

# UCC Library and UCC researchers have made this item openly available. Please let us know how this has helped you. Thanks!

Title	What kind of cause unites a crowd? Understanding crowdfunding as collective action
Author(s)	Gleasure, Rob; Feller, Joseph
Publication date	2018
Original citation	Gleasure, R. and Feller, J. (2018) 'What kind of cause unites a crowd? Understanding crowdfunding as collective action', Journal of Electronic Commerce Research, 19(3), pp. 223-236. Available at: http://www.jecr.org/sites/default/files/2018vol19no3_paper2.pdf (Accessed: 8 September 2021)
Type of publication	Article (peer-reviewed)
Link to publisher's version	http://www.jecr.org/sites/default/files/2018vol19no3_paper2.pdf Access to the full text of the published version may require a subscription.
Rights	© 2018, Journal of Electronic Commerce Research.
Item downloaded from	http://hdl.handle.net/10468/11847

Downloaded on 2021-11-27T15:12:23Z



# WHAT KIND OF CAUSE UNITES A CROWD? UNDERSTANDING CROWDFUNDING AS COLLECTIVE ACTION

Rob Gleasure
Cork University Business School
University College Cork, Ireland
O'Rahilly Building, University College Cork, Ireland, T12 K8AF
r.gleasure@ucc.ie

Joseph Feller
Cork University Business School
University College Cork, Ireland
O'Rahilly Building, University College Cork, Ireland, T12 K8AF

jfeller@ucc.ie

#### **ABSTRACT**

This paper explores the types of shared goals that underlie fundraising activities in web-enabled charitable crowdfunding, as well as how these goals unite donors and fundseekers. A grounded theory analysis is undertaken using a stratified sample of records from Pledgie.com, a crowdfunding website dedicated to charitable causes. Content analysis of these records reveals three types of information sharing associated with successful fundraising (1) information supporting impact (2) information supporting morality and (3) information supporting external relationships. These information types are related back to existing literature on collective action to explain how and why communities of donors form around specific fundraising initiatives. Findings suggest that while most existing models of charitable crowdfunding adopt a view of information sharing based on dyadic communication between donors and fundseekers, charitable crowdfunding should also be viewed as a technological paradigm capable of forming action-oriented collectives based around specific causes, beliefs, and/or identities.

Keywords: Crowdfunding; Charity; Collective action; Content analysis; Grounded theory

# 1. Introduction

Recent years have seen the introduction and rapid growth of Internet-enabled crowdfunding, a phenomenon in which a community of funders provides money directly to individuals and organizations without relying upon traditional financial intermediaries [Lehner, 2013; Rossi, 2014; Mollick, 2014; Hobbs et al., 2015; Gleasure and Feller, 2016a]. This has the potential to change much of the financial landscape, including how individuals manage their savings and investments [Livingston and Glassman, 2009; Gelfond and Foti, 2012], as well as how businesses create new products/services [Ordanini et al., 2011; Burtch et al., 2014; Joenssen et al., 2014], how creative industries source funding [Sorensen, 2012; Hobbs et al., 2015], and how entrepreneurs launch new businesses [Giudici et al., 2012; Lasrado and Lugmayr, 2013; Koch and Siering, 2015]. Moreover, the emergence of crowdfunding has coincided with a dramatic change in the economic landscape for philanthropic and charitable markets, which now has a community of donors proactively seeking out opportunities to donate [Altinkemer et al., 2007; Heller and Badding, 2012; Liu et al., 2012; Cano Murillo et al., 2016; Gleasure and Feller, 2016c].

Much existing crowdfunding research assumes a view of the crowd in which relationships between information, interactions, and behaviors are individual and linear in nature. This view is not consistent with observations in other forms of crowdsourcing such as the development of Wikipedia [e.g. Ciffolilli, 2003; Olleros, 2008], open source software [e.g. Von Krogh et al., 2003; Ducheneaut, 2005], or open marketplaces [e.g. Guo et al., 2017], where goals are negotiated on an ongoing basis. The manner of crowd participation in crowdfunding is clearly less direct than these other forms of crowdsourcing. However, crowd members nonetheless approach projects with non-overlapping goals which they expect to be considered at varying levels of priority [Gerber and Hui, 2013; Gleasure and Feller, 2016b; Yang et al., 2016; Gleasure et al., 2017]. Such challenges are common in collaborative sociotechnical environments, due to the diverse motivations of participants and the need to balance these motivations with collective objectives [Ashforth and Mael, 1989; Star and Griesemer, 1989; Kaptelinen and Nardi, 2006]. This

appears especially relevant for those crowdfunding projects motivated by less tangible outputs, e.g. those projects characterized by philanthropic or charitable goals. Hence, charitable crowdfunding is the focus of this study.

The salience of philanthropic or charitable goals varies across crowdfunding platforms. Some platforms take a more transactional and economic view of crowdfunding, facilitating donations in the form of commercial interest-based loans (e.g. Smava, Lending Club, PPDai) or the sale of business equity in exchange for financial contributions (e.g. CrowdCube, EarlyShares). Other platforms offer rewards or material benefits for contributing towards products and services (e.g. Kickstarter, Indiegogo). Many others cater to fundseekers who offer no promise of financial or material reward. Instead, donors are encouraged to contribute to help those in need (e.g. GoFundMe, Razoo) or to encourage economic growth in developing countries (e.g. Kiva). Individual-level motivations for such donation have been the subject of some inquiry. Factors identified include similarities in culture, occupation, and gender [Sinanen, 2009; Riggins and Weber, 2012], the hedonic value of participating [Gleasure and Feller, 2016a; Zheng et al., 2017], and the social dimensions of projects, e.g. whether they are concerned with health, education, economic development, etc. [Heller and Badding, 2012; Ly and Mason, 2012; Moodie, 2013]. This body of research provides interesting insights, yet it does not explain what types of collective objectives are more successful in uniting communities of donors and fundraisers, nor how these collective objectives are negotiated.

This trend towards individual interests is not without exception. Several other studies engage with collective-level behaviours to some extent. Notable examples include observations of 'herding' by Burtch et al. [2011] and Cordova et al. [2015], whereby more donations are received as a project approaches its fundraising target and less once it has been reached, as well as observations of within-dialogue meaning creation by Beaulieu and Sarker [2013], dialogue intensity by Joenssen et al. [2014], and dialogue appropriation by Nevin et al. [2017]. These studies add valuable understanding around the behavioral dynamics by which established collective objectives are pursued. Yet the manner in which these collective objectives are identified and negotiated remains a mystery. There is therefore a lack of alignment concerning the accumulation of collective goals from the individual dyadic communications that give rise to them. Thus, the objective of this study is to explore what types of collective objectives described by charitable crowdfunding campaigns are most capable of balancing and integrating individual-level goals.

In the absence of an obvious strong existing theory-base for this exploration, a grounded theory approach is adopted that draws on observations from one specific charitable crowdfunding platform (Pledgie.com). This involves an in-depth qualitative content analysis of a sample of campaigns, stratified according to their level of fundraising success. Findings reveal several key types of information disclosure that occur more frequently in charitable crowdfunding campaigns with higher levels of fundraising. The nature of this information is subsequently explored and, based on emerging theoretical convergence, related to existing research on the theory of collective action.

# 2. A Case Study of Pledgie.com

#### 2.1. A Grounded Theory Approach

The social and technological context for crowdfunding is relatively young, having only emerged in the last decade. Such contexts are typically characterized by novel and continuously evolving behaviors that are difficult to predict deductively [Vaast and Walsham 2013]. Thus, this study adopts a grounded theory approach [Corbin and Strauss 1990, 2008], positioned within a subjective post-positivist epistemology [Mingers, 2001].

Grounded theory traces its origins back to the work of Glaser and Strauss [1967], which sought to develop a highly inductive approach to theory building. This approach advocates the use of data to develop theory in a manner that is contextually respectful and open-minded [Dey 1999, Urquhart 2001, Charmaz 2006]. Grounded theory can be characterized along six key dimensions [c.f. Birks et al. 2013], namely: (i) a focus on theory development for describing and analyzing the phenomena of interest, (ii) the constant comparison of data against different standpoints represented by continuously evolving 'analytical and theoretical memos', (iii) the iterative coding of data across multiple passes, as emerging theory becomes more sophisticated, (iv) the theoretical sampling of data along emerging differentiating dimensions, (v) the management of preconceptions that avoids reliance upon any specific theory as a starting point, and (vi) the inextricable link between data collection and analysis that incorporates further sampling as part of ongoing analysis and theorizing.

These characteristics transcend divisions within the discussion of grounded theory as a methodology, yet grounded theory nonetheless represents a 'contested space' [Urquhart and Fernández 2013]. The central issue of contention regards the extent to which the approach is harmonized with differing ontological assumptions and the extent to which passive or active analysis techniques are applied [Esteves et al., 2002; Suddaby, 2006; Jones and Alony, 2011; Urquhart and Fernández, 2013]. Despite some disagreement as which is most effective, the consensus

is that grounded theory techniques are consistent with both realist and relativist worldviews, provided the necessary philosophical due diligence is performed [Urquhart et al., 2010; Birks et al., 2013].

The post-positivist perspective adopted in this study resonates with the ontological realism of the 'Glaserian' perspective on Grounded Theory [c.f. Heath and Cowley 2004, Jones and Alony 2011]. This encourages a process of 'scaling up' during theorizing, in which the scope of findings is increased from substantive theory to a more generalizable 'formal theory' [Glaser and Strauss, 1967; Dey, 1999; Suddaby, 2006]. Specific to this study, such 'scaling up' demands that inductive theorizing must make some effort to relate findings to the broader paradigm of charitable crowdfunding, rather than abstracting solely from data on Pledgie.com. The subjective epistemology of a post-positivist perspective also acknowledges that data gathering and analysis require directed and proactive interpretation. Thus, to aid this interpretation of data the structured coding techniques advocated by Corbin and Strauss [1990] are also employed.

# 2.2. Selection of Research site

Pledgie was established in 2007 to enable 'highly personal' charitable donations as part of online volunteerism. Since then, the website has hosted campaigns across a variety of causes, including a range of technology initiatives and social projects. The basic mechanism for Pledgie is similar to many other crowdfunding platforms, i.e. a campaign administrator launches a campaign webpage where details are provided and donors are invited to donate (openly or anonymously), leave comments, or ask questions. These webpages may or may not specify some fundraising target but, for those that do, all funds raised are kept, regardless of whether or not this target is met. A typical campaign pages is presented in Figure 1.



Figure 1: An example of a campaign page from Pledgie.com

Pledgie is selected as a 'typical case' [c.f. Yin 2008] of charitable crowdfunding for two reasons. First, unlike a site such as GoFundMe, which has achieved breakaway market-leader status, the scale of Pledgie is representative of most established charitable crowdfunding platforms, e.g. Fundrazr, CauseVox, Fundly, and Razoo. Second, the informational content of campaigns on Pledgie and the mechanisms for interaction between campaign administrators and funders is consistent with most other platforms. This is in contrast with a site such as CrowdTilt, which focuses on enabling friends and family members to pool money for specific causes, or GiveCollege, which focuses on fundraising for student tuition. These two factors mean that insights from Pledgie are made easier to extrapolate to other charitable crowdfunding platforms, as well as relate back to the broader crowdfunding paradigm.

# 2.3. Data Gathering and Analysis

The unit of analysis in this study is an individual crowdfunding campaign. The sampling strategy for campaigns presents a challenge, as more successful and/or ongoing crowdfunding campaigns are typically more visible on Pledgie. This meant a navigation-based approach to theoretical sampling may have excluded campaigns that were

already completed or less successful. Instead, an exhaustive list of individual fundraising campaigns on Pledgie.com up to February 2014 was obtained (N=18,615). This included a range of information provided on each of those campaigns, such as the description provided by fundseekers, the target for fundraising, the amount of funding raised, the number of previous campaigns supported by donors and fundseekers, the number of donations made anonymously, and the comments made by donors and fundseekers. Only those that had raised some funding (N=5,736) were considered for analysis, as it was impossible to determine whether other campaigns had been actually launched, e.g. campaigns could be acting as placeholders for planned fundraising or be abandoned before they were shared with the public. A linear regression performed on the 5,736 campaigns receiving some funding suggested no relationship between the length of the campaign description (measured in characters), R2 < .001, p = .765. This suggested higher levels of donation could not be simply attributed to lengthier descriptions, further supporting the value of a qualitative approach capable of exploring the nature and content of communication between fundseekers and donors.

Qualitative analysis focused upon stratified sample of records from campaigns that received some funding from the Pledgie community. Campaigns were divided into four quartiles according to the US Dollar equivalent of the amount of funding received. A five-figure summary of the US Dollar equivalent of fundraising was [\$00.01, \$42, \$165, \$500, \$72367.30], meaning the quartiles were defined as follows:

- \$00.01 < *low success* < \$42;
- \$43 < *low-to-mid success* < \$165;
- \$166 < high-to-mid success < \$500;
- \$500 < high success.

10 campaigns were randomly selected from each quartile and analyzed, resulting in a total of 40 campaigns. Data were gathered for each of these campaigns and coded using the open, axial, and selective coding techniques proposed by Strauss and Corbin (1990].

Coding began with a 'line by line' exploration of the discourse in campaign descriptions, donation records, and campaign commentary [Glaser and Strauss, 1967; Bowen, 2006; Charmaz, 2006]. Open codes were developed for each stage as part of constant comparison, as recurring themes emerged in the data in the form of categories and subcategories. These categories were noted and themes were reflected upon in a set of theoretical memos that evolved continuously during data collection and analysis. Both authors routinely compared interpretations and challenged conclusions to ensure findings were credible and reliable [Maxwell, 1992; Patton 2002]. With these categories in place, iterative coding was employed to as part of multiple revisits to the data to refine the emerging categories and subcategories. Initial coding focused on any persuasive utterance in the text and no conscious effort was made by the authors to relate these codes to one another. As coding continued, open categories and subcategories naturally became more salient in coding. This coincided with some utterances becoming a cleaner fit than others, e.g. one individual referenced how difficult it was to help everyone in a rescue hospital. Over several iterations, this claim was eventually coded as a 'direct moral or ideological appeal' to reflect the context of the utterance and the persuasive elements perceived as most relevant. This iterative coding was necessary to resolve the potential overlap with 'breakdown of spending', as this also arguably captured some of the perceived intent behind the utterance. As codes matured, this ambiguity became less problematic, as the latter code tightened around specific expenditures, rather than general areas of future focus. Coding ceased when the complete set of codes met two criteria (i) both researchers felt each persuasive utterances was captured by at least one of the open codes (ii) both researchers agreed which code was most appropriate.

These revisits enabled a move from open to axial coding, which sought to identify relationships between the categories and subcategories developed in open codes, as areas of overlap and interdependency. This allowed more robust set of categories to be defined with clearer discriminatory boundaries to separate them. At this point, campaigns were selectively coded as part of a basic content analysis [Hsieh and Shannon, 2005] to determine the frequency of different codes within each fundraising quartile. This was done to test emerging constructs and relationships, as well as to give some indication as to whether these codes were associated with greater levels of fundraising.

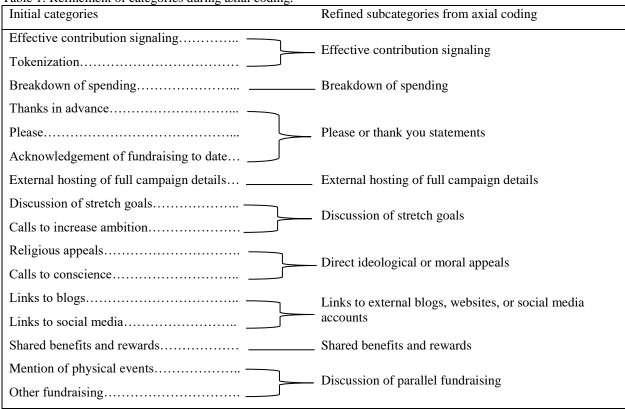
#### 3. Breakdown of findings

Open coding during the first inspection of data identified 15 related but separate categories. These categories were as follows: 'effective contribution signaling', 'tokenisation', 'breakdown of spending', 'thanks in advance', 'please', 'shared benefits and rewards', 'acknowledgement of fundraising to date', 'discussion of stretch goals', 'religious appeals', 'calls to conscience', 'links to external blogs, websites, or social media accounts', 'calls to increase ambition', 'discussion of parallel fundraising', and 'external hosting of full campaign details'.

Axial coding then proceeded to compare the initial set of codes according to the six headings described by Strauss and Corbin [1998), namely (i) identifying the nature of the phenomenon of interest (ii) identifying causal conditions that give rise to the phenomenon of interest (iii) identifying the contextual conditions under which the phenomenon of interest takes place (iv) identifying the intervening conditions that mitigate the impact of causal conditions, (v) identifying the action/interaction strategies implemented by the parties involved and (vi) identifying the consequences of those strategies.

This comparison illustrated that several codes were difficult to theoretically differentiate, resulting in the initial 15 categories being combined into 9 subcategories (see Table 1). Specifically, the following categories were merged: 'tokenisation' was subsumed by 'effective contribution signaling'; 'calls to increase ambition' was subsumed by 'discussion of stretch goals'; 'religious appeals' and 'calls to conscience' were combined as 'direct ideological or moral appeals'; 'mention of physical events' and 'other fundraising' were combined as 'discussion of parallel fundraising'; 'links to blogs' and 'links to social media' were combined as , 'links to external blogs, websites, or social media accounts'; and finally 'thanks in advance', 'please', and 'acknowledgement of fundraising to date' were combined as 'please or thank you statements'.

Table 1: Refinement of categories during axial coding.



Themes were then combined for each of these 9 subcategories to produce 3 emerging high-level constructs (see Table 2). The grouping of these constructs and the composition of the underlying subcategories did not change from this point onwards. However, sense-making for these constructs began to relate findings to existing research as part of the ongoing and iterative theory enrichment process [Bryant, 2002; Charmaz, 2006; Timmermans and Tavory, 2006]. This is noteworthy, as it influenced the labelling of these constructs and framed the vocabulary of analysis in a way that created a natural abductive path back to existing research (described in more detail in the following section). The final set of categories were 'information supporting impact, 'information supporting morality', and 'information supporting external relationships'. Finally, selective coding looked for specific instances of dialogue that reflected each of these constructs. These primary sources were complemented by 'theoretical slices' of data from websites, social media accounts, and websites referenced within campaigns, which were analyzed to support a rounded conceptualization of the discourse taking place [Glaser and Strauss, 1967; Dey, 1999; Esteves et al., 2002]. This allowed 132 instances of discourse to be identified across the 40 sampled campaigns, the distribution of which is presented in Table 2 and Figure 2.

A higher frequency of these instances of discourse is observed for campaigns with higher levels of fundraising. This suggests those campaigns manifesting more of the coded types of information attracted more investment from donors on Pledgie. Thus, not only do these types of information represent recurring patterns of discussion; they also represent patterns that appear compelling to the donor community. Each of these types of information is discussed in more detail in the following sections.

Table 2: Distribution of quotes identified by selective coding (darker shading indicates higher frequencies).

		High Success	High-to- mid success	Low-to- mid success	Low success	Total
	Total	51	37	20	24	132
Information supporting impact	<i>Total (N=28)</i>	9	11	3	5	28
	Effective contribution signaling	1	3	0	0	4
	Breakdown of spending	7	6	3	5	21
	Shared benefits and rewards	1	2	0	0	3
Information supporting morality	<i>Total (N=72)</i>	27	22	10	13	72
	Please or thank you statements	4	8	4	7	23
	Discussion of stretch goals or encouragement	12	6	0	2	20
	Direct moral or ideological appeals	11	8	6	4	29
Information supporting external	Total (N=32)	15	4	7	6	32
	Links to external blogs, websites,	7	2	4	4	17
	or social media accounts					,
relationships	Discussion of parallel fundraising	5	2	2	2	11
	External hosting of full campaign	3	0	1	0	4
	details					

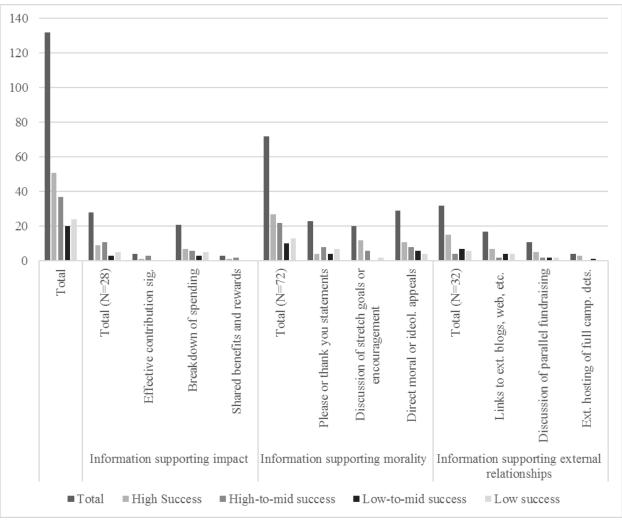


Figure 2: Frequencies of information disclosures, grouped by level of fundraising success

# 4. Discussion and formal theory-building

The types of information identified in the previous section begin to offer a 'substantive theory' of events, in that they offer an abstract account of communication behavior described by the data [Glaser and Strauss, 1967]. Scaling up these findings to a more generalizable formal theory requires the transformation of 'narrow' concepts into higher-level abstractions, and the 'theoretical integration' of findings, by which these higher-level abstractions are related back to existing literature [Urquhart et al., 2010]. This is important, as scholars have criticized the amount of novel theories actually generated by the approach when theorizing relies upon induction alone [Bryant, 2002; Clarke, 2005]. Rather, researchers are encouraged to use abduction and existing research to determine what their findings 'are a case of' [Charmaz, 2006; Timmermans and Tavory, 2006].

One area of 'narrowness' concerns the lack of explanatory depth of the emerging substantive theory, which identifies specific types of information impacting upon fundraising but does not propose a mechanism as to how or why these types of information are important. To help explore these how and why questions, we relate findings are related back to existing research for the theory of collective action [c.f. Ostrom, 2000; Olson and Olson, 2009].

Collective action explains why rational people contribute to the production of a public good, even though the selfish cost of that contribution ostensibly disadvantages them relative to their peers (as those peers also benefit from the public good with no loss of wealth) (c.f. Ostrom, 2014]. Collective action has been applied to a range of contexts to explain why many individuals decline the option to 'free ride', e.g. volunteering for non-profit organizations [Hustinx and Lammertyn, 2003], participating in climate change protests [Segerberg and Bennett, 2011], and even

participating in institutional innovation [Hargrave and Van de Ven, 2006]. Central to collective action across each of these contexts is the need for communication between collaborating actors, without which individuals are increasingly inclined to pursue selfish interests at the expense of collective value – see 'the tragedy of the commons' [Hardin, 1968; Feeny et al., 1990]. This focus on communication in collective action resonates with the theory-building focus on the study.

A meta-analysis of collective action in social contexts found that much of collective action could be explained by three key constructs, namely perceived efficacy, perceived injustice, and perceived identity [Van Zomeren et al., 2008]. Each of these three contributors to collective action can be mapped to one of the types of information identified in successful Pledgie campaigns (see Figure 3). These mappings are explored individually in the following subsections as part of theoretical integration.

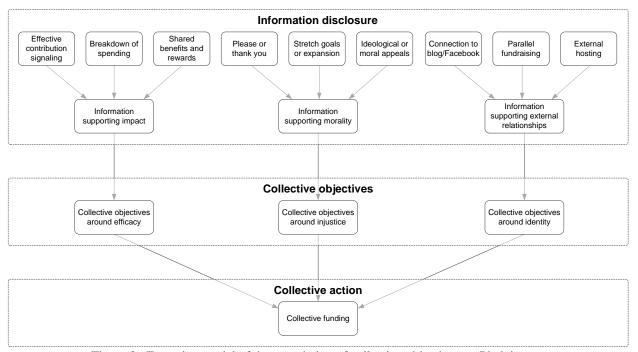


Figure 3: Emerging model of the negotiation of collective objectives on Pledgie.com

#### 4.1. Information supporting impact and collective objectives around efficacy

Efficacy-based perspectives of collective action propose that the value emerges in the form of new summative capabilities or 'resource mobilization' [McCarthy and Zald, 1977; Jenkins, 1983]. This may occur altruistically, or occasionally as a by-product of selfish interests [Benbunan-Fich and Koufaris, 2013]. In the context of charitable crowdfunding, information supporting impact facilitates collective objectives around efficacy by demonstrating how individual donations can be combined into desirable outputs not achievable by any one individual. This effect can be seen for all three types of information supporting impact, each of which reinforces the personal or social outcomes associated with donations.

The first type of information supporting impact coded was 'effective contribution signaling', i.e. references to specific donation amounts. Previous research has observed that suggesting a specific amount for donations presents an 'anchor' that removes uncertainty by establishing a socially acceptable donation size [Briers et al., 2006]. This minimizes the number of potential contributors who are deterred by concerns their imagined donation would appear underly or overly generous. Examples from Pledgie include "If everybody who has the possibility to donates something between 5€ and 10€ we're done!" and "Any donation will be deeply appreciated. \$15 is an honor. \$50 is a beautiful gift. \$500 is a strong commitment to bringing my dream to life".

The second type of information supporting impact observed on Pledgie was 'shared benefits and rewards', i.e. references to backers receiving specific material or social rewards. As with simple donation requests, this form of amount suggestion presents a donation anchor in terms of the actual value of the token gift. However, it also presents an 'alibi' for donations that lowers on-going emotional commitment or donors' embarrassment for feeling compassion [Lerner, 1977]. Examples from Pledgie include "What's in it for you as a contributor?... Free coffees...

for life!" and "If ever in the future I write a book or create an educational program (at least one of the two is likely), I will acknowledge any donor to my educational fund publicly or anonymously".

The third type of information supporting impact coded, as well as the most frequent, was a 'breakdown of spending', i.e. references to specific planned expenditures. Where the former two types focused on the nature of the donation transaction and tangible rewards, the 'breakdown of spending' was most akin as an appeal to pure altruism [c.f. Andreoni, 1990), i.e. giving to achieve specific external outcomes. Providing such information may be a means of communicating a needs-directed governance approach to a charitable project [Hyndman and McDonnell, 2009], as well as an effort to convey trustworthiness in specific individuals by reducing information asymmetry [Karlan and Zinman, 2009]. Examples from Pledgie include "For us to keep these servers running, we need to pay around \$50 a month for all the hosting costs" and "The vet bill alone for first visit was over \$400. I am expecting to pay up to \$2600 for his medical care".

# 4.2. Information supporting morality and collective objectives around injustice

An injustice-based view of collective action assumes that social inertia may be broken by a build-up of negative group-based emotions such as anger, outrage, or fear [Frijda, 1986; Miller et al., 2009]. Such emotions may arise from prejudice against the group itself [Smith and Ortiz, 2002; Smith et al., 2013], perceived prejudice against other groups with little or no ability to defend themselves [Mallett et al., 2008], or religious motives [Lukács, 1997]. This suggests that information supporting morality may facilitate collective objectives around injustice by calling for compassion. This effect can be seen for all three types of information supporting morality, each of which appeals to the donor population's sense of decency.

The first type of information supporting morality was that of 'please or thank you statements', i.e. references to donation-related gratitude. Studies of other forms of crowdfunding, for example peer-to-peer lending, have suggested that indications of a fundseeker's morality may have a significant impact on donations received [e.g. Pötzsch and Böhme, 2010; Herzenstein et al., 2011]. It is intuitive that this effect would be brought even more into focus in charitable contexts, given the role of donors' perceptions of 'deservingness' [Eckel and Grossman, 1996]. Examples from Pledgie include "Please help us with this very important cause" and "Please help us speed them on their way to forever homes".

The second type of information supporting morality describes 'direct moral or ideological appeals', i.e. references to altruism or charity as a motivation for helping the project. The impact of such appeals is partly to increase empathy and the personal satisfaction or 'warm glow' donors may receive from the act of giving [Andreoni, 1990; Ferguson et al., 2012]. Such empathy is typically influenced by personal biases, particularly perceptions of similarity, e.g. observations from Kiva.org have shown that donors who infer cultural similarities from the personal narratives are more likely to donate money to those individuals [Sinanan, 2009; Riggins and Weber, 2012; Burtch et al., 2013]. Examples from Pledgie include "This is the most intricate, heart breaking, and traumatizing situation [fundseeker] has ever encountered" and "By helping children living in such extreme poverty we can enable them to experience the fullness of life God offers".

The third type of information supporting morality was the 'discussion of stretch goals or encouragement', i.e. references to enthusiasm for future project activities. Within Pledgie, this information reflected a desire for an ongoing relationship between fundseekers and donors based on shared goals for the future. Such an on-going relationship is essential for establishing 'kinship', which acts as both a source of reciprocity and self-definition [Brown, 2000]. Examples from Pledgie include "Good Luck Sista! Very happy to support you and your vision and path" and "Continued donations are greatly appreciated and fundraising will also continue for the foreseeable future in order to help the [named] families".

# 4.3. Information supporting external relationships and collective objectives around identity

An identity-based perspective of collective action is similar to an injustice-based perspective, in the sense it requires empathy between an individual the individual or group in need [Polletta and Jasper, 2001]. However, it differs in two important ways. First, there is often an element of social competition involved, meaning that the permeability (or absence thereof] of group boundaries is an important contributor [Hogg and Terry, 2000; Li, 2011]. Second, the level of shared ancillary behaviors in a social group plays an important role in reinforcing collective action [Drury and Reicher, 2000]. This suggests a need to demonstrate the broader set of fundseekers' interests and activities, as well as to demonstrate a long-term commitment to their current identity. Previous research has shown, for example, that fundraisers who have backed other projects are more likely to be successful due to a perceived commitment to the group [Koch and Siering, 2015, Zvilichovsky et al., 2015]. This effect can be seen for all three types of information supporting external relationships, each of which serves to reinforce the relationship between the administrators Pledgie.com identity and their identity in other aspects of life.

The first type of information supporting external relationships described 'links to external blogs, websites, or social media accounts', i.e. references to other platforms or communities. Drawing upon observations of peer-to-

peer lending on Prosper.com, a peer-to-peer lending platform with a strong social element, the assimilation of an identity from social networks may impact positively upon donations in two separate ways relevant to each of these types of information. First, donors may infer trustworthiness based on a fundseeker's existing connections [Berger and Gleisner, 2009; Greiner and Wang, 2009]. Second, the disclosure of personal information may represent an act of benevolence that reassures donors as to the fundseeker's intentions [Duarte et al., 2012]. Examples from Pledgie.com include "Please "like" our FB page" and "See my website for a quick view of my web presence and services I offer".

The second type of information supporting external relationships included 'discussions of parallel fundraising', i.e. references to donations outside the current crowdfunding page. This is likely to have similar benefits as the first type of information. However, a large portfolio of volunteering and harmonizing with other volunteers may also serve to demonstrate the commitment of the administrator to the cause in question [Boezeman and Ellemers, 2007]. Examples from Pledgie include "For any of you that would like to attend, we'll be holding a benefit with Stephanie, including a silent auction on ..." and "For those who could not attend the Bestival Benefit night, or who simply want to donate to this great cause, please feel free to donate here".

The third type of information supporting external relationships referred to 'external hosting of full campaign details', i.e. references to information or communication outside the current crowdfunding page. This is also likely to have similar effects as the former two types of information supporting external relationships. One area where it may have unique benefits arises when an external community overlaps with the donor community. In particular, due to the reputation for supporting non-profit technology initiatives on Pledgie, several campaigns simply pointed to projects on GitHub, a website commonly used for sharing source code. Examples from Pledgie include "This project is hosted on [name of external site]", and "IRC client for OSX - Homepage: [URL]".

#### 5. Conclusions

This research makes several important contributions to our understanding of crowdfunding. First, a tendency has been observed in studies of charitable crowdfunding (and other forms of crowdfunding) to model behaviors at an individual-level, whereby information sharing and donation decisions occur dyadically between donors and fundseekers [Posegga et al., 2015; Gleasure and Feller, 2016a]. The current study suggests that such a view may not capture important aspects of how information is shared and processed among the population of donors. In particular, a dyadic account does not describe how communication and interaction feeds into the formation of some cause-based collective.

Second, by assimilating findings into existing research on the theory of collective action, this study is able to discuss the underlying psychosocial causal mechanisms that may come into play in crowdfunding, rather than taking a purely behavioral approach. This perspective proposes a model of donor behavior that suggests they are not simply looking to contribute resources to some other individual's cause. Rather, they are looking to 'join forces' and bring their personal resources to bear as part of a collective initiative. Such findings resonate with previous observations that an excessively fundraising goal may deter contributions [e.g. Burtch et al., 2011; Cordova et al. 2015]. This therefore adds clarity to the interplay between individual 'micro'-level information processing and collective 'macro'-level evaluation. Such clarity across different levels of analysis is fundamental for the development of theories that explore the causes of social phenomena, rather than just looking for correlation between observed behaviors [Hedström and Swedberg, 1996].

Third, the ability to relate findings to different aspects of the theory of collective action not only lays the foundation for the generalizability of findings to other charitable crowdfunding platforms, but also helps to relate charitable crowdfunding to other charitable contexts in which collective action occurs. There is no doubt that many donations made via crowdfunding come from individuals with whom fundseekers have some previous social connection [e.g. Agrawal et al. 2015; Warren et al., 2017; Gleasure and Morgan, 2018]. Yet charitable crowdfunding offers a valuable and unusual means for collectives to form from a position of little inter-organization or social mass. Hence, understanding how collective action arises in such projects offers useful insights for other charitable contexts. For example, a local offline fundraising initiative might also consider how they communicate information supporting impact, information supporting morality, and information supporting external relationships. Alternatively, where insights are not generalizable this helps to bound and position charitable crowdfunding and to elucidate its impact as a web-based socio-technological ecosystem.

The focus on charitable crowdfunding also presents limitations, notably as regard generalizing to other forms of crowdfunding. We therefore call for greater exploration regarding how individual motivations are balanced with shared agendas and collective objectives in crowdfunding communities, not just within charitable contexts but also in rewards-based crowdfunding, equity crowdfunding, and peer-to-peer lending. These future explorations are necessary to ensure the reliability of findings and the transferability of analytical trends and patterns. This stream of

research is vast, however it is necessary to increase the potential alignment of IT with individual and collective goals across a variety of contexts and maximize the social potential of the paradigm.

#### 6. Summary

This study has performed a grounded theory case study of charitable crowdfunding campaigns on Pledgie.com to investigate the types of collective objectives most capable of balancing individual-level goals in charitable crowdfunding. Content analysis was performed on 40 individual fundraising campaigns, randomly sampled across four quartiles of fundraising success. This content analysis identified three types of information disclosed by campaign administrators that influence the collective evaluation of a campaign, specifically information supporting impact, information supporting morality, and information supporting external relationships. These three types of information were related back to existing research on the theory of collective action, suggesting this information plays an important role in appealing to collective values and objectives. These findings have important implications for future research and for practice. In particular, we argue crowdfunding behavior must not be oversimplified in a rush for theoretical reduction. The tendency should be resisted to view fundraising on crowdfunding platforms as solely the result of unstructured, de-centralized, and democratic decision-making by autonomous individuals. Rather, it should be viewed as a technologically-enabled means of allowing individuals to combine resources, without necessarily demanding high levels of existing inter-organization or social mass.

### Acknowledgement

This research was funded by a grant from The Lewis Charitable Foundation (California).

#### References

- Agrawal, A., Catalini, C., and Goldfarb, A. "Crowdfunding: Geography, Social Networks and the Timing of Investment Decisions". Journal of Economics and Management Strategy, Vol. 24, No. 2: 253-274, 2015
- Altinkemer, K., De, P., Ozcelik, Y., and Ozdemir, Z. "Fundraising and the Internet". In Americas Conference on Information Systems. Keystone, Colorado, 2007.
- Andreoni, J. "Impure altruism and donations to public goods: a theory of warm-glow giving". The Economic Journal, Vol. 100, No. 401: 464-477, 1990.
- Ashforth, B. E., & Mael, F. "Social identity theory and the organization". Academy of Management Review, Vol. 14, No. 1: 20-39, 1989.
- Beaulieu, T., and Sarker, S. "Discursive Meaning Creation in Crowdfunding: A Socio-Material Perspective". International Conference for Information Systems, Milan, Italy, 2013.
- Benbunan-Fich, R., & Koufaris, M. "Public contributions to private-collective systems: the case of social bookmarking". Internet Research, Vol. 23, No. 2: 183-203, 2013.
- Berger, S. C. & Gleisner, F. "Emergence of Financial Intermediaries in Electronic Markets: The Case of Online P2P Lending". Business Research, Vol. 2, No. 1: 39-65, 2009.
- Boezeman, E. J., & Ellemers, N. "Volunteering for charity: pride, respect, and the commitment of volunteers". Journal of Applied Psychology, Vol. 92, No. 3: 771-785, 2007.
- Briers, B., Pandelaere, M., & Warlop, L. "Adding exchange to charity: a reference price explanation". Journal of Economic Psychology, Vol. 28, No. 1: 15-30, 2007.
- Brown, R. "Social identity theory: Past achievements, current problems and future challenges". European Journal of Social Psychology, Vol. 30, No. 6: 745-778, 2000.
- Bryant, A. "Re-grounding grounded theory". Journal of Information Technology Theory and Application, Vol. 4, No. 1: 25-42, 2002.
- Burtch, G., Ghose, A., & Wattal, S. "An Empirical Examination of the Antecedents of Contribution Patterns in Crowdfunded Markets". International Conference for Information Systems, Shanghai, China, 2011.
- Burtch, G., Di Benedetto, C. A., and Mudambi, S. M. "Leveraging Information Systems for Enhanced Product Innovation". In F.J. Martínez-López, ed., Handbook of Strategic E-Business Management. Berlin: Springer, pp. 211-216, 2014.
- Cano Murillo, D. E., Kang, J., & Yoon, S. "Factors influencing pro-social consumer behavior through non-profit organizations". Internet Research, Vol. 26, No. 3: 626-643, 2016.
- Charmaz, K. Constructing grounded theory: A practical guide through qualitative analysis. Sage, Thousand oaks, California, USA, 2006.
- Ciffolilli, A. "Phantom authority, self-selective recruitment and retention of members in virtual communities: The case of Wikipedia". First Monday, Vol. 8, No. 12, 2003.
- Cordova, A., Dolci, J., & Gianfrate, G. "The determinants of crowdfunding success: Evidence from technology

- projects". Procedia-Social and Behavioral Sciences, Vol. 181, 115-124, 2015.
- Drury, J., & Reicher, S. "Collective action and psychological change: The emergence of new social identities". British Journal of Social Psychology, Vol. 39, No. 4: 579-604, 2000.
- Duarte, J., Siegel, S., and Young, L. "Trust and Credit: The Role of Appearance in Peer-to-Peer Lending". Review of Financial Studies, Vol. 25, No. 8: 2455-2483, 2012.
- Ducheneaut, N. "Socialization in an open source software community: A socio-technical analysis". Computer Supported Cooperative Work, Vol. 14, No. 4: 323-368, 2005
- Eckel, C. C., & Grossman, P. J. (1996). Altruism in anonymous dictator games. Games and Economic Behavior, Vol. 16, No. 2: 181-191.
- Esteves, J., Ramos, I., & Carvalho, J. Á. "Use of grounded theory in information systems area: An exploratory analysis". European Conference on Research Methodology for Business and Management, Reading, UK, 2002.
- Feeny, D., Berkes, F., McCay, B. J., & Acheson, J. M. "The tragedy of the commons: twenty-two years later". Human ecology, Vol. 18, No. 1, 1-19, 1990.
- Ferguson, E., Taylor, M., Keatley, D., Flynn, N., & Lawrence, C. "Blood donors' helping is driven by warm glow: more evidence for the blood donor benevolence hypothesis". Transfusion, 52, No. 10: 2189-2200, 2012.
- Gelfond, S. H., and Foti, A. D. "Us\$500 and a Click: Investing the Crowdfunding" Way. Journal of Investment Compliance, Vol. 13, No. 4: 9-13, 2012.
- Gerber, E. M., & Hui, J. (2013). "Crowdfunding: Motivations and deterrents for participation". ACM Transactions on Computer-Human Interaction (TOCHI), Vol. 20, No. 6: 34.
- Giudici, G., Nava, R., Rossi Lamastra, C., and Verecondo, C. "Crowdfunding: The New Frontier for Financing Entrepreneurship?" Working Paper Department of Management, Production and Industrial Engineering, Politecnico di Milano. Retrieved 10/10/2014 from http://papers.ssrn.com/sol3/Delivery.cfm/SSRN\_ID2157429\_code174108.pdf?abstractid=2157429&mirid=1), 2012.
- Gleasure, R., & Feller, J. "Emerging technologies and the democratisation of financial services: A metatriangulation of crowdfunding research". Information and Organization, Vol. 26, No. 4), 101-115, 2016a.
- Gleasure, R., & Feller, J. "A Rift in the Ground: Theorizing the Evolution of Anchor Values in Crowdfunding Communities through the Oculus Rift Case Study". Journal of the Association for Information Systems, Vol. 17, No. 10: 708-736, 2016b.
- Gleasure, R., & Feller, J. "Does Heart or Head Rule Donor Behaviors in Charitable Crowdfunding Markets?" International Journal of Electronic Commerce, Vol. 20, No. 4, 499-524, 2016c.
- Gleasure, R., O'Reilly, P., & Cahalane, M. "Inclusive technologies, selective traditions: a socio-material case study of crowdfunded book publishing". Journal of Information Technology, Vol. 32, No. 4, 326-343, 2017.
- Gleasure, R., & Morgan, L. "The pastoral crowd: Exploring self-hosted crowdfunding using activity theory and social capital". Information Systems Journal, Vol. 28, No. 3, 489-515, 2018.
- Greiner, M. E. & Wang, H. "The Role of Social Capital in People-to-People Lending Marketplaces". International Conference for Information Systems, Phoenix, USA, 2009.
- Guo, W., Straub, D., Han, X., & Zhang, P. "Understanding Vendor Preference in the Crowdsourcing Marketplace: The Influence of Vendor-Task Fit and Swift Trust". Journal of Electronic Commerce Research, Vol. 18, No. 1, 1-17, 2017.
- Hardin, G. "The Tragedy of the Commons". Science, Vol. 162, 243-1248, 1968.
- Hargrave, T. J., & Van de Ven, A. H. "A collective action model of institutional innovation". Academy of Management Review, Vol. 31, No. 4: 864-888, 2006.
- Heath, H., & Cowley, S. "Developing a grounded theory approach: a comparison of Glaser and Strauss". International Journal of Nursing Studies, Vol. 41, No. 2: 141-150, 2004.
- Hedström, P., & Swedberg, R. "Social mechanisms". Acta Sociologica, Vol. 39, No. 3: 281-308, 1996.
- Heller, L. R., and Badding, K. D. "For Compassion or Money? The Factors Influencing the Funding of Micro Loans". The Journal of Socio-Economics, Vol. 41, No. 6: 831-835, 2012.
- Herzenstein, M., Sonenshein, S., and Dholakia, U. M. "Tell Me a Good Story and I May Lend You Money: The Role of Narratives in Peer-to-Peer Lending Decisions". Journal of Marketing Research, Vol. 48(Special Issue): S138-S149, 2011.
- Hobbs, J., Grigore, G., & Molesworth, M. "Success in the management of crowdfunding projects in the creative industries". Internet Research, Vol. 26, No. 1: 146-166, 2016.
- Hogg, M. A., & Terry, D. I. "Social identity and self-categorization processes in organizational contexts". Academy of Management Review, Vol. 25, No. 1: 121-140, 2000.
- Howe, J. Crowdsourcing: How the power of the crowd is driving the future of business, Random House, UK, 2008.
- Hsieh, H. F., & Shannon, S. E. "Three approaches to qualitative content analysis". Qualitative Health Research, Vol.

- 15, No. 9: 1277-1288, 2005.
- Hustinx, L., & Lammertyn, F. "Collective and reflexive styles of volunteering: A sociological modernization perspective". Voluntas: International Journal of Voluntary and Nonprofit Organizations, Vol. 14, No. 2: 167-187, 2003.
- Jenkins, J. C. "Resource mobilization theory and the study of social movements". Annual Review of Sociology, Vol. 9, pp. 527-553, 1983.
- Joenssen, D. M., Michaelis, A., & Müllerleile, T. "A Link to New Product Preannouncement: Success Factors in Crowdfunding". Available at SSRN: https://ssrn.com/abstract=2476841, 2014.
- Karlan, D., & Zinman, J. "Observing unobservables: Identifying information asymmetries with a consumer credit field experiment". Econometrica, Vol. 77, No. 6: 1993-2008, 2009.
- King, G. "How not to lie with statistics: Avoiding common mistakes in quantitative political science". American Journal of Political Science, Vol. 30, No.3: 666-687, 1986.
- Koch, J. A. & Siering, M. Crowdfunding Success Factors: The Characteristics of Successfully Funded Projects on Crowdfunding Platforms. European Conference on Information Systems, Muenster, Germany. 2015.
- Lasrado, L. A., and Lugmayr, A. "Crowdfunding in Finland--a New Alternative Disruptive Funding Instrument for Businesses". Proceedings of International Conference on Making Sense of Converging Media, ACM, New York, 2013.
- Lehner, O. M. "Crowdfunding Social Ventures: A Model and Research Agenda". Venture Capital, Vol. 15, No. 3: 289-311, 2013.
- Lerner, M. J. "The justice motive: Some hypotheses as to its origins and forms". Journal of Personality, Vol. 45, No. 1: 1-52, 1977.
- Ley, A., and Weaven, S. "Exploring Agency Dynamics of Crowdfunding in Start-up Capital Financing". Academy of Entrepreneurship Journal, Vol. 17, No. 1: 85-110, 2011.
- Li, D. C. "Online social network acceptance: a social perspective". Internet Research, Vol. 21, No. 5: 562-580, 2011.
- Liu, Y., Chen, R., Chen, Y., Mei, Q., and Salib, S. "I Loan Because...": Understanding Motivations for Pro-Social Lending". In Proceedings of the fifth ACM international conference on Web search and data mining. Seattle, Washington, USA: ACM, pp. 503-512, 2012.
- Livingston, L. S., and Glassman, T. "Creating a New Type of Student Managed Fund Using Peer-to-Peer Loans". Business Education & Accreditation, Vol. 1, pp. 1-14, 2009.
- Lukács, L. "The information society and the Church". Internet Research, Vol. 7, No. 1: 16-26, 1997.
- Ly, P., and Mason, G. "Individual Preferences over Development Projects: Evidence from Microlending on Kiva". Voluntas, Vol. 23, No. 4: 1036-1055, 2012.
- Mallett, R. K., Huntsinger, J. R., Sinclair, S., & Swim, J. K. "Seeing through their eyes: When majority group members take collective action on behalf of an outgroup". Group Processes & Intergroup Relations, Vol. 11, No. 4: 451-470, 2008.
- Maxwell, J. (1992). Understanding and validity in qualitative research. Harvard Educational Review, 62(3): 279-301. McCarthy, J. D., & Zald, M. N. "Resource mobilization and social movements: A partial theory". American Journal of Sociology, Vol. 82, No. 6: pp.1212-1241, 1977.
- Miller, D. A., Cronin, T., Garcia, A. L., & Branscombe, N. R. "The relative impact of anger and efficacy on collective action is affected by feelings of fear". Group Processes & Intergroup Relations, Vol. 12, No. 4: 445-462, 2009.
- Mingers, J. "Combining IS research methods: towards a pluralist methodology". Information Systems Research, Vol. 12, No. 3: 240-25, 2001.
- Mollick, E. "The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing, Vol. 29, No. 1), 1-16, 2014.
- Moodie, M. "Microfinance and the Gender of Risk: The Case of Kiva.Org". Signs, Vol. 38, No. 2: 279-302, 2013.
- Nevin, S., Gleasure, R., O'Reilly, P., Feller, J., Li, S., & Christoforo, J. "Large crowds or large investments? how social identity influences the commitment of the crowd". European Conference on Information Systems, Guimarães, Portugal, 2017.
- Olleros, F.X. "Learning to trust the crowd: Some lessons from Wikipedia". International MCETECH Conference on e-Technologies, Montreal, Quebec, Canada, 2008.
- Olson, M., & Olson, M. "The logic of collective action: public goods and the theory of groups". Cambridge, MA: Harvard University Press, 2009.
- Ordanini, A., Miceli, L., Pizzetti, M., and Parasuraman, A. "Crowd-Funding: Transforming Customers into Investors through Innovative Service Platforms". Journal of Service Management, Vol. 22, No. 4: 443-470, 2011.
- Ostrom, E. "Collective action and the evolution of social norms". Journal of Natural Resources Policy Research,

- 6(4), 235-252, 2014.
- Patton, M. Q. (2002). Qualitative research and evaluation methods. Sage, California.
- Polletta, F., & Jasper, J. M. "Collective identity and social movements". Annual Review of Sociology, Vol. 27, pp. 283-305, 2001.
- Posegga, O., Zylka, M. P., & Fischbach, K. "Collective dynamics of crowdfunding networks". 48th Hawaii International Conference on System Sciences (HICSS), Hawaii, 2015.
- Pötzsch, S., and Böhme, R. "The Role of Soft Information in Trust Building: Evidence from Online Social Lending". The 3rd International Conference on Trust and Trustworthy Computing. Berlin, Germany: Springer-Verlag, pp. 381-395, 2010.
- Riggins, F. J., and Weber, D. M. "A Model of Peer-to-Peer (P2p) Social Lending in the Presence of Identification Bias". In Proceedings of the 13th International Conference on Electronic Commerce. Liverpool, United Kingdom: ACM, pp. 1-8, 2012.
- Rossi, M. "The New Ways to Raise Capital: An Exploratory Study of Crowdfunding". International Journal of Financial Research, Vol. 5, No. 2: 8-18, 2014.
- Segerberg, A., & Bennett, W. L. "Social media and the organization of collective action: Using Twitter to explore the ecologies of two climate change protests". The Communication Review, Vol. 14, No. 3: 197-215, 2011.
- Sinanan, J. "Lenders, Borrowers and Fellows: Personal Narrative and Social Entrepreneurship in Online Microfinance". In Proceedings of the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group: Design: Open 24/7. Melbourne, Australia: ACM, pp. 293-296, 2009.
- Smith, R. W., Faro, D., and Burson, K. A. "More for the Many: The Influence of Entitativity on Charitable Giving". Journal of Consumer Research, Vol. 39, No. 5: 961-976, 2013.
- Smith, H. J., & Ortiz, D. J. "Is it just me? The different consequences of personal and group relative depravation". In Relative deprivation: Specification, development, and integration, I. Walker and H.W. Smith (eds. "Cambridge University Press, Cambridge, UK, pp. 91-115, 2002.
- Sorensen, I. E. "Crowdsourcing and Outsourcing: The Impact of Online Funding and Distribution on the Documentary Film Industry in the UK". Media Culture & Society, Vol. 34, No. 6: 726-743, 2012.
- Star, S. L., & Griesemer, J. R. "Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology". Social Studies of Science, Vol. 19, No. 3: 387-420, 1989.
- Strauss, A. L., & Corbin, J. M. "Basics of qualitative research: Grounded theory procedures and techniques" (2nd ed.), Thousand Oaks, CA: Sage, 1998.
- Timmermans, S., & Tavory, I. "Theory construction in qualitative research from grounded theory to abductive analysis". Sociological Theory, Vol. 30, No. 3: 167-186, 2012.
- Van Zomeren, M., Postmes, T., & Spears, R. "Toward an integrative social identity model of collective action: a quantitative research synthesis of three socio-psychological perspectives". Psychological Bulletin, Vol. 134, No. 4: 504-535, 2008.
- Von Krogh, G., Spaeth, S., & Lakhani, K. R. "Community, joining, and specialization in open source software innovation: a case study". Research Policy, Vol. 32, No. 7: 1217-1241, 2003.
- Warren, S., Gleasure, R., O'Reilly, P., Feller, J., Li, S., & Christoforo, J. Where is the crowd? 12th International Conference on Design Science Research in Information Systems and Technology, Karlsruhe, Germany, 2017.
- Yang, Y., Wang, H. J., & Wang, G. "Understanding crowdfunding processes: a dynamic evaluation approach". Journal of Electronic Commerce Research, Vol. 17, No. 1, 47-64, 2016.
- Zheng, H., Xu, B., Wang, T., & Xu, Y. "An empirical study of sponsor satisfaction in reward-based crowdfunding". Journal of Electronic Commerce Research, Vol. 18, No. 3, 269-285, 2017.
- Zvilichovsky, D., Inbar, Y., & Barzilay, O. "Playing both sides of the market: Success and reciprocity on crowdfunding platforms". International Conference on Information Systems, Milan, 2015.