight into the utilization of multimedia for project promotion. The number of gift options variable quantifies the range of choices available for receiving material gifts within the project, providing an understanding of the incentives offered to potential backers. Geographic location employs dummy variables to represent the project's headquarters location, including categories such as south, north, center, Jerusalem and its surroundings (all within Israel), and abroad. Categories comprises a set of dummy variables utilized to control for fixed effects related to project types, encompassing a range of domains such as small businesses, technology, apps and internet, community, art, music, food, games, and sport. The founding year dummy variable is employed to indicate the year when the project was initially introduced on the platform. These control variables are deliberately incorporated to account for potential confounding factors, and to enhance the overall comprehension of the relationships among the variables within the research framework. To examine the relationship between the number of updates and crowdfunding campaign success, I employ an ordinary least squares (OLS) regression model. The equation is specified as follows:

$$y_i = \beta_0 + \beta_1 Number\ of\ updates + \beta_2 Number\ of\ updates^2 + \sum_{k=2}^{K} \beta_k D_{ik-1} + \varepsilon_i$$

where: $y_i$ represents the dependent variable, which is the success ratio of the campaign, calculated as the ratio of funds raised to the funding goal. An alternative dependent variable, Ln (funds raised), is used in robustness checks to account for scaling effects. $\beta_0$ is the intercept term, representing the expected value of $y_i$. $\beta_1 Number\ of\ updates$ is the coefficient capturing the linear relationship between the number of updates and the campaign success ratio. $\beta_2 Number\ of\ updates^2$ is the quadratic term, which captures the nonlinear relationship. This term allows for testing an inverted U-shaped effect, where success increases with updates to an optimal point and then declines due to diminishing returns (e.g., information overload). $\sum_{k=2}^{K} \beta_k D_{ik-1}$ represents the summation of control variables $D_{ik-1}$, which account for project-specific characteristics such as campaign type, geographic location, and the presence of a video. These controls help isolate the effect of updates on campaign success. $\varepsilon_i$ is the error term, representing the variation in $y_i$ not explained by the included predictors. The subscript $i$ indicates that the analysis is conducted at the project level.

## 4. Data Analysis and Findings

### *4.1. Descriptive Statistics*

Table 2 showcases the correlation matrix for the key variables under investigation. Table 2 specifically highlights a statistically significant positive correlation between the number of updates and both the share of the supported amount percentage and Ln (funds raised) (B = 0.205; B = 0.228, $p < 0.001$, respectively). The data cover a total of 2006 men entrepreneurs and 2326 women entrepreneurs. Furthermore, about 23% of the projects are led by entrepreneurs with prior entrepreneurial experience, indicating individuals who have participated in crowdfunding endeavors through a crowdfunding platform at least once.

**Table 2.** A matrix displaying the correlations between the primary variables of the study.

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Supported amount percentage | 1.050 | 0.493 | 1 | | | | | | | | |
| 2. Ln (funds raised) | 10.628 | 0.887 | 0.322 ** | 1 | | | | | | | |
| 3. Number of updates | 6.683 | 5.17 | 0.205 ** | 0.228 ** | 1 | | | | | | |
| 4. Number of words per update | 26.189 | 22.981 | 0.137 ** | 0.094 ** | −0.294 ** | 1 | | | | | |
| 5. Men entrepreneurs | 0.703 | 0.847 | −0.004 | 0.054 * | −0.031 | 0.029 | 1 | | | | |
| 6. Women entrepreneurs | 0.815 | 0.570 | −0.011 | −0.100 ** | −0.014 | −0.001 | −0.357 ** | 1 | | | |
| 7. Prior entrepreneurship experience | 0.213 | 0.410 | −0.122 ** | −0.241 ** | −0.042 * | −0.095 ** | 0.307 ** | 0.012 | 1 | | |
| 8. Video | 0.740 | 0.438 | 0.069 ** | 0.101 ** | 0.128 | −0.009 | −0.046 * | 0.018 | −0.056 * | 1 | |
| 9. Number of gift options | 16.333 | 13.014 | 0.014 | 0.278 ** | 0.200 ** | 0.082 ** | 0.009 | 0.029 | −0.071 ** | 0.162 ** | 1 |

** $p < 0.001$, * $p < 0.05$.

Roughly 74% of the entries include a video presenting the project details.

### *4.2. Regression Estimation Results*

Table 3 presents the findings derived from the estimations conducted in the regression analysis. In Model 1, it becomes evident that the quantity of updates holds a positive and statistically significant correlation with the share of the supported amount percentage. (B = 0.017, $p = 0.000$) and that the square of the update frequency indicates a significant positive correlation with percentage of the supported amount. (B = $-4.75 \times 10^{-4}$, $p = 0.005$), in support of Hypothesis 1. In Model 2, it is evident that the number of words is positively and significantly linked to the share of the supported amount percentage (B = 0.002, $p = 0.001$) and shows a positive and significant association between the squared number of updates and the share of the supported amount percentage (B = $-1.33 \times 10^{-5}$, $p = 0.025$), in support of Hypothesis 2. Model 3 includes both the number of updates and the number of

words. The findings demonstrate similar results observed in Model 1 and Model 2. Figure 1 graphically shows the number of updates and supported amount percentage inverted U-shaped relationship. Specifically, Figure 1 indicates that the number of updates is 19.41, where the supported amount percentage is at its highest (1.03). For clarification, the near-zero success rate observed for campaigns exceeding 60 updates should not be interpreted as definitive failure. Rather, it suggests that campaigns with an exceptionally high number of updates may encounter difficulties in sustaining backer interest and support, possibly due to information overload and reduced engagement. Figure 2 graphically shows the average words per update and the percentage of the amount invested in the inverted U-shaped relationship. Specifically, Figure 2 indicates that the number of words per update is 86.21, where the supported amount percentage is at its highest (0.95).

**Table 3.** The effect of the number of updates and the number of words per update on the supported amount percentage.

| **Dependent Variable: Supported Amount Percentage** | **Model 1** | | | **Model 2** | | | **Model 2** | | |
|---|---|---|---|---|---|---|---|---|---|
| | **B** | **SE** | ***p*** | **B** | **SE** | ***p*** | **B** | **SE** | ***p*** |
| Number of updates | 0.017 | 0.004 | 0.000 | 0.007 | 0.001 | 0.000 | 0.017 | 0.004 | 0.000 |
| Number of updates$^2$ | $-4.75 \times 10^{-4}$ | $-1.68 \times 10^{-4}$ | 0.005 | | | | $-4.38 \times 10^{-4}$ | $1.69 \times 10^{-4}$ | 0.010 |
| Number of words per update | 0.001 | 0.001 | 0.008 | 0.002 | 0.001 | 0.001 | 0.002 | $7.93 \times 10^{-4}$ | 0.003 |
| Number of words per update$^2$ | | | | $-1.33 \times 10^{-5}$ | $-5.95 \times 10^{-6}$ | 0.025 | $-1.16 \times 10^{-5}$ | $5.98 \times 10^{-6}$ | 0.050 |
| Mmen entrepreneurs | 0.013 | 0.010 | 0.215 | 0.012 | 0.010 | 0.254 | 0.012 | 0.010 | 0.251 |
| Women entrepreneurs | −0.024 | 0.015 | 0.113 | −0.024 | 0.015 | 0.107 | −0.025 | 0.015 | 0.103 |
| Prior entrepreneurship experience | 0.004 | 0.022 | 0.841 | −0.004 | 0.022 | 0.848 | −0.002 | 0.022 | 0.899 |
| Video | −0.001 | 0.020 | 0.973 | 0.002 | 0.020 | 0.914 | 0.002 | 0.020 | 0.990 |
| Number of gift options | 0.001 | 0.001 | 0.895 | 0.001 | 0.001 | 0.765 | 0.001 | 0.001 | 0.982 |
| Geographic location: Abroad | | | | | | | | | |
| North | 0.039 | 0.053 | 0.455 | 0.047 | 0.053 | 0.370 | 0.040 | 0.053 | 0.450 |
| South | 0.021 | 0.058 | 0.708 | 0.032 | 0.058 | 0.580 | 0.025 | 0.058 | 0.64 |
| Center dummy | 0.047 | 0.050 | 0.344 | 0.053 | 0.050 | 0.290 | 0.046 | 0.050 | 0.352 |
| Jerusalem and surrounding | 0.027 | 0.052 | 0.591 | 0.034 | 0.052 | 0.506 | 0.027 | 0.052 | 0.591 |
| Categories (fixed effect) | | | | | | | | | |
| Founding year (fixed effect) | | | | | | | | | |
| Constant | 0.894 | 0.332 | 0.007 | 0.279 | 0.333 | 0.008 | 0.863 | 0.332 | 0.010 |
| n | 2582 | | | 2582 | | | 2582 | | |
| $R^2$ | 0.129 | | | 0.128 | | | 0.129 | | |

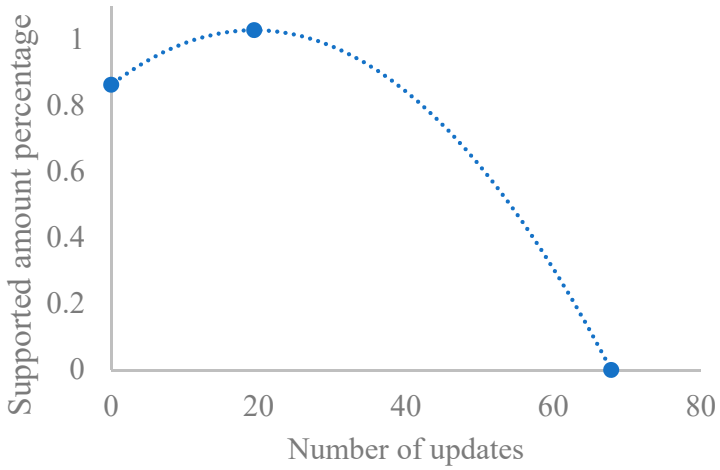


**Figure 1.** A curvilinear, inverted U-shaped correlation between updates and supported amount percentage.

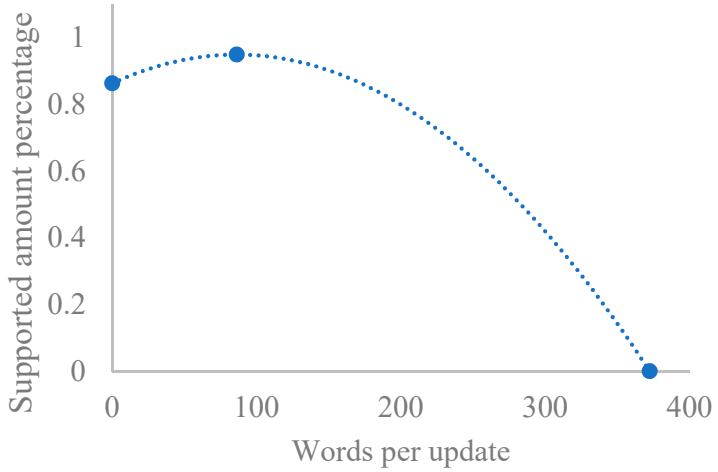


**Figure 2.** A curvilinear, inverted U-shaped correlation between words per update and supported amount percentage.

### *4.3. Robustness Check*

First, I replaced the dependent variable percentage of the amount supported with the Ln (funds raised). Given the necessity of upholding the normality assumption for linear regression, I executed a logarithmic transformation on the funds raised for each campaign while I controlled the *Target amount* (is the sum sought by the project's creator represents the financial objective or funding target established to effectively execute the project.). Table 3 displays the outcomes of the conducted regression analysis. Table 4, Model 3, shows a positive and statistically significant relationship between the number of updates and the share of the supported amount percentage (B = 0.043, $p$ = 0.000). Additionally, the analysis indicates that the squared number of updates is positively and significantly linked to the share of the supported amount percentage (B = −0.001, $p$ = 0.000). In Model 5, it is evident that the number of words is positively and significantly correlated with the share of the supported amount percentage (B = 0.007, $p$ = 0.001). Furthermore, the analysis demonstrates that the squared number of updates is positively and significantly associated with the share of the supported amount percentage (B = $-3.59 \times 10^{-4}$, $p$ = 0.000). Model 6 includes both the number of updates and the number of words. The findings demonstrate similar results observed in Model 4 and Model 5. Figure 3 graphically shows the number of updates and supported amount percentage inverted U-shaped relationship. Specifically, Figure 3 indicates that the number of updates is 21.00, where the supported amount percentage is (10.11). Figure 4 graphically shows the average words per update and the percentage of the amount invested in the inverted U-shaped relationship. Specifically, Figure 4 indicates that the number of words per update is 109.03, where the supported amount percentage is at its highest (10.05).

To ensure the robustness of the findings, a nonlinear regression model was employed to investigate the hypothesized inverted U-shaped relationship between the number of updates and crowdfunding campaign success, measured as the percentage of funding raised. Nonlinear regression is particularly suited for capturing complex dynamics, allowing for the examination of diminishing returns or overload effects (Greene 2000). Based on previous studies, this model enables the identification of a peak point where updates optimize campaign performance before their effectiveness declines (Wooldridge 2010; Yang et al. 2019). The results remain consistent: the linear term for the number of updates shows a statistically significant positive effect (B = 0.017, $p$ = 0.000), while the squared term demonstrates a statistically significant negative effect (B = −0.001, $p$ = 0.002). These results confirm the inverted U-shaped relationship, where updates initially enhance campaign outcomes but lose their effectiveness beyond an optimal point due to information overload (Eppler and Mengis 2008). The robustness checks also support the explanatory power of the model, which accounts for 14.1% of the variance in the success ratio ($R^2$ = 0.141) and

achieves an adjusted $R^2$ of 0.131. These findings are consistent with prior studies employing nonlinear regressions to explore complex relationships in digital platforms and fundraising contexts (Mollick 2014; Koch and Siering 2015). The results underscore the reliability and validity of the analysis, highlighting the importance of strategically managing updates to maximize the effectiveness of crowdfunding campaigns.

**Table 4.** The effect of the number of updates and the number of words per update on the Ln (funds raised).

| **Dependent Variable: Ln (Funds Raised)** | | **Model 4** | | | **Model 5** | | | **Model 6** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **B** | **SE** | ***p*** | **B** | **SE** | ***p*** | **B** | **SE** | ***p*** |
| Number of updates | | 0.043 | 0.005 | 0.000 | 0.021 | 0.002 | 0.000 | 0.042 | 0.004 | 0.000 |
| Number of updates$^2$ | | −0.001 | 0.001 | 0.000 | | | | −0.001 | 0.001 | 0.000 |
| Number of words per update | | 0.003 | 0.001 | 0.000 | 0.007 | 0.001 | 0.000 | 0.007 | 0.001 | 0.000 |
| Number of words per update$^2$ | | | | | $-3.59 \times 10^{-4}$ | $-3.59 \times 10^{-4}$ | 0.000 | $-3.21 \times 10^{-5}$ | $7.39 \times 10^{-6}$ | 0.000 |
| Target amount | | −0.001 | 0.001 | 0.000 | −0.001 | 0.001 | 0.000 | −0.001 | 0.001 | 0.000 |
| Men entrepreneurs | | 0.012 | 0.013 | 0.344 | 0.009 | 0.013 | 0.470 | 0.009 | 0.013 | 0.455 |
| Women entrepreneurs | | −0.025 | 0.019 | 0.192 | −0.026 | 0.019 | 0.171 | −0.026 | 0.019 | 0.160 |
| Prior entrepreneurship experience | | 0.092 | 0.027 | 0.000 | −0.291 | 0.027 | 0.000 | −0.288 | 0.027 | 0.000 |
| Video | | 0.080 | 0.025 | 0.002 | 0.087 | 0.025 | 0.001 | 0.083 | 0.025 | 0.001 |
| Number of gift options | | 0.001 | 0.001 | 0.533 | 0.001 | 0.001 | 0.414 | 0.001 | 0.001 | 0.695 |
| Geographic location | Abroad | | | | | | | | | |
| | North | −0.021 | 0.065 | 0.740 | −0.004 | 0.065 | 0.948 | −0.02 | 0.065 | 0.754 |
| | South | 0.033 | 0.071 | 0.640 | 0.058 | 0.071 | 0.416 | 0.043 | 0.071 | 0.547 |
| | Center | 0.007 | 0.062 | 0.911 | 0.004 | 0.062 | 0.938 | −0.009 | 0.062 | 0.880 |
| | Jerusalem and surrounding | −0.079 | 0.064 | 0.218 | −0.064 | 0.064 | 0.351 | −0.079 | 0.064 | 0.217 |
| Categories (fixed effect) | | | included | | | included | | | included | |
| Founding year (fixed effect) | | | included | | | included | | | included | |
| Constant | | 9.754 | 0.412 | 0.000 | 9.701 | 0.412 | 0.000 | 9.668 | 0.411 | 0.000 |
| n | | | 2852 | | | 2852 | | | 2852 | |
| Adj $R^2$ | | | 0.587 | | | 0.570 | | | 0.590 | |

Note: The Headstart platform allows a maximum campaign duration of 90 days, with most projects adhering to this limit. Consequently, project duration was not included in the regression model due to limited variability.

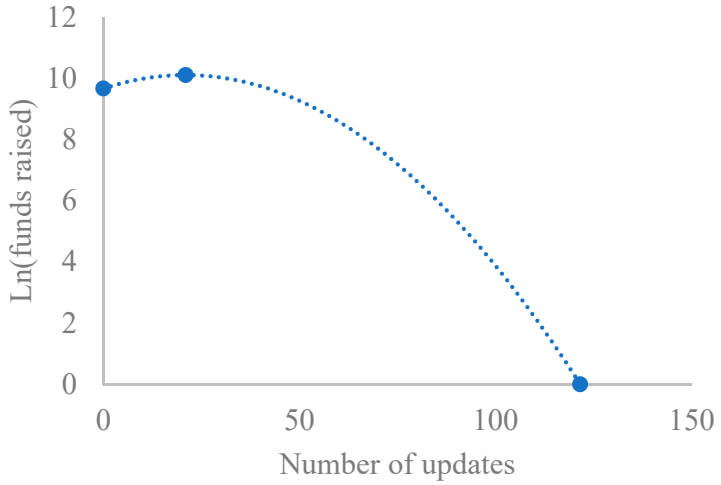


**Figure 3.** A curvilinear, inverted U-shaped correlation between updates and Ln (funds raised).

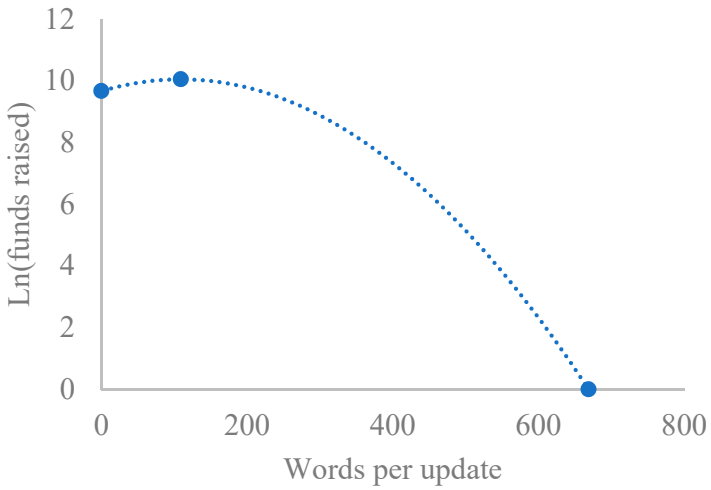


**Figure 4.** A curvilinear, inverted U-shaped correlation between words per update and Ln (funds raised).

To confirm the interpretation of the findings, I followed Lind and Mehlum's (2010) approach and employed a U test. This test enables the statistical confirmation of the presence of hump-shaped relationships, as exemplified in Tables 1 and 2. The U test was specifically utilized to evaluate the two potential inverted U-shaped relationships proposed in this study, thereby offering support for the findings presented in Tables 3 and 4. In particular, according to the results presented in Model 7A in Table 5, the turning point for the "number of updates" variable is determined to be 19.520. The U test was employed in this study to assess the two potential inverted U-shaped relationships proposed, thereby reinforcing the results showcased in Tables 3 and 4. Similarly, a turning point for the "number of updates" is observed in the case of the dependent variable "Ln (funds raised)," with a value of 22.235, as shown in Model 8A in Table 5. Likewise, based on the outcomes highlighted in Model 7B in Table 5, the turning point for the "average words per update" variable is calculated to be 103.201. This indicates that the percentage of the supported amount can be optimized at this particular point. This suggests that the percentage of the supported amount can be maximized at this specific juncture. A comparable turning point for the "average words per update" is identified when the dependent variable is "Ln (funds raised)" with a value of 114.600, as indicated in Model 8B in Table 5.

**Table 5.** Test results for model's non-linearity.

| | **Supported Amount Percentage** | | | | **Ln (Funds Raised)** | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 7A | | Model 7B | | Model 8A | | Model 8B | |
| | Number of updates | | Average words to update | | Number of updates | | Average words to update | |
| Bounds | Lower bound | Upper bound | Lower bound | Upper bound | Lower bound | Upper bound | Lower bound | Upper bound |
| Interval | 0 | 44 | 0 | 244 | 0 | 44 | 0 | 244 |
| Slope | 0.017 | −0.021 | 0.002 | −0.003 | 0.042 | −0.041 | 0.007 | −0.008 |
| t-value | 4.116 | −2.982 | 2.868 | −2.273 | 7.762 | −3.193 | 6.455 | −2.519 |
| $p > \|t\|$ | 0.000 | 0.001 | 0.002 | 0.0115 | 0.000 | 0.000 | 0.000 | 0.005 |
| Extremum point: | 19.520 | | 103.201 | | 22.235 | | 114.600 | |
| Overall test of: | Inverted U-shape | | Inverted U-shape | | Inverted U-shape | | Inverted U-shape | |
| T value | 2.98 | | 2.27 | | 3.19 | | 2.52 | |
| $p > T$ | 0.001 | | 0.011 | | 0.000 | | 0.006 | |

## 5. Discussion

The findings of this study confirm the inverted U-shaped relationship between update frequency and crowdfunding campaign success, as supported by prior research on signaling theory and information overload (Thapa 2020; Sun and Wang 2019). These results contribute significantly to the understanding of backer behavior under conditions of

cognitive limitations and offer compelling insights into how updates can serve as effective signals in uncertain contexts (Ahlers et al. 2015; Deng et al. 2022).

### 5.1. Theoretical

From the perspective of signaling theory, this study advances the understanding of the delicate balance between providing accessible information and avoiding cognitive overload (A. M. Spence 1973; M. Spence 2002). The inverted U-shaped relationship highlights the dual role of updates: they act as signals of project commitment and progress while potentially leading to diminishing returns when excessive (Koch and Siering 2015; Jackson and Farzaneh 2012). This finding refines the application of signaling theory in entrepreneurial and crowdfunding contexts, emphasizing the nonlinear nature of information processing (Deng et al. 2022; Tafesse 2021).

The study also enriches the literature on information overload, particularly within entrepreneurial ecosystems. While previous research has documented the adverse effects of excessive communication, this study positions update frequency within broader theoretical frameworks, such as cognitive load theory (Eppler and Mengis 2008; Baron 1998). It demonstrates how backers process incremental information and the thresholds at which it becomes counterproductive (Chan et al. 2020). By linking the findings to the information-processing perspective, this research offers a nuanced view of how entrepreneurs can strategically use updates to maximize their signaling value without overwhelming potential backers (Edmunds and Morris 2000).

### 5.2. Practical Implications

The implications for entrepreneurs are actionable and clear. Campaign creators should aim to optimize the frequency and quality of updates to engage backers effectively without exceeding their cognitive limits (Wang et al. 2020). For instance, maintaining a moderate frequency of updates—rich in content but concise—can foster trust, sustain engagement, and encourage contributions (Courtney et al. 2017; Mollick 2014). Entrepreneurs can also experiment with using analytics to assess backer responses to update frequency and content (Tafesse 2021; Wang et al. 2021).

For crowdfunding platforms, the findings suggest a need to design tools that support creators in managing their communication strategies. These tools could include features like predictive analytics, which recommend optimal update frequencies based on campaign characteristics and backer engagement metrics (Hornuf and Schwienbacher 2018; Wells et al. 2011). Platforms might also consider introducing guidelines or templates for updates to help project founders align their communication with backer preferences (Deng et al. 2022).

Backers themselves can benefit from the improved communication practices suggested by this study. Streamlined and strategically timed updates can enhance the backer experience, reducing decision fatigue and increasing satisfaction with the funding process (Shneor and Vik 2020).

### 5.3. Limitations and Future Research

Despite these contributions, the study has limitations that warrant further exploration. First, the dataset is drawn from a single reward-based crowdfunding platform, Headstart, and is focused on the Israeli context. Cultural and regional differences may influence the applicability of these findings to other crowdfunding ecosystems, such as equity-based platforms or international audiences (Usman et al. 2020; Zhao and Vinig 2020). Future research should investigate whether similar patterns exist across various platforms and campaign types (Kromidha and Robson 2016; Cappa et al. 2021).

Additionally, the study does not extensively explore the impact of update content, tone, or timing. Understanding how these factors interact with frequency to shape backer perceptions would provide deeper insights into effective communication strategies (Lagazio and Querci 2018). Longitudinal studies could also examine how backers' engagement evolves

over the lifecycle of a campaign, shedding light on the temporal aspects of communication (Kuppuswamy and Bayus 2017).

## 6. Conclusions

This study provides a robust theoretical and empirical foundation for understanding the role of updates in crowdfunding success. By demonstrating the nonlinear relationship between update frequency and campaign outcomes, it highlights the importance of strategic communication management. The findings offer actionable insights for entrepreneurs, platform designers, and backers, fostering a more effective and satisfying crowdfunding ecosystem.

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## Note

[1] www.headstart.co.il (accessed on 27 November 2024).

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