### With a little help from my friends: The role of online creator-fan communication channels in the success of creative crowdfunding campaigns

Tosatto, J., Cox, J. & Nguyen, T.

Author post-print (accepted) deposited by Coventry University's Repository

#### Original citation & hyperlink:

Tosatto, J, Cox, J & Nguyen, T 2022, 'With a little help from my friends: The role of online creator-fan communication channels in the success of creative crowdfunding campaigns', Computers in Human Behavior, vol. 127, 107005. https://dx.doi.org/[DOI]

DOI 10.1016/j.chb.2021.107005 ISSN 0747-5632

Publisher: Elsevier

NOTICE: this is the author's version of a work that was accepted for publication in Computers in Human Behavior. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published in Computers in Human Behavior, 127, (2022) DOI: 10.1016/j.chb.2021.107005

© 2021, Elsevier. Licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International <u>http://creativecommons.org/licenses/by-nc-nd/4.0/</u>

Copyright © and Moral Rights are retained by the author(s) and/ or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This item cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder(s). The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.

This document is the author's post-print version, incorporating any revisions agreed during the peer-review process. Some differences between the published version and this version may remain and you are advised to consult the published version if you wish to cite from it.

## With A Little Help From My Friends: The role of online creator-fan communication channels in the success of creative crowdfunding campaigns

Authors: Jann Tosatto, University of Portsmouth, Vrij University Amsterdam; Dr Joe Cox,

University of Portsmouth; Dr Thang Nguyen, Coventry University

#### Declarations of interest: none

**Funding Source:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Keywords: Crowdfunding, Social Ties, Social Capital, Computer Mediated Communication,

Creative and Cultural Industry, Direct to Fan

#### **Highlights:**

- In creative and cultural industry crowdfunding there is a hierarchy of creator-fan communication channels.
- Channels with higher message intimacy reflect stronger social ties and generate higher fan-to-funder conversions.
- Email is the most effective channel for D2F crowdfunding, followed by Facebook.
   Twitter is least effective.
- A variety of other factors also contributes, including objective measures of underlying founder and campaign quality.
- Utilising quantile regression we show that better performing campaigns do a better job at maintaining and monetising strong ties through email.

#### Abstract:

Over the past decade, the creative and cultural industries (CCI) have embraced Direct-to-Fan (D2F) crowdfunding as a new and innovative mechanism to finance their independent creative endeavours. We analyse a private dataset of crowdfunding campaigns, comprising *ex-ante* community metrics and rich qualitative measures to determine how the social ties embedded within multiple coexisting online creator-fan communication channels impact the conversion of fans into campaign funders. Using a combination of negative binomial and logistic regressions, we find evidence of a clear hierarchy of importance of online communication channels, with email representing the most effective medium, followed by Facebook, and Twitter the least important. This finding both supports the contention that stronger social ties better relied upon for financial support, and shines a light on the importance of email, an otherwise under-considered factor in crowdfunding performance. A quantile regression analysis further demonstrates that the importance of social ties maintained through email tends to be relatively greater among better-performing campaigns, while for poorly performing campaigns the importance of the length of written funding pitch is greater. We conclude by offering several thoughts on how CCI creators can manage their online fan networks to develop stronger social ties and thus maximise the results of future D2F activities.

# With A Little Help From My Friends: The role of online creator-fan communication channels in CCI crowdfunding campaigns.

#### 1 Introduction

Crowdfunding represents "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 ... in order to support initiatives for specific purposes" (Lambert and Schwienbacher 2010). Over the last decade, the practice has become an established and increasingly important mechanism for the financing of Creative and Cultural Industry (CCI) projects (Lazzaro and Noonan 2020), particularly those which might struggle to find financing through other more conventional channels (Tosatto et al. 2019). Following the emergence of popular and successful rewards-based crowdfunding platforms Indiegogo (2008) and Kickstarter (2009), within the space of five years a single United States based crowdfunding platform (Kickstarter) was responsible for more arts funding than the annual US Government's National Endowment for the Arts (Boyle 2013). Within the broader CCI, crowdfunding is a prominent component of the increasingly important Direct-to-Fan (D2F) business model, so-called due to the importance of the CCI founder's relationship to their three "F's" – Fans, Friends, and Family – in driving sales (Tessler and Flynn 2015; Hughes et al. 2016; Dumbreck and McPherson 2016).

While CCI creators have long found ways to communicate with their fans – initially through fan clubs, newsletters and the like – the internet has presented an opportunity for creators to contact, communicate with, and coordinate their fans on a scale not previously possible. As early as 2003 more than 40% of online paid artists were using the internet or email to keep in touch with fans of their art (Madden 2004). With the changes brought about by Web 2.0, a plethora of bi and omnidirectional online communication channels arose (O'Reilly 2007), all of which enabled not just communication between creators and their fans, but also by and between fans themselves, facilitating the creation of vibrant online fan communities. This

creator-fan communication is the foundation upon which successful CCI crowdfunding campaigns, and D2F more generally, is based.

While various authors have considered the impact of social media, social ties, and social capital on the outcomes of crowdfunding campaigns, they typically limit themselves by reference to a single empirical measure - such as the number of Facebook friends of the a founder (e.g. Mollick 2014) or by reference to social capital internal to the crowdfunding platform itself (e.g. Zheng et al. 2014). Although it may be convenient to assume that the breadth of online social interactions of a founder can be summarised by a single variable, we consider that the fan networks of CCI creators and the social ties of which they are composed are more complex and diverse than can be adequately represented by a single measure of online social connectedness. Indeed, our understanding of the nature of social ties itself is typically stratified into various categories reflecting the underlying nature of interactions, from deep to shallow and even latent social ties (Granovetter 1973, 1983; Wellman and Wortley 1990; Haythornthwaite 2002), as well as bridging and bonding social capital (Putnam 2000; Woolcock and Narayan 2000; Keeley 2007). The relevance of the multidimensional nature of social ties has been noted in the context of by Borst et al. (2018), who observe the importance of strong, weak, and latent ties to successful CCI crowdfunding outcomes. For this reason, we take a broader view that the true breadth and depth of creator-fan networks are more accurately represented by a selection of digital networks that better represent the true variety of the creator's underlying social ties.

In this paper, we analyse a private dataset of crowdfunding campaigns, comprising *ex-ante* community metrics and rich qualitative measures to determine how the social ties embedded within multiple coexisting online creator-fan communication channels impact the conversion of fans into campaign funders. Our study makes a unique contribution to the literature by assessing the relationship between the e-mail, Facebook and Twitter connections of founders

and the ultimate outcome of their crowdfunding campaigns.

#### 2. Literature Review and Hypothesis Development

#### 2.1. Social ties in crowdfunding

A social tie exists between people who interact in one way or another, be that in person or through digital networks. The strength of a social tie is determined by a combination of the time, emotional intensity, intimacy, and reciprocity which characterise the tie (Granovetter 1973). We can use this notion to differentiate between people who are family or close friends (strong ties) from mere acquaintances (weak ties), and observe that our weak tie networks are more dispersed and less dense than strong tie networks (Granovetter 1983). Both types of network are important; strong tie networks provide emotional and financial support, companionship, and personal services (Wellman and Wortley 1990), while weak tie networks perform other roles, such as in as the wide movement (dispersal) of information. Along these lines, Haythornthwaite (2002) observes the value of weak ties in the "inclusion and empowerment of peripheral participants" and "providing access to a wider set of contacts" while also discussing a further category of tie –a latent tie –which is "available technically but that has not yet been activated by social interaction" (pp 388-9). Within and among CCI participants the importance of social ties has been observed in various contexts and appears to be influential within all CCI industry verticals.

Various authors have also noted the importance of social ties in the wider crowdfunding context. For example, Jian and Shin (2015) observe the importance of friends and family in relation to crowdfunded journalism; Muller et al. (2016) examine organisational crowdfunding and find that campaigns with more co-founders and, by extension, larger social tie networks, are more likely to reach their funding targets; Zheng et al. (2018) find that funders with high level of social ties to the founder and other funders are more likely to contribute; Polzin et al. (2018) find that funders with social ties (weak or strong) to the campaign founder are more

likely to rely on information about the founder, whereas funders without those ties are more likely to rely on information about the campaign; and Simon et al. (2019) find that closeness and frequency increased the contribution likelihood. In the context of CCI crowdfunding, Borst et al. (2018) note the importance of strong, weak, and latent ties, finding all contribute to successful CCI crowdfunding outcomes in the Netherlands.

#### 2.2 Social ties and online creator – fan networks

In the context of CCI crowdfunding CCI founders and their fans can communicate across a variety of digital networks, each of those networks may comprise social ties of varying strengths (Gilbert and Karahalios 2009). In this section we discuss the relative strength of social ties embedding in the three most important online communication mediums in CCI D2F crowdfunding:email, Facebook, and Twitter.

Among these three channels, email is generally argued to be associated with maintaining strong tie networks. Indeed, Email carries the most detailed and time-consuming messages to read and write. Because of its nature, email requires that personal information is exchanged (email addresses) and that the fan positively opts-in to receiving long-form personally addressed messages in their own personal/private digital space (their inbox) at the discretion of the sender (although it is worth noting that longer messaging is also possible through Facebook and Twitter direct messaging, even if this is a less-common usage of the platforms). Evidence from literature is consistent with the contention. For instance, it shows that email users have been found to have deeper social tie networks by comparison to heavy chat users (Zhao 2006), and email has been shown to be especially useful for students in maintaining high school friendships (Kraut et al. 2006). Email is even considered to be superior to phone or in-person communication for individuals with large networks (Boase 2006). The marketing literature argues that email empowers consumers (Hartemo 2016) and remains a more effective direct marketing channel for acquiring new customers than Facebook and Twitter combined

(Aufrieter et. al, 2014). Personalisation of email also remains an effective technique for improving customer acquisition and retention (Sahni et. al. 2018). Facebook is generally associated with weak social ties (Steinfield et al. 2008; Burke et al. 2011), but not exclusively (Ellison et al. 2007, 2014). Of the three channels, Twitter's broadcast nature and its limited public message length (140 characters at the time of this study - this has been increased to 280 characters in late 2017) results in communications with reduced intimacy. The fact that the majority of ties on Twitter are both unidirectional in nature and low in cost to maintain leads Takhteyev et al. (2012) to conclude that it also engenders predominately weak ties. Along similar lines, both Virk (2011) and Hofer and Aubert (2013) consider that, as Twitter is content rather than relationship-centric, and following someone on Twitter does not require any personal connection, it should thus be classified it as a weak tie network (Lin et al. 2016).

Intimacy in communication, a trait typically associated with strong-tie relationships, is higher on email than Facebook (Yang et al. 2014), which itself is higher than on Twitter (Waterloo et al. 2018). International students have been shown to perceive email as being more intimate than Facebook in maintaining relationships with old friends and family (Yang et al. 2014). Similarly, Barkhuus and Tashiro (2010) observe that Facebook supports communication between people with weaker ties than email since it is less intimate and does not require the exchange of personal information. While the argument can be made that reduced intimacy results from the intermingling of personal and impersonal email in most people's inboxes (such as marketing communications from companies, the selling of commercial email mailing lists, and unsolicited "spam" emails), email users have always been able to easily ignore impersonal emails. This can be achieved dynamically and privately, by directing their attention away from senders or subjects in a way that does not notify and confront them as a de-friending (Facebook) of unfollowing (Twitter) would do, or by simply unsubscribing.

#### 2.3. Crowdfunding and online creator-fan communication channels.

Literature discussing the broader crowdfunding phenomena widely reports a positive correlation between the Facebook networks of founders and the binary success/failure outcome of associated crowdfunding campaigns (see, for example, Mollick 2014; Zheng et al. 2014; Kuppuswamy and Bayus 2015; Colombo et al. 2015, among others). While much crowdfunding research tends to implicitly assume that social networks are somewhat interchangeable in regard to their impacts on outcomes (Hong et al. 2015), a limited number of authors have looked beyond Facebook to better understand other online communication factors that might potentially drive crowdfunding contributions. Unfortunately, however, their findings can often be inconsistent or contradictory.

Of those authors Byrnes et al. (2014) examine how online engagement and effort affects the niche field of crowdfunding of scientific research, noting that email, Facebook, and Twitter all contribute to online engagement, and that Twitter and Facebook network size influences project success. Hekman and Brussee (2013) examine Kickstarter projects encompassing both the CCI and those with an entrepreneurial focus, finding that higher campaign targets require exponentially higher click-through rates in order to achieve success. They also find that clicks sourced from Facebook, Twitter contribute differently to the funding target, and that click-through activities originating from Facebook were more than twice as effective as those from Twitter. Fietkiewicz et al. (2018) note the significance of the interaction between Facebook, Youtube and Linkedin on crowdfunding outcomes, however surprisingly do not find any relationship with Facebook when measured on its own. Other authors find that greater embeddedness of Twitter users can result in a disproportionate increase in crowdfunding results (Hong et al. 2015), and that the number of social media accounts of the project founder and the project itself are influential in respect of both number of funders and the funding total; however counterintuitively they also find that the social reach of these accounts is not

significant (Clauss et al. 2020). It is interesting to note that email is generally an underconsidered channel in crowdfunding research, given its general pervasiveness and our own findings (later in this paper) regarding its importance. We attribute this phenomenon to the ease of automatically gathering large datasets of (semi-) public data from social networks such as Facebook, Twitter etc. through the use of screen scraping tools (see, for example Huhtamäki et. al. 2015), whereas datasets including reliable email measures are generally privately held and not typically shared.

Taking the relationship between crowdfunding success and online communication a step further, other academics have integrated online communication metrics (Facebook friends and/or Twitter followers, Facebook shares, Twitter tweets) along with other factors into machine learning tools designed to predict Kickstarter campaign success/failure outcomes (Etter et al. 2013; Greenberg et al. 2013; Chen et al. 2014; Li et al. 2016). In doing so they report a significant degree of accuracy, especially when post-launch campaign data is included in their models. However, while illuminating, these results are of limited value in addressing our research focus as they only report the aggregate results of their computer-generated models, and do not explicitly estimate the marginal influence of each of the respective variables upon campaign outcomes as we do in this study. To our knowledge, no published work accounts for the full range of communication channels with the level of detail that we use in this study.

#### 2.4. Hypothesis Development

Combining the arguments from literature, we contend that email represents the strongest social ties and is the most intimate digital channel commonly used in CCI D2F crowdfunding. This argument is consistent with Marsden and Campbell (1984), who find that a measure of closeness or intensity is the best indicator of strength of ties, as well as Freeman and Brinkley (2014), who find that increased message length is typically associated with greater levels of intimacy. Conversely, Twitter, which as a broadcast medium is the least intimate digital

medium used in CCI D2F crowdfunding, and which carries the shortest messages, is expected to have the lowest proportion of strong ties. Situated between email and Twitter is Facebook, which is predominately used as a group communication medium, with messages typically longer than those found on Twitter, but less detailed or intimate than those sent through email. Thus, it is expected to have a lower proportion of strong ties than email, but will have a larger proportion of "stronger" weak ties than Twitter (Phua et al. 2017; Valenzuela et al. 2018). The relationship hierarchy between the three digital mediums is shown in Figure 1 and a visual demonstration of the relative differences in message length and intimacy is shown in Figure 2.

#### [Insert Figures 1 and 2 about here]

While this tie-strength hierarchy (email > Facebook > Twitter) appears relatively straightforward, it is nevertheless relevant to observe that in practice many users of digital networks will choose to utilise a variety of channels to maintain their various social ties, selecting platforms whose features and purposes meet their needs (Anderson and Jiang 2018, Agosto et al. 2012). Interestingly overlap between these channels is uncommon as individual users who use more than one channel tend to segregate the various channels for different functional purposes (Guy et al. 2008; Buccafurri et al. 2015). The variety of platforms used has been found to vary according to factors such as age, gender, education, etc.(Kim et al. 2007) and also due to the passage of time (Smith and Anderson 2018), thus in the context of this research each channel can best be regarded as an amalgam of social ties of varying proportions.

Since strong (and, by extension, "stronger" weak) ties are more usefully relied upon for the provision of financial support (Wellman and Wortley 1990; Boase 2006; Keeley 2007; Ryan et al. 2008; Hawkins and Maurer 2010) we hypothesise that, holding all other factors equal:

H1: The CCI founder's email network associates with stronger social ties than their Facebook network and will have a stronger association with the financial performance

of crowdfunding campaigns than their Facebook network; and

H2: The CCI founder's Facebook network associates with stronger social ties than their Twitter network and will have a stronger association with the financial performance of crowdfunding campaigns than their Twitter network;

As an extension to our first two hypotheses, we also seek to examine whether better performing campaigns will do a better job of monetising strong ties through email. Our motivation for this is twofold: initially it is based in the experiences of the Obama 2008 and 2012 election campaigns where a widely reported factor that differentiated the successful Obama campaigns was their superior use of online communication channels to mobilise voters, something which resulted in significantly higher fundraising amounts received from individuals (see, for example, Bimber 2014). Subsequently it is also informed by marketing literature that finds that both the nuances of market segment spending patterns can be better highlighted by examining the variations between quantiles (see, for example, Lew and Ng 2012) and also that email marketing that specifically empowers the consumer can be a highly effective channel (Hartemo M 2016). Based on this we further hypothesis that, holding all other factors equal:

H3: Better performing campaigns will do a better job of monetising strong ties through email than less well-performing campaigns.

#### 3. Data and Method

#### 3.1. Data Sample.

In this paper we examine the relationship between the online creator-fan communication channels commonly used by CCI founders to interact with online fan communities, and the impact of those channels on the financial outcomes of their crowdfunding campaigns. Assuming that the online creator-fan relationship is complex, with creators and fans electing to interact through a variety of channels chosen to reflect both their underlying social ties and their communication preferences, we believe it is important not to limit our research to a single

channel. Instead we look at the three most relevant channels (specifically email, Facebook, and Twitter) to develop a more complete picture of this relationship. The analysis of these channels is of particular relevance to CCI crowdfunding as its founders typically utilise all of them to communicate directly and personally with their online fan communities. Therefore, the success of their D2F crowdfunding campaigns is likely to be significantly impacted by the effectiveness with which they leverage these channels to convert their crowd of "fans, friends, and family" into funders.

The dataset used in our analysis was provided by the rewards-based crowdfunding platform PledgeMusic (www.pledgemusic.com), which operated as a specialised music crowdfunding platform from 2009 to 2019. In that decade it hosted thousands of crowdfunding campaigns and raised millions of dollars for musicians, and is unique in having recorded (and made available to us) detailed observations relating to online communication reach for a large number of campaigns (n=370) at a point immediately prior to the start of the campaign. The *ex-ante* timing of these observations is critical to our study, as it ensures that it does not suffer from the issue, common to many other studies, that relevant online metrics (such as number of Facebook friends) are gathered at some point during or after the campaign. This inevitably results in the introduction of endogeneity into these studies in relation to these metrics, something we are fortunately able to avoid.

The decision to focus on the relationship between the use of online fan communications channels and crowdfunding outcomes was made based on the observation that online communication channels generally (and social media platforms more specifically) have been acknowledged to be important determinants of success for CCI projects (Potts et al. 2008). They also represent an increasingly important means by which creatives can communicate with their fans; as of late-2018, six of the top ten Twitter accounts by number of followers are popular musicians and six of the top ten celebrity accounts on Facebook are also popular

musicians.

The dataset, consisting of 370 campaigns initiated by the same number of unique musicians/bands, completed between 2009 and 2015, was constrained to campaigns that met the following criteria:

1. Online communication channel metrics were reliably recorded, consisting of email mailing- list database size (i.e., number of addresses, self-reported by the founder), Facebook (number of "likes", gathered directly from the Facebook platform) and Twitter (number of "followers", gathered directly from the Twitter platform);

2. Quality metrics were available; Due to the significant risk that a musician's previous experience would impact both their online channel reach as well as their crowdfunding results we only analyse campaigns for which musician quality and experience measures are available. These measures (Scouted and Quality Rating) reflect the musician's prior reputation within the industry and the platform's assessment of combined musician/project quality respectively.

3. Only campaigns that raised less than \$50,000USD were included. This upper constraint was imposed as (i) a handful of very successful outliers benefited from professional marketing and campaign support and thus were not representative of the vast majority of campaigns, and (ii) the amount itself was chosen as a convenient round integer more than five standard deviations from the mean. Other than the criteria outlined above, no further constraints were applied, resulting in a dataset of 370 unique crowdfunding campaigns

The decision to remove from the dataset campaigns a small number of outliers that failed to reach their fundraising target might be considered unusual, given the focus by other crowdfunding studies on the binary success or failure outcome in relation to a target amount. However, any suggestion that this introduces issues of survivorship bias can be addressed by the following three observations: (i) the PledgeMusic platform was unusual in that it took a very hands-on approach to assisting founders establish their crowdfunding campaigns,

including by setting realistic and achievable campaign targets, assisting in actively managing the crowdfunding campaign, and displaying progress towards a target as a percentage rather than absolute monetary terms. As a result, the platform has a > 85% campaign success rate during the sample timeframe (compared to < 50% for other similar crowdfunding platforms such as Kickstarter and Indiegogo). Consistent with the findings of Kuppuswamy and Bayus (2015) those small number of outlier failed campaigns which we have excluded from our initial sample typically did not complete due to structural flaws associated with the campaign that were identified only after its commencement, or where the campaign was abandoned by the founders during the fundraising period (something not uncommon as the cost to "start" a campaign on the platform was effectively zero), and there were no cases in our dataset where bands raised a non-trivial amount but subsequently failed to successfully complete; (ii) the analysis undertaken does not seek to discuss the influence of communications channels upon a campaign's binary success or failure outcome per se, but rather to understand how such factors contribute to actual financial performance, thus the exclusion of a small number of failed campaigns does not significantly impact the analysis or results; and (iii) crowdfunding target amounts themselves are somewhat arbitrary amounts, determined by some combination of founder guesswork, confidence, and the observed experience of others, thus the measurement of an ability to meet an arbitrary target is of little practical or theoretical value other than to determine how well a funder can gauge the persuasiveness of their campaign (which does have intrinsic value, but is outside the scope of this paper).

#### 3.2. Descriptive Statistics

A set of descriptive statistics for our dataset is found in Table 1. The average founder running a crowdfunding campaign in our sample raise \$7,249 from their campaigns and at its commencement had (i) an email mailing list consisting of 1,208 contacts; (ii) 3,910 likes on their Facebook page; and (iii) 1,179 followers on Twitter. Over the course of their campaign,

the average founder generated 17 updates to their campaign, which were typically syndicated to fans via these same channels. The average crowdfunding campaign was supported by 193 unique funders, with a mean contribution from each funder amounting to just over \$40. The majority of campaigns were initiated by US-based founders, followed by the UK, with small numbers based in Europe, Australia, Canada, and elsewhere. Fewer than half of the campaigns were launched by solo acts (as opposed to bands) and fewer than half featured promotional videos. Many campaigns included a charitable component in the form of a donation linked to funds raised by the campaign; a practice encouraged by PledgeMusic.

#### [Insert Table 1 about here]

A correlation matrix containing the most relevant variables featuring in our empirical analysis is presented in Table 2. Predictably, the amount of money received by the campaign is shown to be strongly and positively correlated with the number of contributors (> 0.7), the number of email addresses and Facebook likes of the founder (both > 0.4), and the number of campaign updates (> 0.3). Also, unsurprisingly, numbers of email addresses correlate with Facebook likes (> 0.3), and Facebook likes with Twitter followers (> 0.5). However, the weakest correlation between the online channels is observed between email address and Twitter followers (< 0.3). Due to concerns over possible multicollinearity issues, variance inflation factors were calculated for each of the regression analyses appearing subsequently. As no variance inflation factor exceeded 1.5 (versus a conventionally held threshold of 10), multicollinearity between explanatory variables does not represent an issue affecting this analysis.

#### [Insert Table 2 about here]

#### 3.3. Model.

Our research investigates the impacts of online fan communication channels on the financial performance of crowdfunding campaigns according to the following regression model:

$$Y_{i} = \alpha + \beta_{1}(Email_{i}) + \beta_{2}(Facebook_{i}) + \beta_{3}(Twitter_{i}) + \beta_{4}X_{i} + \mu_{i}$$

Where:

 $Y_i$ : is the dependent variable (Amount Received; Number of Pledges; Average Pledge), which is the total amount raised, number of pledges received, or average pledge amount for the ith crowdfunding campaign in our sample.<sup>1</sup>

Email<sub>i</sub>: The number of email addresses in the founder's email mailing list prior to the start of the campaign i, self-reported by the musician.

Facebook<sub>i</sub>: The number of likes of the founder's Facebook page prior to the start of campaign i, collected by the platform directly from Facebook.<sup>2</sup>

Twitter<sub>i</sub>: The number of followers of the founder's Twitter account prior to the start of campaign i, collected by the platform directly from Twitter.

 $X_i$ : A vector of additional campaign-dependent control variables which include the number of updates, inclusion of a video, whether the musician or musician is a solo or group act, nationality, spelling errors in campaign description, charity (the promise of a charitable donation by the founders as part of the campaign), length of the campaign title and description, length of website registration, and two measures of musician quality.

 $\mu_i$ : A conventional error-term.

The statistical significance and relative magnitudes of parameters  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  estimated using negative binomial and logistic regressions allows us to test the validity of hypotheses H1 and H2.

#### 3.4. Empirical Analysis.

Table 3 shows the details of these regression analyses. The results from Specification I, where the dependent variable (Amount Raised) is reported in levels and estimated using negative

<sup>&</sup>lt;sup>1</sup> On the PledgeMusic site contributions to a crowdfunding campaign are termed "pledges".

<sup>&</sup>lt;sup>2</sup> At the time the data was collected bands on Facebook were "liked" rather than having "friends".

binomial regression, demonstrates that both email contacts and Facebook likes of the founder associate significantly and positively with the amount raised by the campaign. A comparison of the relative magnitudes of coefficient estimates suggests that email has a stronger impact on the financial performance of crowdfunding campaigns than Facebook likes. By comparison, the coefficient reflecting the number of Twitter followers is statistically equivalent to zero. The statistical significance and relative magnitudes of coefficient estimates remain consistent in Specification II, where the dependent variable is included in log form.

#### [Insert Table 3 about here]

The results presented in Specifications III and IV use the number of individual pledges received as the dependent variable, estimated using negative binomial and logistic regression respectively. The results are highly consistent with the equivalent estimates reported in Specifications I and II. Each additional e-mail contact and Facebook like associates positively and significantly with the number of pledges. The relative magnitudes of the coefficient estimates again imply that email is more influential in this regard than Facebook. No significant relationship is observed between the number of pledges received by the campaign and the number of Twitter followers of the founder.

Specifications V and VI use the average monetary value of each pledge as the dependent variable, again reported in levels and logs respectively. The results from these specifications show no evidence that any online communication channel has a statistically significant relationship with the average pledge amount. Taken together, the results presented in Table 1 indicate that the higher aggregate amounts typically raised by founders with greater volumes of online communication channels seem to derive from attracting greater numbers of pledges rather than encouraging those pledging to contribute larger sums.

Consideration of our range of campaign-level control variables reveals a number of other important factors associated with music crowdfunding outcomes that are worth noting. For

example, both Mollick (2014) and Kuppuswamy and Bayus (2018) observe that more numerous campaign updates tend to associate positively with campaign success; similarly, we find that they associate with better financial outcome for the campaign. This finding is not altogether surprising, given that updates are typically syndicated by a founder to all online fan communication channels they use, and they thus expose their fans to the associated online discourse, regardless of whether or not they have already become funders. In effect, each update acts as an additional unit of promotion for the campaign, and constitutes a subtle reminder to all fans who have not yet become funders that their support is still sought. Unsurprisingly, the PledgeMusic quality rating associates positively and significantly with campaign outcomes, while there is weaker evidence to suggest that artists who have held their websites for longer periods also tend to perform slightly better. This finding implies that campaigns initiated by more established artists marginally outperform those from newer artists. Also interesting is that the country of origin of the campaign is shown to have a significant impact on both the final amount raised and the average pledge amount, with non-US campaigns experiencing measurable shortfalls in both when compared with US-based campaigns. This phenomenon may relate to the fact that both crowdfunding and online payments were more developed and culturally mainstream in the US (and that US contributors are more comfortable using them) at the time of the study, the fact that over the data collection period the purchasing power of the typical US consumer was higher than the UK, EU, Australia, or Canada (OECD, 2013), or, more likely, a combination of these two factors.

Taken together, our results generally offer support for Hypothesis H1, in that email addresses have a more positive effect on campaign outcomes than Facebook likes. We find strong evidence of a positive association between email addresses and campaign performance, the strength of which is consistently greater than for Facebook. However, one caveat is that the effect is only apparent for the aggregate amounts raised and the number of pledges received

and does not extend into average monetary contributions. Our results also clearly support hypothesis H2, in that Facebook likes are found to have a more positive effect on campaign outcomes than Twitter followers; the latter being found to be statistically indistinguishable from zero in all cases.

#### 3.5. Further Empirical Analysis

In order to address hypothesis H3, we model our range of explanatory variables against the two independents variables expressed as counts (Amount Raised and Number of Pledges) using quantile regression analysis. As opposed to conditional mean models, quantile regressions allow us to estimate the extent to which our explanatory variables are more or less important in explaining variations in performance among higher or lower percentiles of the dependent variables (see Koenker and Hallock (2001) for an overview of the technique). The results of these regressions are in Table 4. Specifications I, II and III relate to different quantiles of amount raised, with the dependent variable expressed in logs in each case. Comparing the coefficient estimates across these three specifications demonstrates that the association between the amount raised by a campaign and the number of email contacts of the founder monotonically increases when moving from the 25<sup>th</sup> to 50<sup>th</sup> to 75<sup>th</sup> percentiles. We observe a similar (albeit weaker) trend for Facebook likes, while number of Twitter followers remains statistically insignificant at all percentiles of the dependent variables.

#### [Insert Table 4 about here]

Equivalent results relating to the number of pledges (again expressed in log form) are presented in Specifications IV-VI. The results of these regressions are highly consistent with those relating to the amounts raised. Specifically, the number of e-mail contacts is of greater importance among better performing campaigns. Again, there is weaker evidence of a similar effect for number of Facebook likes and no evidence of any significant pattern of change among number of Twitter followers. These findings indicate that online

communication channels, especially e-mail contacts, tend to become more important determinants of performance among campaigns raising relatively larger sums and/or receiving a greater number of pledges, and thus we find that hypothesis 3 is supported. Most of the other explanatory variables demonstrate similar coefficient estimates across the range of specifications. The only obvious exception is the number of words in the campaign description, whereby the magnitudes and significance of the coefficient estimates diminish at higher percentiles of the independent variable(s). Thus, while online communication channels are relatively more important among better performing campaigns, the length of the written description is found be relatively more important among campaigns that perform comparatively poorly. Overall, our results show that relationship between online communication channels and fundraising outcomes will differ among better-performing campaigns compared with poorer-performing campaigns. We find that the increasing importance of those channels among better performing campaigns is broadly in-line with the hierarchy outlined in the previous section, specifically that better performing campaigns make more effective use of their email networks, and the stronger social ties they embody, in raising funds through crowdfunding.

#### 4. Discussion and Conclusion

#### 4.1. Contribution to Literature

In this paper we analyse a private dataset of crowdfunding campaigns, comprising *ex-ante* community metrics and rich qualitative measures to determine how the social ties embedded within multiple coexisting online creator-fan communication channels impact the conversion of fans into campaign funders. Using a combination of negative binomial and logistic regressions, we find evidence of a clear hierarchy of importance of online communication channels, with email representing the most effective medium and Twitter being least important. Our study contributes to the literature on the relationship between crowdfunding and social

networks (e.g. Hekman and Brussee 2013; Byrnes et al. 2014; Hong et al. 2015; Fietkiewicz et al. 2018; Clauss et al. 2020) and social ties (e.g. Zheng et al. 2014, 2018; Polzin et al. 2018; Borst et al. 2018; Simon et al. 2019) by offering a nuanced insight into how the online fan communication channels of CCI campaign founders represent their underlying social ties with their fans. We also contribute to literature on online social ties (e.g. Ellison et al. 2007, 2014; Yang et al. 2014; Valenzuela et al. 2018; Waterloo et al. 2018) by deriving and testing a hierarchy of social tie strength within online channels in the context of crowdfunding. We uniquely analyse the three channels most relevant to CCI crowdfunding, and we further contribute to literature by quantifying the differences between individual channels in the D2F context and how they each impact conversions of fans to funders. In doing so, we uncover the importance of email, a channel whose role is largely unacknowledged and is under-represented in research into both crowdfunding and contemporary online social networking.

Recognising the inherent risks of endogeneity to empirical crowdfunding research, especially for that concerning something as inherently subjective as creative output, we utilise objective third party controls to account for variation in founder and campaign "quality". Our study is also unique in that our data measuring online fan communication channels is collected ex-ante the launch of the crowdfunding campaign, eliminating the endogeneity issues experienced by many other studies that rely exclusively on ex-post data (e.g. Mollick 2014; Zheng et al. 2014; Kuppuswamy and Bayus 2015; Colombo et al. 2015).

Finally, our study is unusual in that we utilise both negative binomial regression and quantile regression, allowing us to reflect on the differing impacts of dispersed dependant variables generally, and for more and less successful campaigns within our dataset. However, our study is not without limitations or opportunities for future research.

#### 4.2. Implications for Theory and Practice.

As the D2F model centres on the conversion of a fan into a funder, the astute CCI founder will

already be aware that, in addition to the volume of fans they have, the quality of their relationship with their fans is also important. While conventional wisdom suggests that a CCI founder should do their best to increase their aggregate fan-base in the months before launching a crowdfunding campaign (and, indeed, during said campaign), a CCI founder seeking to make the most of their existing fan relationships will also seek to migrate as many of those relationships to a communication channel which is more intimate and represents stronger social ties prior to the start of the campaign. Our results suggest that, consistent with it hosting predominately latent ties, Twitter may be particularly well suited to certain low-impact creatorfan interactions such as those requiring only "ambient awareness" (Levordashka and Utz, 2016). Fans who are connected to the founder through Twitter alone are unlikely to convert into funders, and should be targeted to be "moved up the hierarchy" to Facebook or, preferably, email. Some founders associated with the PledgeMusic platform reportedly achieved this through offering incentives (e.g. "sign up to our mailing list and receive a free unreleased song"). While not specifically analysed in this paper, anecdotal evidence gathered in conversation with crowdfunding platforms in connection with this research suggested that CCI founders who were able to increase the intimacy of their email communications with their fans were able to achieve unusually high rates of fan-to-funder conversions. Ways to achieve this included moving beyond a generic "mailing-list personalised" email (which Trespalacios et. al (2016) find does not response rates) to sending each email separately and including specific hyper-personalised text in the body.

Further, our quantile regression analysis indicates that different types of campaigns may experience different associations with key campaign characteristics. Our results suggest that campaigns at the upper-end of the performance distribution tend to enjoy a stronger association with their number of online connections (especially email) compared with campaigns that perform less well. Conversely, campaigns at the lower end of the performance distribution

tend to benefit from a stronger association with the length of their written description compared with better-performing campaigns. These findings imply that founders with lower quality campaigns (e.g., inexperienced or novice founders) expecting to raise relatively modest sums might be better served focusing more of their attention to improving their funding pitch compared with others. Conversely, founders with better quality campaigns (e.g., experienced or high-performing founders) may benefit by focusing more of their attention to improving the breadth and intimacy of their social ties compared with others.

Our work also shows that future researchers seeking to analyse factors influencing crowdfunding campaign performance should not limit themselves to quantifying the founder's Facebook network alone, but consider the broader reach of a founder through other online channels, and to account for the quality of the social ties those channels represent. Additionally, in assembling their models they should seek, where possible, to gather D2F community data on an *ex-ante* basis, to limit issues of endogeneity, and consider a number of other variables that are relevant to crowdfunding outcomes, e.g., the location of the founder and objective measures of founder and campaign quality. Finally, they should consider basing their analysis on the gross funds raised by the campaign, rather than the binary success or failure outcome, as this provides a more useful measure to analyse crowdfunding performance.

#### 4.3. Limitations and Directions for Future Research.

In order to focus our analysis on the specific effects of online fan communication channels on CCI crowdfunding outcomes our data set is necessarily very specific. We have investigated only one particular type of crowdfunding campaign (music), as well as a single crowdfunding platform (PledgeMusic), and our dataset looked only at successful campaigns. While we are confident of the broader application of our findings to rewards-based crowdfunding activities on other online platforms and within different market contexts, the nature and strength of these relationships may be subject to variation. Our decision to investigate the effects of only three

online fan channels was consciously made due to their significance both in the D2F music segment and in the CCI and crowdfunding more broadly. Nevertheless, we acknowledge the existence of other online communication channels, that other market contexts may have more relevant online communication channels, and that the online communication ecosystem tends to evolve rapidly.

Considering these limitations, various opportunities exist for extension of this work in future research. Extending our analysis to encompass other CCI verticals, additional crowdfunding platforms, and other online communication channels would likely yield both theoretical and practical benefits. Suggestions for CCI verticals worthy of examination would include film, books, theatre, art, and comics, among others. Additionally, platforms such as Kickstarter, Indiegogo, Crowdfunder, Patreon, and Unbound could be investigated, as well as broadening the scope of online communication channels to include platforms such as Youtube, Instagram, and online discussion forums. Similarly, ascertaining the relevance of our findings to other crowdfunding sectors would also offer potentially beneficial areas of future research; possible candidates would include equity/debt crowdfunding, donation crowdfunding, and rewardsbased crowdfunding beyond the CCI such as the more entrepreneurial campaigns for software, design, consumer goods, and technology projects. A closer examination of specific factors in CCI crowdfunding would also offer opportunities for further research; for example, it would be interesting to examine possible variations in relation to music genres, founder and funder age, race and gender, and the influence of past crowdfunding experience on subsequent campaigns by the same founder (the so-called "repeat founder"). As our study only addresses gross amounts raised by successful campaigns it would also be valuable to examine the differences between successful and unsuccessful campaigns, and the relationship between amounts raised against target amounts.

When considering the fan communities themselves, our dataset is also somewhat limited.

While it provides a good understanding of the size of these communities, it does not indicate the extent to which fans may be members of more than one community and thus receive communications through multiple channels (although Guy et al. (2008) and Buccafurri et al. (2015) suggests that this is uncommon). Similarly, we have no information on how frequently communications actually occurred across the individual communications channels. Future quantitative research seeking to build on our findings would benefit from controlling for such factors as the frequency of communication across the various channels, the impacts of fan membership across multiple online communities, and the impacts of communication within the fan community itself. Future qualitative research might also seek to develop a greater understanding of the subjective view of the creator-fan relationship that is experienced through these channels. Additional factors which future researchers might want to consider include funder specific traits, and the relationship between the device upon which communications are received by the fan and the device on which they typically make internet payments (e.g. PC vs. smartphone), something which the authors were not able to determine from the data available to them.

#### 5. Conclusion

This paper makes several important contributions to the literature on CCI crowdfunding and online fan communication channels. Specifically, the paper constitutes the first piece of research closely examining the relationship between multiple fan communication channels and actual financial outcomes of CCI crowdfunding campaigns, a model colloquially referred to in the industry as Direct-To-Fan or D2F. Recognising the inherent issues of endogeneity present in crowdfunding research, we utilise two independent measures of founder and campaign quality together with *ex-ante* measures of online fan communication channel reach. Through our analysis, we demonstrate a clear hierarchy of importance of online fan communication channels for the purpose of CCI crowdfunding, with email clearly situated at the top of that

hierarchy.

More specifically, through estimating a series of negative binomial and logistic regressions, we demonstrate a positive and significant relationship between the monetary amounts raised by crowdfunding campaigns and the use of both e-mail and Facebook as online fan communication channels, although observe a statistically insignificant relationship in the case of Twitter. Our quantile regression results further demonstrate that online communication channels, particularly email, tend to associate more strongly with outcomes among better performing campaigns. Conversely, the length of written description tends to associate more strongly with outcomes among poorer-performing campaigns. These findings have implications for the relative importance of campaign characteristics and the focus of resources to prepare and support crowdfunding campaigns for different types of founders.

Drawing on literature regarding social ties and online communication channels, we demonstrate that channels that are more intimate and represent proportionally stronger social ties are more effective in converting fans to funders, resulting in better crowdfunding outcomes. Given that many previous studies of crowdfunding have typically focussed on the relationship between crowdfunding outcomes and Facebook 'friends', we show that future work will likely benefit from both controlling for the presence of multiple online communication channels, particularly email. Future CCI crowdfunding research would also benefit from accounting for an objective analysis of the quality of a founder's creative output as it also impacts crowdfunding outcomes.

Ultimately we demonstrate that in D2F CCI crowdfunding, as in life, the Beatles were right – we do all get by with a little help from our friends.

#### TABLES AND FIGURES

#### Figure 1: Online Communication Channel Attributes

Digital Messaging Channel	Fundamental Attributes of Online Communication Channel (by design of the platform, and by common usage)	Relative strength of social-tie network / social capital
Email	<ul> <li>One-to-one / Personally addressed / Private</li> <li>Longer message (typically multi- paragraph)</li> <li>More intimate</li> </ul>	<ul> <li>Highest proportion of strong ties</li> <li>"Stronger" weak-ties</li> <li>Lower proportion of latent ties</li> <li>More bonding social capital</li> <li>Less bridging social capital</li> </ul>
Facebook	<ul> <li>One-to-many / Group addressed / Semi- public</li> <li>Shorter messages (typically a single paragraph or two)</li> </ul>	↑ ↓
Twitter	<ul> <li>One-to- all / Unaddressed / Public</li> <li>Very short message (140 character limit at the time of the study)</li> <li>Least intimate</li> </ul>	<ul> <li>Lowest proportion of strong ties</li> <li>"Weaker" weak-ties</li> <li>Higher proportion of latent ties</li> <li>More bridging social capital</li> <li>Less bonding social capital</li> </ul>

Key: [arrow symbol] denotes a mid-point state between those described immediately above and below

#### Figure 2: Sample PledgeMusic Campaign Announcements

#### Campaign announcement via email



#### Campaign announcement via Facebook

Chris Robley & the Fear of Heights shared their video. May 15, 2015 · ©

My first new album in 5 years is almost ready! I'm using PledgeMusic to fund the last few steps in the recording process, and I'd love to have your support. Check out this video; then pledge to pre-order 'THE GREAT MAKE BELIEVER' at http://www.pledgemusic.com/chrisrobley.



#### Campaign announcement via Twitter



Variable	Mean	Std. Dev	Median	Min	Max	Variable Description
Amount Received	7248.89	7687.74	4432	116	46920	Amount collected by the crowdfunding campaign in US Dollars
Number of Pledges	193.24	205.97	130	7	1640	Number of contributors to the campaign
Average Pledge	40.07	21.92	35	6	167	Average pledge amount in USD Dollars
Email	1207.82	1373.92	673	13	6500	Number of email addresses in the founder's email list
Facebook	3910.22	6978.95	1468	62	48361	Number of likes on the founder's Facebook page
Twitter	1179.02	1619.84	553	13	9026	Number of followers of the founder's Twitter account
Updates	16.94	12.04	14	1	104	Number of updates to the campaign
Quality Rating	2.84	0.83	3	0	5	PledgeMusic musician/project quality assessment (scale 0-5)
Website (Years)	5.34	4.28	4	0	18	Number of years that the founder has registered their website
Words (Title)	18.00	4.77	19	1	26	Number of words in the campaign title
Words (Desc)	266.15	152.23	223	53	1253	Number of words in the campaign description text
Spelling Error (Desc)	0.02	-	-	0	1	Dummy variable (1 if campaign description text includes a common spelling error, 0 otherwise)
Charity	0.66	-	-	0	1	Dummy variable (1 if founders include a charity contribution, 0 otherwise)
Video	0.40	-	-	0	1	Dummy variable (1 if founders include an introduction video, 0 otherwise)
Presale	0.04	-	-	0	1	Dummy variable (1 if campaign is solely to presell an already financed project)
Solo	0.37	-	-	0	1	Dummy variable (1 if founder is a solo musician, 0 otherwise)
Scouted	0.22	-	-	0	1	Dummy variable (1 if founder was scouted by PledgeMusic, 0 otherwise)
Outside US	0.34	-	-	0	1	Dummy variable (1 if campaign is not US based, 0 otherwise)

#### Table 2: Correlation Coefficients

	Amount Received	Number of Pledges	Average Pledge	Email	Facebook	Twitter	Updates	Quality Rating	Website (Years)	Words (Title)	Words (Description)	Spelling Error (Description)	Charity	Video	Presale	Solo	Scouted	Outside US
Amount Received	1.00																	
Number of Pledges	0.78	1.00																
Average Pledge	0.31	-0.11	1.00															
Email	0.46	0.39	0.07	1.00														
Facebook	0.48	0.48	0.00	0.34	1.00													
Twitter	0.32	0.28	0.02	0.28	0.55	1.00												
Updates	0.34	0.34	0.07	0.25	0.04	0.02	1.00											
Quality Rating	0.32	0.34	-0.01	0.25	0.20	0.24	0.18	1.00										
Website (Years)	0.20	0.13	0.12	0.29	0.11	0.08	0.15	-0.04	1.00									
Words (Title)	0.02	0.01	0.09	0.01	-0.04	0.04	0.03	0.07	0.00	1.00								
Words (Desc)	0.26	0.21	0.05	0.18	0.13	-0.02	0.21	0.03	0.05	-0.02	1.00							
Spelling Error (Desc)	-0.01	0.01	-0.03	-0.02	0.06	-0.05	0.00	0.03	-0.01	-0.01	0.19	1.00						
Charity	0.09	0.11	0.02	0.10	-0.04	0.00	0.11	0.09	0.07	-0.01	0.13	0.00	1.00					
Video	-0.06	-0.06	-0.03	0.02	0.07	0.05	-0.14	-0.04	-0.02	-0.01	-0.11	-0.06	-0.09	1.00				
Presale	-0.15	-0.13	-0.12	0.08	0.04	-0.02	-0.13	-0.14	0.08	-0.13	0.01	-0.03	-0.14	0.14	1.00			
Solo	-0.09	-0.07	-0.01	0.00	-0.11	0.01	0.03	-0.02	0.08	0.06	0.12	0.03	0.17	-0.04	0.04	1.00		
Scouted	0.34	0.31	0.07	0.33	0.19	0.22	0.16	0.22	0.02	0.06	0.08	0.03	0.14	-0.12	-0.04	0.03	1.00	
Outside US	-0.21	-0.11	-0.31	-0.13	-0.03	-0.01	-0.06	0.05	-0.08	-0.01	-0.03	-0.05	-0.01	0.02	-0.09	-0.04	-0.08	1.00

Table 3: Regression Results										
	I	I II II			IV	V		VI		
	Amount Raised	Ln Amount Raised	Number of Pledg	es Ln Num	nber of Pledges	Average Pledge	9	Ln Average Ple	dge	
Email (x100)	0.0139 ***	0.0064 ***	0.0127	***	0.0057 ***	0.0084		0.0006		
	(0.0031)	(0.0014)	(0.0036)		(0.0014)	(0.1099)		(0.0011)		
Facebook (x100)	0.0035 ***	0.0013 ***	0.0038	***	0.0014 ***	-0.0089		-0.0001		
	(0.0006)	(0.0003)	(0.0006)		(0.0003)	(0.0186)		(0.0002)		
Twitter (x100)	-0.0017	0.0001	-0.0023		0.0002	0.0119		-0.0001		
	(0.0025)	(0.0011)	(0.0022)		(0.0011)	(0.0927)		(0.0008)		
Updates	0.013570 ***	0.005178 ***	0.015496	***	0.005149 ***	0.010771		0.000029		
	(0.003764)	(0.001708)	(0.004345)	(0	0.001676)	(0.101856)		(0.001040)		
Quality Rating	0.177920 ***	0.0912294 ***	0.174641	***	0.088154 ***	-0.730673		0.003077		
	(0.053492)	(0.0230348)	(0.047615)	(0	0.020905)	(1.431348)		(0.014769)		
Website (Years)	0.022380 **	0.011390 **	0.008374		0.005496	0.522699	*	0.005894	**	
	(0.009685)	(0.004617)	(0.009173)	(0	D.003934)	(0.286804)		(0.002786)		
Words (Title)	0.003700	0.000951	-0.006016	-	-0.002732	0.273082		0.003683		
	(0.007193)	(0.003183)	(0.006580)	(0	J.002960)	(0.218838)		(0.002271)		
Words (Desc)	0.000746 ***	0.000364 ***	0.000557	***	0.000305 ***	0.006050		0.000059		
	(0.000244)	(0.000092)	(0.000208)	(0	J.000087)	(0.007230)		(0.000075)		
Spelling Error (Desc)	-0.319319	-0.153342	-0.316258	-	-0.079069	-9.792752		-0.074286		
	(0.340026)	(0.144454)	(0.217529)	(0	J.089173)	(7.036267)		(0.089604)		
Charity	-0.060127	-0.014494	0.005585	-	-0.001618	-1.004862		-0.012873		
	(0.081819)	(0.036506)	(0.073019)	(0	J.032847)	(2.378885)		(0.022800)		
Video	0.006254	0.016381	0.009672		0.002785	0.226327		0.013604		
	(0.078674)	(0.033880)	(0.071890)	(0	J.032263)	(2.400638)		(0.023854)		
Presale	-1.504614 ***	-0.676817 ***	-1.130615	*** -	-0.473459 ***	-18.297360	***	-0.203328	***	
	(0.194463)	(0.101407)	(0.142136)	(0	0.071701)	(3.733089)		(0.051134)		
Solo	-0.104324	-0.014135	-0.016554		0.005100	-1.464467		-0.019232		
	(0.068492)	(0.0315681)	(0.066135)	(0.	.0301616)	(2.339837)		(0.023530)		
Scouted	0.313902 ***	0.133906 ***	0.221938	***	0.106591 ***	1.889152		0.027323		
	(0.090540)	(0.040363)	(0.084708)	(0	D.035753)	(2.907785)		(0.029684)		
Outside US	-0.385231 ***	-0.178134 ***	3.904186	** -	-0.021253	-14.801990	***	-0.156887	***	
	(0.076801)	(0.033130)	(0.388167)	(0	).031471)	(2.147134)		(0.022717)		
Time Dummies	YES	YES	YES		YES	YES		YES		
Constant	7.099343 ***	3.099061 ***	3.90419		1.595996 ***	34.054530	***	1.503067	***	
	(7.099343)	(0.12259 <mark>6</mark> )	(0.388167)	(0	0.111931)	(12.282600)		(0.069883)		

#### **Table 4: Quantile Regression Results**

i	<u> </u>	II	III		IV		V		VI	
	Ln Amount Raised	Ln Amount Raised	Ln Amount Rais	ed	Ln Number of Plea	dges	Ln Number of Plea	lges	Ln Number of Ple	edges
	0.25	0.50	0.75		0.25	-	0.50	-	0.75	-
Email (x100)	0.0046 ***	0.0068 ***	0.0085	***	0.0043	**	0.0053	***	0.0075	***
	(0.0015)	(0.0015)	(0.0019)		(0.0019)		(0.0015)		(0.0018)	
Facebook (x100)	0.0009 ***	0.0014 ***	0.0014	***	0.0013	***	0.0013	***	0.0017	***
	(0.0003)	(0.0003)	(0.0004)		(0.0004)		(0.0003)		(0.0004)	
Twitter (x100)	0.0018	-0.0006	-0.0019		0.0014		-0.0002		-0.0013	
	(0.0013)	(0.0013)	(0.0016)		(0.0016)		(0.0013)		(0.0016)	
Updates	0.005667 ***	0.004749 ***	0.005392	***	0.005152	***	0.006126	***	0.007387	***
	(0.001511)	(0.001463)	(0.001860)		(0.001860)		(0.001523)		(0.001814)	
Quality Rating	0.103694 ***	0.118340 ***	0.082032	***	0.086641	***	0.094117	***	0.078837	***
	(0.022858)	(0.022121)	(0.028127)		(0.028125)		(0.023038)		(0.027432)	
Website (Years)	0.013541 ***	0.012409 ***	0.012900	**	0.000670		0.006416		0.000965	
	(0.004181)	(0.004046)	(0.005144)		(0.005144)		(0.004214)		(0.005017)	
Words (Title)	0.003757	-0.001702	-0.003229		0.000168		-0.001500		-0.004816	
	(0.003585)	(0.003470)	(0.004412)		(0.004411)		(0.003613)		(0.004303)	
Words (Desc)	0.000493 ***	0.000444 ***	0.000209		0.000335	**	0.000417	**	0.000209	**
	(0.000119)	(0.000115)	(0.000147)		(0.000147)		(0.000120)		(0.000143)	
Spelling Error (Desc)	-0.288959 *	-0.076847	-0.168775		-0.044900		-0.203946		-0.256742	
	(0.149675)	(0.144853)	(0.184179)		(0.184164)		(0.150854)		(0.179629)	
Charity	-0.000353	-0.011869	-0.061631		0.002743		-0.018047		-0.023504	
	(0.037853)	(0.036634)	(0.046579)		(0.046575)		(0.038151)		(0.045428)	
Video	0.021176	0.009122	-0.021310		0.011197		0.003464		0.015413	
	(0.037920)	(0.036698)	(0.046661)		(0.046657)		(0.038219)		(0.045509)	
Presale	-0.687015 ***	-0.669804 ***	-0.679069	***	-0.401181	***	-0.407559	***	-0.574302	***
	(0.091040)	(0.088108)	(0.112028)		(0.112019)		(0.091758)		(0.109260)	
Solo	0.005660	-0.007718	-0.041805		-0.002769		0.015584		0.012736	
	(0.036024)	(0.034864)	(0.044328)		(0.044325)		(0.036308)		(0.043233)	
Scouted	0.103579 **	0.136696 ***	0.125780	**	0.132255	**	0.102805	**	0.073991	
	(0.044506)	(0.043072)	(0.054766)		(0.054761)		(0.044857)		(0.053413)	
Outside US	-0.193925 ***	-0.162567 ***	-0.187442	***	-0.018335		-0.027507		-0.005903	
	(0.036233)	(0.035066)	(0.044585)		(0.044582)		(0.036518)		(0.043484)	
Time Dummies	YES	YES	YES		YES		YES		YES	
Constant	2.933822 ***	2.804910 ***	3.219113	***	1.515400	***	1.574378	***	1.821528	***
	(0.381339)	(0.369056)	(0.469249)		(0.469210)		(0.384345)		(0.457657)	

#### References

- Agosto DE, Abbas J, Naughton R (2012) Relationships and social rules: Teens' social network and other ICT selection practices. Acta Anaesthesiol Scand 63:1108–1124. https://doi.org/10.1002/asi.22612
- Anderson M, Jiang J (2018) Teens, social media & technology 2018. Pew Research Center 31:2018
- Aufreiter, N., Boudet, J. and Weng, V. (2014), Why Marketers Should Keep Sending you Emails, McKinsey&Company, New York, NY, available at: https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/whymarketers-should-keep-sending-you-emails (accessed on 14 July 2021)
- Barkhuus L, Tashiro J (2010) Student socialization in the age of facebook. In: Proceedings of the 28th international conference on Human factors in computing systems CHI '10. ACM Press, Atlanta, Georgia, USA, p 133
- Bimber B (2014) Digital Media in the Obama Campaigns of 2008 and 2012: Adaptation to the Personalized Political Communication Environment. Journal of Information Technology & Politics 11:130–150. https://doi.org/10/gh26xv
- Boase J (2006) The strength of Internet ties. In: Pew Internet & American Life Project.
- Borst I, Moser C, Ferguson J (2018) From friendfunding to crowdfunding: Relevance of relationships, social media, and platform activities to crowdfunding performance. New Media & Society 20:1396–1414. https://doi.org/10/gc92zv
- Boyle K (2013) Yes, Kickstarter raises more money for artists than the NEA. Here's why that's not really surprising. Washington Post
- Buccafurri F, Lax G, Nicolazzo S, Nocera A (2015) Comparing Twitter and Facebook user behavior: Privacy and other aspects. Computers in Human Behavior 52:87–95. https://doi.org/10/f7q8xw
- Burke M, Kraut R, Marlow C (2011) Social capital on facebook: differentiating uses and users. CHI '11: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems May 2011 Pages 571–580 https://doi.org/10.1145/1978942.1979023
- Byrnes JEK, Ranganathan J, Walker BLE, Faulkes Z (2014) To Crowdfund Research, Scientists Must Build an Audience for Their Work. PLoS ONE 9:e110329. https://doi.org/10.1371/journal.pone.0110329
- Chen S, Chen C, Chen Y, Yang C, Lin W, and Wei C "Will Your Project Get the Green Light? Predicting the Success of Crowdfunding Campaigns" (2015). PACIS 2015 Proceedings. 79. http://aisel.aisnet.org/pacis2015/79
- Clauss T, Niemand T, Kraus S, et al (2020) Increasing crowdfunding success through social media: The importance of reach and utilisation in reward-based crowdfunding. Int J Innov Mgt 24:2050026. https://doi.org/10/ghsszc

Colombo MG, Franzoni C, Rossi-Lamastra C (2015) Internal Social Capital and the Attraction

of Early Contributions in Crowdfunding. Entrepreneurship Theory and Practice 39:75–100. https://doi.org/10.1111/etap.12118

Dumbreck A, McPherson G (2016) Music Entrepreneurship. Bloomsbury Publishing

- Ellison NB, Steinfield C, Lampe C (2007) The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. Journal of Computer-Mediated Communication 12:1143–1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x
- Ellison NB, Vitak J, Gray R, Lampe C (2014) Cultivating Social Resources on Social Network Sites: Facebook Relationship Maintenance Behaviors and Their Role in Social Capital Processes. J Comput-Mediat Comm 19:855–870. https://doi.org/10/bbrv
- Etter V, Grossglauser M, Thiran P (2013) Launch hard or go home!: predicting the success of kickstarter campaigns. ACM Press, https://doi.org/10.1145/2512938.2512957
- Fietkiewicz KJ, Hoffmann C, Lins E (2018) Find the perfect match: the interplay among Facebook, YouTube and LinkedIn on crowdfunding success. International Journal of Entrepreneurship and Small Business 33:472–493
- Freeman LK, Brinkley J (2014) Length matters: Message metrics that result in higher levels of perceived partner responsiveness and changes in intimacy as friends communicate through social network sites. The Journal of Social Media in Society
- Gilbert E, Karahalios K (2009) Predicting tie strength with social media. In: Proceedings of the 27th international conference on Human factors in computing systems CHI 09. ACM Press, Boston, MA, USA, p 211
- Granovetter M (1983) The Strength of Weak Ties: A Network Theory Revisited. Sociological Theory 1:201. https://doi.org/10/dxd8fx
- Granovetter MS (1973) The strength of weak ties. American journal of sociology 78:1360–1380. https://doi.org/10/bxwqdn
- Greenberg MD, Pardo B, Hariharan K, Gerber E (2013) Crowdfunding Support Tools: Predicting Success & Failure. In: CHI '13 Extended Abstracts on Human Factors in Computing Systems. ACM, New York, NY, USA, pp 1815–1820
- Guy I, Jacovi M, Meshulam N, et al (2008) Public vs. private: comparing public social network information with email. In: Proceedings of the ACM 2008 conference on Computer supported cooperative work CSCW '08. ACM Press, San Diego, CA, USA, p 393
- Hartemo M (2016) Email marketing in the era of the empowered consumer. Journal of Research in Interactive Marketing 10:212–230. https://doi.org/10.1108/JRIM-06-2015-0040
- Hawkins RL, Maurer K (2010) Bonding, Bridging and Linking: How Social Capital Operated in New Orleans following Hurricane Katrina. British Journal of Social Work 40:1777– 1793. https://doi.org/10.1093/bjsw/bcp087

Haythornthwaite C (2002) Strong, Weak, and Latent Ties and the Impact of New Media. The

Information Society 18:385–401. https://doi.org/10/bxmxht

- Hekman E, Brussee R (2013) Crowdfunding and online social networks. Retrieved May 15:2014 https://www.hu.nl/onderzoek/publicaties/crowdfunding-and-online-social-networks
- Hofer M, Aubert V (2013) Perceived bridging and bonding social capital on Twitter: Differentiating between followers and followees. Computers in Human Behavior 29:2134–2142. https://doi.org/10.1016/j.chb.2013.04.038
- Hong Y, Hu Y, Burtch G (2015) How does Social Media Affect Contribution to Public versus Private Goods in Crowdfunding Campaigns? 2015 International Conference on Information Systems: Exploring the Information Frontier, ICIS 2015 Association for Information Systems.
- Hughes D, Evans M, Morrow G, Keith S (2016) Standing Out in the Crowd. In: The New Music Industries. Springer International Publishing, Cham, pp 37–61
- Huhtamäki, J., Lasrado, L., Menon, K., Kärkkäinen, H., & Jussila, J. (2015). Approach for investigating crowdfunding campaigns with platform data: case Indiegogo. In Proceedings of the 19th International Academic Mindtrek Conference (pp. 183-190).
- Jian L, Shin J (2015) Motivations Behind Donors' Contributions to Crowdfunded Journalism. Mass Communication and Society 18:165–185. https://doi.org/10/ggd5gj
- Keeley B (2007) OECD Insights Human Capital How what you know shapes your life, OECD Insights, OECD Publishing, Paris, https://doi.org/10.1787/9789264029095-en.
- Kim H, Kim GJ, Park HW, Rice RE (2007) Configurations of relationships in different media: FtF, email, instant messenger, mobile phone, and SMS. Journal of Computer-Mediated Communication 12:1183–1207. https://doi.org/10/frcvgc
- Koenker R, Hallock KF (2001) Quantile regression. Journal of economic perspectives 15:143– 156. https://doi.org/10/d8wpm2
- Kraut R, Brynin M, Kiesler S (2006) Computers, Phones, and the Internet Domesticating Information Technology. Oxford University Press
- Kuppuswamy V, Bayus BL (2015) Crowdfunding creative ideas: The dynamics of project backers in Kickstarter. UNC Kenan-Flagler Research Paper
- Lazzaro, E., & Noonan, D. (2020). A comparative analysis of US and EU regulatory frameworks of crowdfunding for the cultural and creative industries. International Journal of Cultural Policy, 27(5), 1-17.
- Lambert T, Schwienbacher A (2010) An empirical analysis of crowdfunding. Social Science Research Network 1578175:1–23
- Lew, A. A., & Ng, P. T. (2012). Using quantile regression to understand visitor spending. Journal of Travel Research, 51(3), 278-288.

Levordashka A, Utz S (2016) Ambient awareness: From random noise to digital closeness in

online social networks. Computers in Human Behavior 60:147–154. https://doi.org/10/f8nrmp

- Li Y, Rakesh V, Reddy CK (2016) Project Success Prediction in Crowdfunding Environments. ACM Press, pp 247–256
- Lin R, Levordashka A, Utz S (2016) Ambient intimacy on Twitter. Cyberpsychology: Journal of Psychosocial Research on Cyberspace 10:. https://doi.org/10/ggc5sq
- Madden M (2004) Artists, Musicians and the Internet | Pew Research Center. https://www.pewresearch.org/internet/2004/12/05/artists-musicians-and-the-internet/. Accessed 20 Jan 2020
- Marsden PV, Campbell KE (1984) Measuring tie strength. Social forces 63:482–501. https://doi.org/10/ch3279
- Mollick E (2014) The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing 29:1–16. https://doi.org/10.1016/j.jbusvent.2013.06.005
- Muller M, Keough M, Wafer J, et al (2016) Social Ties in Organizational Crowdfunding: Benefits of Team-Authored Proposals. In: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing - CSCW '16. ACM Press, San Francisco, California, USA, pp 1244–1257
- O'Reilly T (2007) What is Web 2.0: Design patterns and business models for the next generation of software. Communications & strategies 17
- Phua J, Jin SV, Kim J (Jay) (2017) Uses and gratifications of social networking sites for bridging and bonding social capital: A comparison of Facebook, Twitter, Instagram, and Snapchat. Computers in Human Behavior 72:115–122. https://doi.org/10/gf82z6
- Polzin F, Toxopeus H, Stam E (2018) The wisdom of the crowd in funding: information heterogeneity and social networks of crowdfunders. Small Bus Econ 50:251–273. https://doi.org/10/ggk57p
- Putnam RD (2000) Bowling alone: the collapse and revival of American community. Simon & Schuster, New York
- Ryan L, Sales R, Tilki M, Siara B (2008) Social Networks, Social Support and Social Capital: The Experiences of Recent Polish Migrants in London. Sociology 42:672–690. https://doi.org/10.1177/0038038508091622
- Sahni, N. S., Wheeler, S. C., & Chintagunta, P. (2018). Personalization in email marketing: The role of noninformative advertising content. Marketing Science, 37(2), 236-258.
- Simon M, Stanton SJ, Townsend JD, Kim J (2019) A multi-method study of social ties and crowdfunding success: Opening the black box to get the cash inside. Journal of Business Research 104:206–214. https://doi.org/10/ghdxzr

Smith A, Anderson M (2018) Social media use in 2018. Pew research center 1:1-4

Steinfield C, Ellison NB, Lampe C (2008) Social capital, self-esteem, and use of online social

network sites: A longitudinal analysis. Journal of Applied Developmental Psychology 29:434–445. https://doi.org/10.1016/j.appdev.2008.07.002

- Takhteyev Y, Gruzd A, Wellman B (2012) Geography of Twitter networks. Social networks 34:73–81. https://doi.org/10/cww2gn
- Tessler H, Flynn M (2015) From DIY to D2F: Contextualizing Entrepreneurship for the Artist/Musician. Music Entrepreneurship 47
- Tosatto, J., Cox, J., & Nguyen, T. (2019). An overview of crowdfunding in the creative and cultural industries. Handbook of research on crowdfunding. Edward Elgar Publishing.
- Trespalacios, J. H., & Perkins, R. A. (2016). Effects of personalization and invitation email length on web-based survey response rates. TechTrends, 60(4), 330-335.
- Valenzuela S, Correa T, Gil de Zúñiga H (2018) Ties, Likes, and Tweets: Using Strong and Weak Ties to Explain Differences in Protest Participation Across Facebook and Twitter Use. Political Communication 35:117–134. https://doi.org/10.1080/10584609.2017.1334726
- Virk A (2011) Twitter: The strength of weak ties. University of Auckland Business Review 13:19
- Waterloo SF, Baumgartner SE, Peter J, Valkenburg PM (2018) Norms of online expressions of emotion: Comparing Facebook, Twitter, Instagram, and WhatsApp. New Media & Society 20:1813–1831. https://doi.org/10/gc92tz
- Wellman B, Wortley S (1990) Different Strokes from Different Folks: Community Ties and Social Support. American Journal of Sociology 96:558–588. https://doi.org/10/cpdwqn
- Woolcock M, Narayan D (2000) Social capital: Implications for development theory, research, and policy. The world bank research observer 15:225–249
- Yang C, Brown BB, Braun MT (2014) From Facebook to cell calls: Layers of electronic intimacy in college students' interpersonal relationships. New Media & Society 16:5– 23. https://doi.org/10.1177/1461444812472486
- Zhao S (2006) Do Internet Users Have More Social Ties? A Call for Differentiated Analyses of Internet Use. J Comp Mediated Comm 11:844–862. https://doi.org/10.1111/j.1083-6101.2006.00038.x
- Zheng H, Li D, Wu J, Xu Y (2014) The role of multidimensional social capital in crowdfunding: A comparative study in China and US. Information & Management 51:488–496. https://doi.org/10.1016/j.im.2014.03.003
- Zheng H, Xu B, Zhang M, Wang T (2018) Sponsor's cocreation and psychological ownership in reward-based crowdfunding. Info Systems J 28:1213–1238. https://doi.org/10/gfhgqq