Text Analysis of Crowdfunding:
A Literature Review

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Abstract

Crowdfunding has emerged as a novel source of fundraising. The campaign description, or pitch, is a principal factor that may influence the behavior of potential donors. This article provides a survey of crowdfunding literature, focusing on linguistic and text analysis of campaign pitches. The review identifies common themes resulting from linguistic analysis. The common themes inform future crowdfunding authors on how to craft a pitch to maximize fundraising potential. The review aids researchers by providing a more in depth look at how language affects the persuasive efforts in crowdfunding.

Keywords

Crowdfunding, Text Analysis, Linguistic Cues

Introduction

Crowdfunding is a novel way to raise funds in a nontraditional way. The internet allows campaign owners to reach a very large audience without the physical constraints of geographical boundaries. Crowdfunding descriptions, or pitches, are the conduit for explaining the purpose or situation and to informing potential donors (Kim, Buffart, & Croidieu, 2016). Developing insight for a better understanding of how crowdfunding pitches can be crafted to enable maximum value is the driving purpose behind this review. The study of literature provides insights into how crowdfunding pitches can be crafted to fulfill their role in the campaign effectively. The review specifically looks at the literature analyzing the text of campaign pitches for different factors that attribute to the campaigns overall success.

Crowdfunding

Financial obligations are a common obstacle for new ventures. Many entrepreneurs must find a novel and attractive way to share their ideas and raise funds to see their ideas come to fruition. Crowdfunding is a novel solution to the financial obstacle. There are two perspectives for how to raise funds: a) target a small number of wealthy investors to obtain a small number of donations with large monetary values; and b) target a large number of individuals to obtain a large number of donations with small monetary values. The result for either perspective can be equal where the financial goal for the venture is obtained (Belleflamme, Lambert, & Schwienbacher, 2010). The second perspective forms the basis for crowdfunding – reaching out to the power of the crowd.

A common definition of crowdfunding comes from (Belleflamme et al., 2010), "an open call, essentially through the internet, for the provision of financial resources either in the form of donation or in exchange in some form of reward or voting rights to support initiatives for a specific purpose." The open call through the internet describes the use of online crowdfunding platforms. The online platforms are intermediaries that bring together potential donors and campaign owners (Koch & Siering, 2015). These platforms take on one of two identities: all or nothing (AON) or keep it all (KIA). Campaigns hosted on AON platforms accept pledges, which are only kept by the campaign owner if the financial goal is met. If the financial goal is not reached, all pledges are returned. Campaigns hosted on KIA platforms, accept pledges which are kept by the campaign owner, even if the financial goal is not reached (Cumming, Leboeuf, & Schwienbacher, 2014).

The exchange for supporting initiatives, as identified in the definition above, describes the model of contribution. There are four contribution models for crowdfunding: donation, reward, lending, and equity. The donation model accepts pledges without the promise of a reward. The reward model provides a tangible gift in response to receiving a pledge. The type or size of the gift offered is based on donation amount levels specified by the campaign owner (Cumming et al., 2014; Mollick, 2014). The lending model promises the possibility of a leadership role in the project. The level of leadership is based on the donation amount, similar to the reward model. The equity-based model ensures that donors receive a portion of profits or royalties once the project is complete (Belleflamme & Lambert, 2014). The models of contribution are not distinct or unique to a platform identity but may overlap depending on the overall context of the campaign. There is endless variety in the specific purpose for crowdfunding campaigns; from music to inventions, from surgery to adoption, etc. (Mollick, 2014).

Crowdfunding is a novel technique for fundraising, but much unknown about the process. Scholarly knowledge is limited to identifying success factors for crowdfunding efforts (Short, Ketchen, McKenny, Allison, & Ireland, 2017). This review aims at collecting information about online crowdfunding, with a specific focus on text or linguistic analysis of campaign pitches. This article informs the readers about how language and textual content affects the overall performance of crowdfunding campaigns, discusses knowledge gaps, and provides ideas for future research.

Methodology

This study uses a systematic literature review as its methodology to provide a transparent and objective account of the existing empirical literature. The following sections discuss the search process, selection of articles, and findings from the review of the literature.

Data Sources and Search Process

Data sources for this investigation were identified through a general search of the Web of Science database. Articles shown in the results from the Web of Science search identified prominent electronic libraries such as ACM Digital Library, IEEE Xplore, Science Direct, Sage Knowledge, and other sources. The search strategy includes searching for keywords, forward citation search, and backward citation search. The search was focused on terms identified in the research questions and common synonyms corresponding to text analytics.

The search procedure has been carried by using the threads "crowdfunding," "crowdfund," and "crowdfunders." The threads were modified to use different versions such as "crowd-funding" or "crowd funding." Initial results from Web of Science produced 835 peer-reviewed articles published between 2009 and 2019. The search consisted of two additional examinations, in which abstracts were read to identify articles that provided insights into crowdfunding based on textual or linguistic analysis. The search procedure identified 15 peer-reviewed articles published between 2009 and 2019 that specifically looked crowdfunding and it's narrative.

Findings

The review revealed that crowdfunding is a topic of interest across many disciplines. There are several journals from a variety of disciplines that have published articles with crowdfunding as a topic. Web of Science analysis shows that the majority of crowdfunding articles published fall into three domains: management, economics, and information systems. This division appears to be the same for the 15 articles relating to the linguistic and textual analysis of crowdfunding (e.g., to name a few publishers: Journal of Business Venturing, IEEE, Strategic Organization, and Decision Support Systems).

Theoretical Foundations

Campaign pitches are a critical element to a crowdfunding effort. It is the place that authors can explain, demonstrate need, and otherwise persuade potential donors. The question driving this review is how language influences the persuasive nature of crowdfunding pitches. Table 1 provides a brief description of the foundational theories and results of the research into linguistic and text analysis of crowdfunding campaigns.

Author(s)	Theory	Findings
1. Majumdar & Bose, 2018	Rhetorical Analysis	Crowdfunding descriptions raise more funds when they include all three rhetorical appeals. The three rhetorical appeals are logos, pathos, and ethos.
2. Tirdatov, 2014	Rhetorical Analysis	The most funded crowdfunding projects contained all three rhetorical appeals (logos, pathos, and ethos). Of the descriptions analyze, most placed an emphasis on logos appeals over pathos and ethos appeals.
3. Allison, Davis, Webb & Short, 2017	Elaboration Likelihood Model	Crowdfunding projects are more successful when descriptions include specific details about the entrepreneur and product as well as describing why the entrepreneur is passionate about the venture (e.g., a personal dream)
4. Mitra & Gilbert, 2014	Interpretive Framework of Persuasion	Language has a strong effect on funding success; were able to identify phrases to predict crowdfunding success.
5. Zhou, Lu, Fan, & Wang, 2018	Unimodel of Persuasion	Project descriptions are antecedents to crowdfunding success, with special respect to length, readability, and tone.
6. Davis, Hmieleski, Webb & Coombs, 2017	Affective Events Theory	Appealing to positive affect with an exhibit of creativity and passing will strengthen the ability of an entrepreneur to receive funding
7. Frydrych, Bock, & Kinder, 2016	Entrepreneurial Narrative Perspective	Entrepreneurial campaign owners are more successful when they leverage storytelling techniques that facilitate positive affect and legitimacy.
8. Manning & Bejarano, 2016	Entrepreneurial Narrative Perspective	The describing of the purpose or situation as the root reason for the venture is critical to fundraising efforts. Owners can leverage temporal constructs to provide factual information and connect to their potential donors.
9. Kim, Buffart, & Croidieu, 2016	Entrepreneurial Narrative Perspective Signaling Theory	Crowdfunding narratives enable entrepreneurs to share their business ideas with those who are positioned to help financially. The fundraising potential of narratives increases with the inclusion of factual information.
10. Pietraszkiewicsz, Soppe, & Formanowicsz, 2017	Signaling Theory	Prosocial language significantly contributes to crowdfunding success.
11. Anglin, Short, Drover, Stevenson, McKenny, & Allison, 2017	Signaling Theory	Language indicative of positive psychological capital is a costless signal tied to fundraising results through crowdfunding.
12. Parhankangas & Renko, 2017	Language Expectancy Theory	Linguistic style is of utmost importance to crowdfunding success. Campaign owners need to be descriptive and precise, but also find ways to build a connection with potential donors.
13. Wang, Zhu, Wang, & Wu, 2017	Sentiment Analysis	Positive sentiment is most attractive to potential funders.
14. Yuan, Lau & Xu, 2016	Topical Modeling	Develop the Domain-Constraint Latent Dirichlet Allocation (DC-LDA) topic model to extract topical features from texts. DC-LDA was used to identify topical features that influence fundraising success.
15. Paulus & Roberts, 2018	Self-Identity Theory	Campaign owners have developed a 'vernacular authority' that demonstrates the need for assistance.

		This narrative tactic is used to emphasize the good character of the individual through a third party request.

Table 1. Summary of Crowdfunding Literature

Research Agenda

The literature review provides compelling evidence that crowdfunding pitches are a critical element to the persuasive efforts of entrepreneurial campaigns (Allison et al., 2017; Majumdar & Bose, 2018; Paulus & Roberts, 2018). This review identifies three themes identified from the papers in Table 1. First, pitches should include factual evidence. The pitch should be crafted using language describing what the purpose of the venture is. Potential donors are looking for cues of value and worth, and want to know how their money will be used. Secondly, campaign owners need to be personable and vulnerable. Beyond the purpose of the venture, the pitch should include details about the people involved, as this allows potential donors to create a connection or bond with the campaign owner. Lastly, the tone of the pitch should be positive. Campaign owners can use positive language to demonstrate their passion for the venture. Future campaign owners should also consider using feminine language (Majumdar & Bose, 2018), appeals to both logic and emotion (Davis et al., 2017; Frydrych et al., 2016; Tirdatov, 2014), and have the pitch reinforce non-textual campaign factors (e.g. the funding goal, pictures, videos, or other information displayed on the campaign etc.) (Majumdar & Bose, 2018; Manning & Bejarano, 2016; Zhou et al. 2018).

Theoretical foundations for crowdfunding appear to center on signaling theory and persuasion theories. The underlying purpose of persuading potential donors explains the somewhat limited theoretical view. Pitches should be crafted to provide signals of quality and evidence in a way that is convincing others to take action and donate. It is expected that as crowdfunding matures, the theoretical foundations for reviewing literature will also expand. The limited theoretical view may also be due to the focus on entrepreneurial ventures. All but one of the articles analyzed uses a corpus of data from Kickstarter, a for-profit, reward-based, all-or-nothing platform. There is little to no research into non-profit campaigns, keep-it-all platforms, or other contribution models. This limitation includes research extending beyond the focus on linguistic and text analysis (Short et al., 2017).

The techniques for analyzing linguistics and text vary among researchers. This techniques identified throughout this review include coding pitches, focus groups/experiences, and use of software. Two software tools mentioned in the reviewed literature are DICTION and LIWC. DICTION is software developed for analyzing political speeches (Parhankangas et al., 2017). LIWC is software developed for investigating the relationships between word use and psychological variables (Tausczik, 2010).

Conclusion

This article reviews crowdfunding literature that focuses on text or linguistic analysis of campaign pitches. It further demonstrates the importance of language in determining the success of crowdfunding campaigns. The results of this review provide insight into how campaign pitches can be crafted to maximize fundraising potential. The review identifies three common themes that influence the performance of the fundraising effort. The review also identifies potential gaps in the literature, in the limited focus on reward-based entrepreneurial crowdfunding. The review advances the understanding of linguistic and text analysis for crowdfunding. It underscores the importance of considering how language is used to craft pitches for effective persuasion.

REFERENCES

Allison, T. H., Davis, B. C., Webb, J. W., & Short, J. C. (2017). Persuasion in crowdfunding: An elaboration likelihood model of crowdfunding performance. *Journal of Business Venturing, 32*(6), 707-725.

Anglin, A. H., Short, J. C., Drover, W., Stevenson, R. M., McKenny, A. F., & Allison, T. H. (2018). The power of positivity? The influence of positive psychological capital language on crowdfunding performance. *Journal of Business Venturing, 33*(4), 470-492.

Belleflamme, P., & Lambert, T. (2014). Crowdfunding: Some empirical findings and microeconomic underpinnings.

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2010). *Crowdfunding: An industrial organization perspective.* Paper presented at the Prepared for the workshop Digital Business Models: Understanding Strategies', held in Paris on June.

Cumming, D., Leboeuf, G., & Schwienbacher, A. (2015). Crowdfunding Models: Keep-it-All vs. All-or-Nothing. *Financial Management.*

Davis, B. C., Hmieleski, K. M., Webb, J. W., & Coombs, J. E. (2017). Funders' positive affective reactions to entrepreneurs' crowdfunding pitches: The influence of perceived product creativity and entrepreneurial passion. *Journal of Business Venturing, 32*(1), 90-106.

Frydrych, D., Bock, A. J., & Kinder, T. (2016). Creating project legitimacy–the role of entrepreneurial narrative in reward-based crowdfunding *International perspectives on crowdfunding: Positive, normative and critical theory* (pp. 99-128): Emerald Group Publishing Limited.

Kim, P. H., Buffart, M., & Croidieu, G. (2016). TMI: Signaling Credible Claims in Crowdfunding Campaign Narratives. *Group & Organization Management, 41*(6), 717-750.

Koch, J.-A., & Siering, M. (2015). *Crowdfunding Success Factors: The Characteristics of Successfully Funded Projects on Crowdfunding Platforms.* Paper presented at ECIS 2015.

Majumdar, A., & Bose, I. (2018). My words for your pizza: An analysis of persuasive narratives in online crowdfunding. *Information & Management.*

Manning, S., & Bejarano, T. A. (2016). Convincing the crowd: Entrepreneurial storytelling in crowdfunding campaigns. *Strategic Organization, 15*(2), 194-219.

Mitra, T., & Gilbert, E. (2014). *The language that gets people to give: phrases that predict success on kickstarter.* Paper presented at the Proceedings of the 17th ACM conference on Computer supported cooperative work; social computing, Baltimore, Maryland, USA.

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

Parhankangas, A., & Renko, M. (2017). Linguistic style and crowdfunding success among social and commercial entrepreneurs. *Journal of Business Venturing, 32*(2), 215-236.

Paulus, T. M., & Roberts, K. R. (2018). Crowdfunding a "Real-life Superhero": The construction of worthy bodies in medical campaign narratives. *Discourse, Context & Media, 21*, 64-72.

Pietraszkiewicz, A., Soppe, B., & Formanowicz, M. (2017). Go Pro Bono. *Social Psychology.*

Short, J. C., Ketchen, D. J., McKenny, A. F., Allison, T. H., & Ireland, R. D. (2017, 03//). Research on Crowdfunding: Reviewing the (Very Recent) Past and Celebrating the Present, Editorial. *Entrepreneurship: Theory & Practice,* pp. 149-160.

Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of language and social psychology, 29*(1), 24-54.

Tirdatov, I. (2014). *Web-Based Crowd Funding: Rhetoric of Success* (Vol. 61).

Wang, W., Zhu, K., Wang, H., & Wu, Y. C. J. (2017). The Impact of Sentiment Orientations on Successful Crowdfunding Campaigns through Text Analytics. *IET Software, 11*(5), 229-238.

Yuan, H., Lau, R. Y. K., & Xu, W. (2016). The determinants of crowdfunding success: A semantic text analytics approach. *Decision Support Systems, 91*, 67-76.

Zhou, M., Lu, B., Fan, W., & Wang, G. A. (2018). Project description and crowdfunding success: an exploratory study. *Information Systems Frontiers, 20*(2), 259-274.