

Is Crowdfunding for All? A Study of Medical Crowdfunding to Examine the New Facets of Digital Divide

Research-in-Progress

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Abstract

The outcome of a crowdfunding campaign has been a topic of special interest for Information Systems (IS) researchers. Despite the success of crowdfunding platforms, there have been questions raised about their egalitarian nature in sharing the benefits across participants. Crowdfunding campaigns especially in philanthropic domains like medical crowdfunding are becoming popular in developing countries. Given the varying rates of success of these campaigns, it is imperative to understand if crowdfunding platforms are level playing fields for all kind of fundraisers. This ongoing research makes an effort to address this concern by examining how the disparities in digital capabilities influence the participation and therefore the outcome of crowdfunding campaigns. We believe that the differences in the digital media capabilities of campaigners can influence the outcome of the campaign. We examine this phenomenon with the help of Language Expectancy Theory and Elaboration Likelihood Model using data extracted from a large medical crowdfunding platform.

Keywords: Crowdfunding, Medical Crowdfunding, Digital Divide, India, Textual Analysis

Introduction

The significance and impact of digital platforms in the socioeconomic development of developing countries is a relatively unexplored area (Davison 2018). As the discussion around the implications of intermediaries and platforms in relation to socio-economic development is gaining prominence (Nielsen 2017), the need for understanding the “platform technologies and human capacity needs for implementation and use; and inclusion/exclusion and the openness of ecosystems” (Nielsen 2017, p8) is also increasing.

Crowdfunding is a form of financing mechanism which allows the fundraiser to seek small funds from a widespread audience mainly through social media or a dedicated website. The literature on crowdfunding is new and sparse. Within the relatively new but growing literature of crowdfunding, outcome i.e. success or failure of the crowdfunding campaigns has been a topic of significant interest to IS scholars. However, there have been questions raised about the participatory nature of these platforms (Davies 2015). In this essay, we pursue this line of questioning and attempt to examine how

the disparities in digital capabilities influence the participation and therefore the outcome of crowdfunding campaigns.

Digital Platforms are conceptualized as the free market places, where every participant has an equal opportunity. However, market sceptics argue that market choices are not always as free as they appear and the free market is not a level playing field for all (Sandel 2010). While crowdfunding platforms appear to be neutral, allowing everybody to participate equally, disparities in the digital capabilities of the individual fundraiser may influence the outcome of the crowdfunding campaign and hence, the benefits appropriated. The characteristics and design of a campaign, as well as the crowdfunding platform hosting the campaign, might differentiate among the participants, thus, creating a digital divide. The objective of this work is to explore such disparities. To pursue this research objective, we consider medical crowdfunding projects, where fundraisers raise funds to meet the extraordinary medical expenses. Among different crowdfunding models, medical crowdfunding model is best suited to understand disparities in the system. Because, unlike platforms such as Kickstarter where funders find various motives such as access to prototypes of new and innovative products or services, to fund the campaign (Mollick 2014), the funders in a medical crowdfunding campaign do not have any economic motive to contribute. In such philanthropic cases, onus of persuading the funders to contribute lies entirely on the campaign organizers (Berliner and Kenworthy 2017).

Different types of campaign organizers (e.g., family members of patients, doctors, NGOs) organise medical crowdfunding campaigns, and each type of organizer carries different capabilities. Since every campaigner is in desperate need of economic assistance, and seriousness of the issue is similar in almost every case, the ability to convince the donor becomes the single most criteria in determining the outcome of the campaign (Berliner and Kenworthy 2017). As the organizers play a central role in determining the outcome of the campaign, we believe the differences in their capabilities can influence the outcome of the campaign. To examine these disparities, we intend to use the textual content of crowdfunding campaign collected from a well-known crowdfunding platform, Milaap.org and perform content analysis with the help of Language Expectancy Theory (Burgoon et al. 2002; Parhankangas and Renko 2017) and Elaboration Likelihood Model (Du et al. 2015; Petty and Cacioppo 1986). Since, technology can only amplify the existing human capabilities (Hernandez and Roberts 2018), we argue that the existing differences in the literary capabilities, self-esteem, social capital and credibility widen on a digital platform, manifesting into the digital divide. We believe that these disparities can be best captured through the description of a medical crowdfunding campaign.

The rest of the essay is organised as follows. In the next section, we review the extant literature on crowdfunding. Then, we develop hypotheses based on disparities among different campaign organizers that lead to differences in the outcome of the crowdfunding campaign. Finally, we will lay out the plan for operationalising the research model.

Literature Review:

Extant literature has defined crowdfunding in many different ways. A broadly accepted definition can be found in (Schwienbacher and Larralde 2010), who defines crowdfunding as “an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes” (P4).

Crowdfunding platforms are becoming popular as they overcome the distance related challenges of the market (Agrawal et al. 2015). According to Agrawal et al. (2015), there are three fundamental properties of the crowdfunding which help in reducing the market frictions. They are: (1) easier search – an online application allows the funders to search with ease and participate in the project of their choice, (2) less need for monitoring – as the channel allows small contributions and broad participation, the downside risk and need for monitoring reduces, and (3) information on what other funders have done – the tool provides the opportunity for everyone to see what others have done and communicate with each other. These properties make crowdfunding as an attractive channel for funding and fundraising.

Based on the purpose for which the funds are being raised, crowdfunding can be broadly classified into two models (Mollick 2014). The first model places the funders in the position of philanthropists and seeks funds for art or humanitarian projects (e.g. GoFundMe, Milaap). The second model is the

economic model, where funders lend their money to fundraisers with an expectation of some incentive as a return on the funds lent (e.g. Kickstarter). For this study, we will mainly focus on the first model of crowdfunding, usually adopted by medical crowdfunding projects.

The outcome of the crowdfunding projects (success or failure) has been a topic of significant interest to many IS researchers. We can broadly classify the literature in this field into two streams. The first stream of research builds on information asymmetry and signalling theories. These studies attempt to explain the role of a signal related to quality in reducing the information asymmetry between the donor and fundraiser and how it influences the outcome of the campaign. Prior literature categorises signals in a crowdfunding campaign into three main categories: project-specific signals, creator specific signals, and third party specific signals. Project-related signals include the textual quality of the project description (Du et al. 2015) and the use of visuals in the project page (Mollick 2014). Creator-related signals include project creator professionalism (Joenssen et al. 2014) and previous crowdfunding experience (Davidson and Poor 2016). Studies in this stream of research suggest that the crowdfunding campaigns that show the signals of quality and preparedness have a higher probability of crowdfunding success (Davidson and Poor 2016; Du et al. 2015; Joenssen et al. 2014).

The second stream of literature uses the social network and social capital theories to explain how the size of the campaign organizer's social network, or social capital, influences the outcome of crowdfunding campaign (Agrawal et al. 2015; Mollick 2014). Studies in this stream suppose the presence of potential funders in campaigners' social network and examine the impact of the size of social network, or social capital on the outcome of crowdfunding. These studies suggest the criticality the existing social capital, as a prerequisite for crowdfunding success.

Though extant literature on crowdfunding has made significant advances in the recent past, three broad questions about the crowdfunding campaigns are still unanswered (Davies 2015): (1) whether crowdfunding is participatory? (2) whether crowdfunding increases or reduces social inequality? and (3) whether crowdfunding supports or undermines the role of government? However, our review of literature shows a dearth of literature in IS critically evaluating these concerns around crowdfunding. In this essay, we research on the first two concerns to evaluate the digital disparities in the capabilities of the crowdfunding fundraisers leading to differences in the outcome of a crowdfunding campaign.

Even though platforms are considered as free marketplaces, market sceptics argue that market choices are not always as free as they appear and the free market is not a level playing field for all (Sandel 2010). While crowdfunding platforms appear to be neutral, allowing everybody to participate equally, digital disparities can have an influence in the outcome of a crowdfunding campaign and hence, the benefits appropriated. The characteristics and design of a campaign on crowdfunding platform might exclude a certain group of people, thus creating a digital divide. We argue in the study that differences in capabilities of the individual campaigning on a crowdfunding campaign may influence the outcome of it. Thus, this essay makes contributions to both crowdfunding literature as well as sheds light on the ever-evolving and new facets of the digital divide.

Hypotheses Development:

Expensive medical incidentals are one of the biggest reasons for personal bankruptcies, and medical crowdfunding has become a helpful hand in avoiding such a situation (Berliner and Kenworthy 2017; Burtch and Chan 2014). However, despite the growing popularity, there is not enough research on the usefulness, impact and consequences of the reliance on the crowdfunding for health (Berliner and Kenworthy 2017). Raising fund on a medial crowdfunding platform is challenging as along with the burden of illness of self or a related party, the campaigner also faces huge competition for donation. As the ownership of proving the worthiness for funding rests on the campaign organizer, the challenge increases. Explaining the medical condition in such a way that it convinces an individual to donate requires acquaintance of the medical terminology, literary and media skills (Berliner and Kenworthy 2017). Thus, we argue, medical crowdfunding provides a suitable means for understanding the existing disparities in these platforms and how such disparities manifest into differences in the outcome of the campaigns. We argue that cases of medical crowdfunding are suitable for understanding the participatory nature and disparities in the crowdfunding.

In a medical crowdfunding campaign, it is generally observed the campaigns are managed by the patient or family and friends of the patient. In some cases, however doctors, charitable organizations (NGOs) or professional campaigners request donations on behalf of the patients. Thus, we have different types of campaigners with different capabilities competing for the donations on the same crowdfunding platform. To persuade the donors to donate and to increase their chances of success, these campaigners use different signalling methods (Mollick 2014). One of the commonly used signalling mechanism in crowdfunding campaigns is the campaign description (Berliner and Kenworthy 2017; Du et al. 2015; Parhankangas and Renko 2017). Creating a persuasive campaign description requires different capabilities, ranging from written communication skills to technology and media expertise. Further, the credibility of the campaign organiser also plays an important role in deciding the outcome of the crowdfunding campaign (Mollick 2014). Thus, we argue, the campaign organizer who creates and manages the campaign plays a significant role in a medical crowdfunding campaign. Since they play a major role in the campaign, the *digital capability divide* among the organisers can lead to *content divide* (Hernandez and Roberts 2018). Since, content, in the form of campaign description, images or video are the heart of any crowdfunding campaign, differences in that will manifest into divide in the outcome of the campaign (Wei et al. 2011).

As discussed earlier, the capabilities and skills of the campaign organizers directly get captured in the campaign description (content). As a result, we can examine the description of the campaign to identify the disparities among the campaign organizers. In this essay, we categorize the different campaign organizers into two broad groups based on their capabilities: First, we have either patient who campaign for themselves or family members or friends of the patient, who campaign on behalf of the patients. These people are emotionally involved with the situation and the stakes involved will be usually very high. Also, the campaigners of this group are in a way ‘one time users (OTU)’ of the platform. They organize the campaign for a particular purpose, and once the purpose is fulfilled, they might never return to the platform. We call them ‘OTUs’. The second group of people are doctors, consultants and NGOs, who run the campaign on behalf of their clients. These are professionals and they are more likely to be less emotionally attached to the individual for whom they are organizing the campaigns. Also, they are experts in their domain, and offer their services for a fee. They are credible and usually possess the domain expertise required to persuade the donors. The organizers of this group often use the crowdfunding platform for multiple campaigns. Thus, we call them ‘Experts’. The features of these two groups are listed in Table 1.

Table 1: OTUs vs Experts

	OTUs	Experts
1	Campaigning for their loved ones. Hence, emotionally attached.	Campaign for their clients. Hence, emotional attachment is less.
2	Mostly, infrequent or one time users of the platform – No Learning from past experience	Repeated users of the platform as they organize more than one campaign – Learning from the past experiences
3	May not possess any domain expertise	Experts in their domain. (i.e. Doctors in medicine and Consultants in organizing campaign)
4	Mostly lack social network, hence low on social capital	Mostly will have social network, hence high social capital

To understand the differences in the project description written by these group of people in a medical crowdfunding campaign, we use two communications theories: Language Expectancy Theory (LET) and Elaboration Likelihood Model (ELM). LET argues for the communication-centric view of signaling and communication. It suggests that people develop their expectation based on the communication style adopted by others (Burgoon et al. 2002). The theory focuses on how sentences are framed, structured, choice of words, positive and negative violation of the expectations of the reader (Averbeck 2010). When the expectations of the reader exceed there will be greater attitude changes and

higher will be the persuasions and are referred to as positive violations. On the other hand, negative violations will have the opposite effect. According to the LET, people with high credibility have more linguistic freedom and can select from a number of persuasion strategies without violating the present expectation (Parhankangas and Renko 2017). However, many other groups, who do not have the proven track record have restricted bandwidth of words hence have lower persuasion capability (Burgoon et al. 2002). Higher persuasion directly leads to a higher chance of success rate in a crowdfunding campaign.

As per ELM, source credibility shows the perception of the recipient towards the reliability and mastery of the source of information (Chaiken 1980). Competency and trustworthiness of the source are considered as the two main factors influencing her credibility (Sussman and Siegal 2003) and they determine the trust of the donor. Since, experience/expertise can indicate competency related source credibility (Wang et al. 2011), we can determine the credibility by the number of campaigns managed by the campaigner (consultants) or by his profession (Doctors or Organizations). Further, higher the credibility, higher the probability of success of the crowdfunding campaign. Thus, we hypothesize:

Hypothesis 1: (Base hypothesis) Individual Campaigners (OTUs) will have a lower success rate than Expert Campaigners

To understand the disparities among the individual and expert campaigners, we look beyond the base hypothesis. We argue that examining the linguistic styles that differentiate these groups from one another are crucial in uncovering the disparities among the two groups. Linguistic style is an integral part of social influence, it is agentic in an interactive way (Parhankangas and Renko 2017), and is an important factor affecting how the campaigner approaches and builds a relationship with the donors in a crowdfunding environment. Unlike equity investors, in the case of medical crowdfunding, a donor's primary goal is to help the patients and not a return on investment. Donors are also driven by their need of social motives similar to helping someone in need for a social or personal reason (Belleflamme et al. 2014; Gerber et al. 2012). Hence, linguistic styles that associate the campaigners to their donors at the personal level are supposed to increase the chances of success in (medical) crowdfunding campaigns (Parhankangas and Renko 2017).

Argument Quality (Objectivity and Understandability)

Extant literature on the ELM argues that argument quality is an important indicator of the quality of the information provided (Rabjohn et al. 2008). Argument quality refers to the perceived quality of the information or the persuasion capability of the content of the message (Rabjohn et al. 2008). In the case of a medical crowdfunding campaign, if a donor can cognitively comprehend the information and thinks that the information conveyed is of higher quality, then it is likely that the persuasion will be higher and hence argument quality plays a crucial role in persuading the donor in a crowdfunding environment (Du et al. 2015). Extant literature measures the information quality in different ways. Some factors identified in the extant literature include relevance, timeliness, accuracy, readability, understandability and objectivity (Rabjohn et al. 2008). To measure the argument quality from the text description of medical crowdfunding, we use understandability and objectivity as the measure of quality (Du et al. 2015).

Information is considered as understandable, if the information is clear in meaning, easy to read and easily comprehensible (McKinney et al. 2002). Information which is easy to understand is considered high in quality and increases its usefulness. A message with high quality will increase the probability of persuading the intended reader. In the case of medical crowdfunding, the description is central to the message, and hence, the understandability of the campaign description will directly influence the donor's decision to fund. To explain a medical condition in such a way that anyone can understand, one needs to have mastery over the topic as well as over the language (Berliner and Kenworthy 2017). Hence, we argue that in case of medical crowdfunding campaigns description curated by 'experts' would be easier to understand compared to the contents cured by OTUs. Hence, we hypothesize:

H2a: Understandability positively influence the success of medical crowdfunding

H2b: Individual Campaigners (OTUs) will have lower understandability than Expert Campaigners and hence lower success rates.

Further, objectivity is defined as “the extent to which the data are unbiased (unprejudiced) and impartial” (Wang and Strong 1996, p32). Objectivity of the information is considered as a measure of the intrinsic quality of the information and is considered evidence in professional writings (Wang and Strong 1996). Thus, we argue in a medical crowdfunding platform, experts, who are professionals will present the information in an objective manner compared to the OTUs. This objectivity will be captured in the text description of medical crowdfunding campaigns and depicts the information quality. Thus, we hypothesize:

H3a: Objectivity positively influences the success of medical crowdfunding

H3b: Description written by Individual Campaigners (OTUs) will have lower objectivity than Expert Campaigners and hence lower success rates

Emotional Connect (Interactivity and Psychological Distancing)

Recent studies in psychology illustrate that there is a better chance of getting support from others if assistance is sought in such a way that induces emotions than depicted in an impersonal way (Dickert et al. 2011; Kogut and Ritov 2005). Hence, we argue that the linguistic styles that assist in creating an emotional bond with the donor/funder influence the outcome of crowdfunding campaigns. Features of the linguistic styles that draws the funders closer to the campaigners (1) demonstrate significant level of interactivity and (2) low level of psychological distancing with donors (Toma and D’Angelo 2015).

A campaign organizer can either adopt a style of presenting the case details, i.e. facts about the medical conditions of patients in a simple descriptive way, or alternatively, she might present them in such a way which elicits a response from the target audience. The interactivity of a campaign can be measured in two ways: (1) an interactive style of presenting the argument in the description of the campaign (2) frequent updates about the patient’s condition and campaign progress. Interactivity depicts the responsiveness of the campaign organizers and thus, is likely to stimulate trust and likability; features reckoned necessary for campaign success (Parhankangas and Renko 2017). Further, we argue that, to present the arguments in an interactive style, the campaign organizer needs to have good communication skills and to update the campaign one needs to be accustomed with the technology. Considering the aggregate language skills and technology penetration in India, we believe the campaigns run by the experts will be more interactive than the individual campaigners. Thus, we hypothesize:

H4a: Interactivity of the campaign positively influences the success of medical crowdfunding

H4b: Individual campaigners (OTUs) will depict *lower interactivity than* Expert Campaigners, and hence lower success rates

Psychological distancing is defined as “the extent to which an individual distances or removes herself from the present circumstances or the topic being discussed” (Parhankangas and Renko 2017, p6). In the case of medical crowdfunding campaigns, we argue that the expert campaigners will act in an objective and unbiased way. However, the donors are more likely to support the campaigns that connect to their emotions, by sharing their personal stories. This can be done by sharing the stories using the first-person pronouns (I), by explaining their difficulties and by using negative emotional words (Toma and D’Angelo 2015). Greater psychological distancing may alienate the donor from the campaigner. Thus, we argue psychological distancing reduces chances of medical crowdfunding success. We believe that descriptions curated by individuals are less likely to exhibit psychological distancing compared to those curated by experts, as individuals can explain their suffering and emotionally connect to the donors thus, reducing the psychological distance. Reduced psychological distancing in turn will assist in increasing the chances of success of the campaign.

H5a: Psychological distancing positively influences the success of medical crowdfunding

H5b: Individual campaigners (OTUs) will depict lower psychological distancing than Expert Campaigners and hence positively influence CF success

Proposed Methodology and Future Directions

To operationalize the proposed research model, we have collected the medical crowdfunding data from an India crowdfunding platform Milaap. Founded in 2010 to support the charitable and rural developmental causes, Milaap has become a go-to platform for medical crowdfunding in India. As of 2018, it has raised more than three billion INR (equivalent to about 42 million US dollars) to support more than 100,000 causes, more than 6,000 of which were medical crowdfunding campaigns. For this study we will be considering only these medical crowdfunding campaigns.

Because, the success of the campaign can be defined as the ratio of the funds requested to the funds raised, we build a regression model to study the influence of project description and campaigner category on the campaign. The variables are listed in Table 2. The conceptual model (Figure 1) and empirical model is shown below:

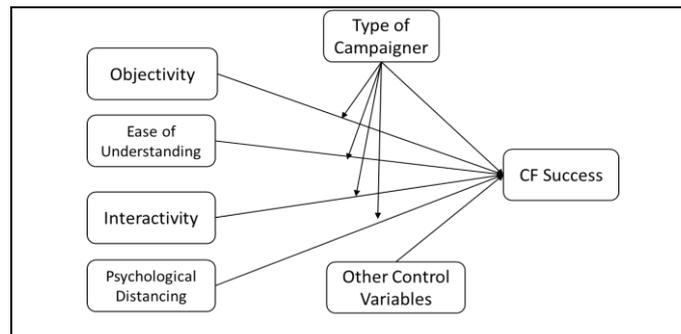


Figure 1. Conceptual Model

$$LM(\text{Success}) = \beta_0 + \beta_1 \text{TOC} + \beta_2 \text{Objectivity} + \beta_3 \text{Interactivity} + \beta_4 \text{EOU} + \beta_5 \text{Interactivity} + \beta_6 \text{Objectivity} * \text{TOC} + \beta_7 \text{Interactivity} * \text{TOC} + \beta_8 \text{EOU} * \text{TOC} + \beta_9 \text{Interactivity} * \text{TOC} + \dots \text{Other Controls} \dots + \epsilon$$

Table 2: Variables for the research model

Variable	Description
Crowdfunding (CF) Success	Success Ratio = Funds raised / Funds requested
Type of Campaigner (TOC)	OTU and Experts
Objectivity	The ratio of positive and negative words in a project description.
Ease of Understanding (EOU)	Readability of project description, measured by the Gunning Fog Index.
Interactivity	Number of interrogative sentences (or) number of campaign updates
Psychological Distancing	Number of first person pronouns

In this research we expect to showcase that the digital platforms similar to other digital technologies have an amplifying effect. The existing differences in the literary capabilities, self-esteem, social capital and credibility of different users of the platform widen on a digital platform such as medical crowdfunding, manifesting into the digital divide. Hence, through this research, we intend to contribute to the growing research area of the impact of digital platforms on the socioeconomic development along with the literature on multifaceted nature of digital divide.

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