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The cost of cheap talk: How campaign promises and default contributions affect donation-based crowd funding Success.

Tianci Leon QIU
Singapore Management University, leon.qiu.2019@phdgm.smu.edu.sg

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QIU TIANCI, LEON

SINGAPORE MANAGEMENT UNIVERSITY

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Qiu Tianci, Leon

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Dissertation Committee:

Ang Ser Keng (Supervisor/ Chair)
Principal Lecturer of Finance
Singapore Management University

Liang Hao (Co-Supervisor)
Associate Professor of Finance
Singapore Management University

Lim Jamus
Associate Professor of Economics
ESSEC Business School

Singapore Management University
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I hereby declare that this PhD dissertation is my original work, and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in this dissertation.

This PhD dissertation has also not been submitted for any degree in any university previously.

Qiu Tianci, Leon

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Abstract

Non-profit organisations (NPOs) find it increasingly harder to engage donors and raise funds from the public. Post-pandemic: the emphasis on tactics to raise funds online through donation-based crowdfunding (DCF) platforms has surged in importance for both NPO survival and continued beneficiary aid. However, unlike equity-based crowdfunding platforms where campaign organisers are obligated to provide investors with tangible returns based on funding milestones, NPOs on DCF platforms do not have to adhere to any funding milestones or are beholden to any tangible obligations towards donors. Consequently, NPOs are greatly incentivised to deploy cheap talk – non-binding, unverifiable messages and claims to persuade donors to give, thereby increase chances of crowding funding success. Specifically, we hypothesize that the rhetoric-based cheap talk of making campaign promises has a positive impact on funds raised, whereas the quantifiable cheap talk associated with suggesting high default contributions has a negative impact on funds raised. We also purport a positive interaction effect to exist between these two facets of cheap talk. Our empirical study based on campaign data from Singapore's largest DCF platform supports these arguments.

Keywords: donation-based crowd funding, signaling theory, campaign promises, default contributions, cheap talk

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Acknowledgements

I believe that for most PhD candidates, one would write his/her acknowledgements at the end of the dissertation. I am writing this now, in the in-between (sort of like what I imagine purgatory to be like- very unpleasant) perhaps both to remain grateful to the wonderous help I received from so many on this academic journey, and to remind myself my motivations for pursuing this arduous route.

In the last four years since I embarked on this journey in 2019, much has changed and today I am asked - why pursue this?

To write this?

Spend time researching on this?

Why would *this* matter if you are on your deathbed?

And I think to myself, this will matter. And that if I am determined to leave this world a better place, then this research will help. We live in a world where we are constantly told that we are not enough. We live in age where advertisements exist to make us feel inadequate. And because we think we are not enough; we believe we are always poor. That is why we don't give as much. We earn more, to spend more. To buy things we do not need, with money that we do not have, to impress people we do not know. That is why this research matters – to look at what drives people to give in the context of donation-based crowd funding campaigns and how charities can be more cognizant in using these giving technologies to remain relevant while battling inequalities. The trick here, is to have donors realise that all they ever wanted, all they ever needed, they already have. And that way, we can inspire more to give, more to donate, so more people can be helped.

The Problem

Introduction

Donors making charitable contributions online through DCF campaigns, face a high level of information asymmetry and uncertainty about the competency of Non-profit organisations (NPOs) in fulfilling the campaigned goals as articulated. A donor's decision to donate to a specific charity tends to be more than just an evaluation of a given charitable organization structure, model; it also takes into account the reputation, competencies and numerous other criteria. Given the information limitations of outside donors, the distractions surrounding DCF platforms, together with the intangible social impact that usually surrounds reaching charitable objectives , it is a non-trivial task for donors to evaluate signals of NPO competence and commitment to the cause it heralds. (Basil et al., 2006)

If an early equity investor, interested in supporting high potential early-stage companies, do so, only if promised high returns in future. Likewise, the evaluation of an NPO as credible, is similar to assessing a new venture; a process that is fraught with information asymmetry, between investors and the uncertainty that stems from the prospects of the venture (Plummer et al., 2016). However, the difference lies in the ultimate objective of the donor as opposed to an investor, one that is altruistic in nature vis a vis a profit-oriented approach.

Naturally, information asymmetry between NPOs and donors can be reduced by the former providing costly signals to the latter (Dewally & Ederington, 2006) in an attempt to provide some legitimacy to the online campaign. Accordingly, one would expect that NPOs with pressing needs are expected to invest significantly more effort in signaling their quality to potential donors to hit campaign targets.

Quality signals are clues that convey information on unobservable characteristics of new companies (Spence, 1973). Signaling theory contends that to be effective signals need to be observable by the receiver and need to be costly; costly signals are indicative of higher firm quality, while costless signals (i.e., "cheap talk") are less effective since they can be sent by both high- and low-quality firms (Connelly et al., 2011) . Costly signals convey messages about the signaller's past activities and achievements that are either difficult to obtain or hard to imitate, thus convey insight that helps alleviate information asymmetry. The same way higher education of a job candidate signals higher productivity (Spence, 1973), or a new venture having an established partnership with an existing incumbent signalling higher credibility (Kleinert et al., 2021).

Although traditional signaling literature associates "the cost" of the signal as paramount to effectiveness, Farrell and Rabin (1996) demonstrate the use of costless signals and the deliberate deployment of "cheap talk" as informational cues capable of influencing relationships and transactions. A costless signal such as charitable campaign promises, strategies to enter new markets; such claims are costless to make but provide information value to the receiver.

In addition, the recent expansion of signaling theory, recognises that under certain conditions, where objective information is scare, the receiver is less sophisticated and where the signaling environment does not provide for strong behavioural norms that can be followed (Colombo et al., 2015; Colombo, 2021) – costless signals such as cheap talk are even more valuable. Studies show that rhetoric-based cheap talk made by an entrepreneur can be effective in early-stage financing contexts (Anglin et al., 2018; Di Pietro et al., 2023; Steigenberger & Wilhelm, 2018); despite the notion that costless signals are prone to misuse

and are perceived to be unreliable (Bergh et al., 2014). This creates natural ambiguities in donation-based crowd funding research as we ask:

Can NPOs deploy cheap talk in DCF platforms to increase chances of campaign success?

Are there instances where cheap talk does more harm than good?

To address these ambiguities and elaborate on existing theory, we introduce the idea that an NPO's campaign promises of how donor funds would be used in the future as a potentially relevant cheap talk mechanism in donation-based crowd funding. Similarly to how high ambitions are considered a hallmark of successful entrepreneurship (Baum & Silverman, 2004), indicating high aspirations and intentions to achieve extraordinary financial growth (Wiklund & Shepherd, 2003) we posit that NPOs who elaborate on how donors funds would be used in the future via campaign promises (although unverifiable and non-binding), demonstrate an intent and competency, that persuades the donor to give.

However, in contrast to this rhetoric-based costless signal, we posit that the Cheap talk associated with suggesting a high default contribution would have this converse effect. NPOs can easily overstate the amount asked with respect to the cause at hand, and cause donors to worry about the veracity of suggesting such high amounts as a default contribution. Donor could then penalise such exaggerated solicitation request, due to the high value they place on trustworthiness. Like how early-stage investors find high numerical growth claims suspicious, ultimately leading to question the business model (Collewaert et al., 2021; Pollack & Bosse, 2014), we posit that donors will find high default contribution amounts unreliable, invoked undue scepticism and generating suspicion on campaign.

Although NPOS may be sincere in wanting donors to contribute a higher default amount, prospective donors will still view them suspiciously, given that objective information and a formal feedback loop is usually absent from a donation-based crowdfunding platform. It is then up to the NPO to justify these suggestions, that indeed those suggested default contributions were not shots in the dark. We propose that NPOs can do so, if they articulate how donor funds would be used in future, such that making campaign promises gives context and justification that would warrant a high default contribution amount. Thus, although facets are costless and constitute cheap talk, we posit that the presence of campaign promises would help negate the negative effects on suggesting high default contributions.

To test our conjectures, we adopt the dataset provided by Singapore's digital giving platform: Giving.sg. Giving.sg was initially launched in 2010 by National Volunteer Philanthropy Centre (NVPC) an independent not-for-profit organisation that advocates giving in Singapore. Giving.sg supports over 600 charities across 14 causes, including Children & Youth, Disability, and Elderly (Begum, 2022) . These data included detailed information about 6700 historical campaigns dating back to 2017, which enabled us to construct reliability measures for campaign promises and default contributions.

In summary, we establish three notable contributions to donation-based crowd funding and signaling research. First, we offer a more controversial view of Cheap talk, in which signal cost is a core tenet of traditional signaling theory (Bergh et al., 2014; Colombo, 2021) that gets relaxed in modern versions (Clough et al., 2019; Collewaert et al., 2021). Advocates of the modern perspective anticipate either a positive linear effect of Cheap talk, but we offer evidence of a negative linear effect of Cheap talk on fund raising performance in a donation-based crowd funding environment.

Second, cheap talk focuses largely on entrepreneur rhetoric as a relevant means to communicate information (Steigenberger & Wilhelm, 2018), usually in the form of rhetoric-based costless signals that inform investors about ‘‘who we are", "what we do" and "what is in it for you" (Anglin et al., 2018; Fazio et al., 2015). Likewise, NPOs follow suit in campaign descriptions, on "what cause we fight for", "who we help" and "where your donations will go". By focusing on NPO's suggested default contribution amount, we consider another version of cheap talk that is not rhetoric, but based on numbers, which informs donors "this is how much you should donate at minimum". This extension is important for campaign organisers, where campaign success is predicated on high contribution amount per distinct donor. In addition, given that number-based signals attract more attention and automatic processing from quantitatively focused investors (Hayward & Fitza, 2017) as compared to qualitative signals, we hypothesize that this crowd out effect hurts campaign owners in general.

Third, we extend our limited understanding of signals as a portfolio (Anglin et al., 2018) and, in response to recent calls (Colombo, 2021), show the interaction effect between different facets of Cheap talk. We argue that the negative effect of high default contributions can be dampened by the positive effect of rhetoric-based signals. Our studies addresses the risk that costless signals not only create portfolio inconsistencies (Kleinert, 2023) but also have inconsistent consequences when view in isolation.

Background: The difficulty in Post-pandemic Fund Raising

The contribution that NPOs make to our communities and to the wider society has been unparalleled, especially in the wake of the past two years of global lockdowns, deepening income inequality and Covid-related problems. However, having battled through what seems to be the end of the pandemic, NPOs now need to rebuild both their finances and various stakeholders.

Prior to Covid-19, NPOs have always faced the problem of fund raising – generating income to achieve financial stability and sustainability. Simultaneous, NPOs are expected to not only build reserves but invest for the future, be it in infrastructure or digital capabilities. The adoption of technology has been accelerated, particularly when faced a near-total halt of face-to-face canvassing of funds. All of this, being done whilst continuing to meet demand from beneficiaries, urgent needs from households that have multiplied, partially exacerbated by the pandemic and poor global growth.

The findings in a recent annual report published by Charity Aid Foundation, a leading international charity echoes the same sentiment. Foundation (2022) published that the top challenges cited by charity leaders were generating income and achieving financial sustainability (58%), followed by meeting demand for services (30%). More alarmingly, a fifth (21%) of charities said that they planned to use charity reserve funds to cover income shortfalls rather than for capital expenditure – this was twice as many as in 2019 (10%) (Foundation, 2022). However, despite the need to go-digital in terms of fund raising, only a quarter of charity leaders admitted they knew how to make their online fundraising truly effective.

In an government annual report published by the Charities Unit of Singapore's Ministry of Culture, Community and Youth, the commission emphasized how charities have reported a fall in income as their programs and services were largely disrupted with "traditional fund-raising methods grounded to a halt" (Charities Unit, 2021). Key statistic of the Singapore land scape was shared. Notably, for FY2019, donations collected were SGD3.25 billion (a 13% increase from FY2018), of which 55 newly registered charities were added to the fold (2,321 in total), and 646 organizations were approved as an Institution of Public Character.

A Charity as defined by the Commissioner of Charities, would be an organization established for exclusively charitable purposes, of which these purposes include; a) relief of poverty; b) advancement of education; c) advancement of religion; and d) other purposes beneficial to the community (Charities Unit, 2021). Charities Unit (2021) also specifies that some purposes can be considered charitable in nature if they benefit the community such as the promotion of health; advancement of citizenship or community development; advancement of arts, heritage or science; advancement of environmental protection or improvement; relief of those in need by reason of youth, age, ill-health, disability, financial hardship or other disadvantages, advancement of animal welfare; and advancement of sport, where the sport promotes health through physical skill and exertion. In 2019, the charity sector Singapore received a total of SGD20.8 billion in annual receipts comprising of donations, government grants, fees and charges, of which the Educator sector received 52.9% of those receipts.

As per Charities Unit (2021) analysis, religious charities were actually the most dependent on donations whilst charities in the community, arts and heritage as well as sports sectors were most reliant on support from government grants as their main source of income. Reuben Chan (2021) found that Singapore charities did not have enough financing to develop more

sophisticated ways of measure firm performance, while lack of donations resulted in small work staff that was “bogged down with operations and volunteer management”.

Over-reliance and the Funding Trap

Evidently, the reliance on government grants and other forms of income are what the majority of charities (apart from the religious sector) rely on. Perhaps the more insidious notion that belies relying on government grants, is also known as the funding trap. This was highlighted in a research piece entitled “Reimagining Charities” which sort out to answer how change can be brought to the self-assessment criteria of a charity and what is the current state of knowledge sharing, partnerships and challenges in the charities sector (Reuben Chan, 2021).

The authors pointing out that taking in government grants, or a reliance on them would dictate the development of internal metrics amongst charities, strongly influence the decisions made over such measurements, and have influence over the definition of success in a program (Reuben Chan, 2021). Thus, the taking of governmental monies result in poor internal governance where nonsocial service agencies apply internally top-down approach in deciding outputs, social service agencies face lack of board involvement in decision making and output measures with Ministries and funders being highly influential in KPI formation.

In terms of annual receipts by size, for the past five years, the percentage of charities being able to garner SGD10 million and above has not fluctuated by much, hovering close to 90%. However, the actual number of charities through the years have grown immensely, and hence those charities that raise below SGD10 million continued to grow.

Thus, specific to Singapore, NPOs pursuing purposes that are consistent with what the state deems as socially acceptable, will often be met with fiscal support and cooperation. Yet within that cooperation, that is still an element of co-optation, where the state wields both direct and indirect power over the NPO by way of board composition and fund provision (Tang, 2022). Conversely, NPOs attempting to engage in aims inconsistent with the state's social ideals are unable to register themselves as charities and are denied the corresponding fiscal support (Tang, 2022).

Significance and Practical Contributions of this Study

Choy and Schlagwein (2016) surmised that DCF fulfils donor motivations that are unattended or unsatisfactory met by traditional NPOs. Thus, by focusing on how NPOs can deploy signals better or be mindful of the repetition of signals in terms of fund raising, we hope to provide recommendations on how NPOs can better frame online campaigns to motivate donor contribution. Our findings also have implications for policies aimed at helping NPOs become more aware and appreciative of the signals transmitted by their online campaigns and its impact on actual funds raised.

We believe that the future of philanthropy rests upon how giving technology changes. Our hope is that the findings of this research act as worthy inputs, into shaping giving technology and helping NPOs be more cognizant when crafting DCF campaigns. If NPOs campaign owners understand what facets of a digital campaign contributes to campaign success, quicker adaptation to competent digital funding-raising can make the biggest difference to a NPOs financial health over the long term.

If an NPO were to master the art of running successful DCF campaigns to finance both short-term and long-term needs, most of the challenges faced by NPOs mentioned earlier would be overcome. NPOs would be able to fund raise digitally and no longer be at the mercy of pandemic-related physical canvassing restrictions. NPOs would be able to retain donors better, engage donors more effectively but not at the expense of greater operational cost. More importantly, with greater financial stability comes greater financial independence, enabling the NPO to act with greater self-volition and to by-pass the funding trap.

In addition, donation-based crowdfunding has another enigmatic element that challenges our standard beliefs on altruistic giving. Gleasure and Feller (2016) showed that since most donations on crowdfunding websites are anonymous thus violating an individual's concerns for social image. Gleasure and Feller (2016) also point out that more strikingly, donors on DCF platforms are more proactive in nature, seeking out causes to give to. Thus, it is increasingly important to not only be aware of new technological benefits available but also the peculiarities of digital donor behavior.

Although DCF platforms could have incorporate designed features that help quality campaigns stand out more, increase transparency, reduce information asymmetry, in a bid to mitigate the risks of a market of lemons (Moy et al., 2018), NPOs still require assistance. Few studies help interpret whether established signaling mechanisms in a for-profit arena such as reputation systems, friendship networks and discussion boards work in a donation-based crowd funding context, which is altruistic in nature.

Review of Literature

Traditional Perspective: Job Market Signaling Theory

Information Asymmetry

Information affects the decision-making process used by individuals. Information can be public, or private but nevertheless give rise to an information asymmetry where "different people know different things (Stiglitz, 2002). Due to inequalities in accessing public information and those who hold private information, those with more information can potentially make better decisions. As we move away from economic models that assume perfect information exists (Stiglitz, 2002), Stiglitz (2002) highlighted two categories of information that is more effective at resolving asymmetry: information about quality and information about intent. Likewise, our research focuses on how signaling helps involved parties resolve information asymmetry with regards to unobservable quality to decide.

Signaling Theory

Spence (1973) formulated signaling theory by utilizing the labour market to demonstrate the signaling function of education. Candidates that obtain education signal quality thereby reducing information asymmetry in the labour market. More profoundly, the signaling function of education was thought to be more reliable on the assumption that lower quality candidates could not bear the rigors of pursuing high education. Spence model was thought to be provocative at that time, modelling education as a means to communicate quality to employers, and not mainly to increase one's own productivity (Weiss, 1995).

Spence's Conceptual Framework

Spence's purpose was to provide a conceptual framework which could determine the signaling power of the observable personal characteristics of an individual such as age, race, sex and education level. His theory comprises of 1) hiring as investment under uncertainty 2) distinguishing signals and indices 3) A feedback loop and how information equilibrium can be reached.

First concept: Hiring as investment under uncertainty.

Employer not unsure of the productive capabilities of an individual at the time of hire. Information relating to the productive capabilities will also not be immediately apparent after hiring.

Due to this time lag for an employer to determine whether the hire was optimal in hindsight implies that hiring is an investment decision, one that is made under uncertainty, given that the employee capabilities are unknown. Spence (1973) proceeds to use the metaphor of purchasing a lottery (in the technical sense) or an employer's purchasing a lottery ticket (which is the services of the employee) where the cost to enter the lottery for the employer is the employee's wage. A risk-neutral employer would then expect the payoff of the lottery to be equal to that employee's wage.

Spence (1973) was interested on how the employer would perceive the lottery effect to be, as that would determine the wage an employer would offer to pay. Due to the fact that the employer is unable to vet the productive capabilities of the individual, the employer relies on observable characteristics and attributes of the individual to make an assessment. Spence (1973)

essay largely revolves around this endogenous market process where the information transmitted by a potential employee ultimately determined how much the employer would offer in wages, and in the end an allocation of jobs to people and vice versa.

Observable Attributes: A distinction

Spence also made clear that a distinction had to be made between attributes that were immutably fixed, and others that were alterable. He posited that education was an alterable attribution, in which one could use time and money to invest in and obtain, whereas race and sex are generally immutably fixed attributes. In addition, although age as an attribute does vary over time, this is not at the discretion of the individual and thus would be labelled as indices. Thus, Spence strictly reserved the term "signal" to reference an observable characteristic that is subject to the individual's manipulation.

Indices versus Signals

Spence (1973) posited that an employer will eventually learn of an individual's productive capability. Due to having prior experience in the job market, the employer will develop conditional probability assessment on productive capacity based on various combinations of indices and signals displayed by an individual. Spence regarded indices and signals as parameters that could shift conditional probability distributions that defined an employer's belief.

Signal cost

Seeing at how indices are unalterable, a job applicant can still potentially manipulate a signal. Spence terms this cost of manipulation and/or adjustment as signaling costs. He posited that education is costly to pursue and therefore has higher signal cost. Spence hypothesized that an employee would invest in education if there was sufficient return offered (in terms of wages), thus exhibiting yearning to maximize the differential between wages offered and the cost of bearing signal adjustment. Costs can be interpreted broadly, from direct monetary ones to more intangible forms such as an investment of time.

A key critical assumption of Spence's job market theory is that for a signal such as education to be effective as a differentiator for a job application, the cost of signaling to the job applicant must be negatively correlated with one's unknown productive capability. In other words, a highly productive person will be able to attain higher education levels at a lower cost and will be incentivized to do so when confronted with a wage schedule favouring higher productivity (using education requirement as an entrance requirement accompanied with higher compensation). This negative correlation serves as a pre-requisite that gives an observable alterable attribute to be a persistent informative signal.

Kirmani and Rao (2000) explained that signaling helps to distinguish between entities of high quality and low quality, for instance the ability to make interest and dividend payments over the long term (Bhattacharya, 1979) would signal a high quality firm. Due to the broad interpretation of what quality can refer to, we elect to adopt Connelly et al. (2011) definition as the underlying, unobservable ability of the signaler to fulfil the needs or demands of an outsider observing the signal, which is congruent with Spence (1973)'s notion of quality as

the unobservable ability of the individual, which is signaled by completion of the educational requirements necessary for graduation.

The Signaler

The originator of the signal is known as signalers-insiders (e.g., executives or managers) who obtain information about an individual (Spence, 1973), product (Kirmani & Rao, 2000) or organization (Ross, 1977) that is not available to outsiders. The information that an insider could hold be it negative nor positive would nevertheless be useful to an outsider deciding. Connelly et al. (2011) distilled it as private information that provides insiders with a privileged perspective regarding the underlying quality of some aspect of the individual, product, or organization.

The Signal and related constructs

The communication of this private information of outsiders. Communication could be deliberate, or unintended. When negative signals are communicated, most scholars agree that the action usually unintentional and not with the aim of resolving information asymmetry. For a signal to be considered effective, Connelly et al. (2011) summarized two chief characteristics: observability and cost. Signal observability simply refers to outsiders being able to notice the signal. Signal cost assumes that some firms are in a better financial position to communicate certain signals relative to other firms. Connelly et al. (2011) brought up the example of ISO9000 certification, and that it is more viable for a high-quality manufacturer to pursue certification versus a low-quality manufacturer.

To determine signal quality, a common conceptual framework involves combining signaling theory with institutional theory, where firm survival relies in legitimacy (Certo, 2003) this could be expressed in the unobservable quality of a board of directors (Certo et al., 2001), prestigious top managers (Lester et al., 2005). Signaling effectiveness can be enhanced by sending more observable signals or increasing the number of signals, which we call signal frequency (Janney & Folta, 2003). Given that firms compete in dynamic environments and information available to both signalers and receivers every-changing, signalers are implored to signal repetitively as well, to reduce information asymmetry (Park & Mezias, 2005). Another notion is that of signal consistency, define as the agreement between multiple signals from one source (Gao et al., 2008).

Lastly, several studies have uncovered the importance of receivers sending information back to signalers about the effectiveness of their signals (e.g., (Gupta et al., 1999) also known as countersignals. signalers also require information from receivers of which signals are most desirable or effective to help them improve communicative efforts.

The Receiver

Receivers are defined as the outsiders who lack the information about the organisation in question to make a better-informed decision. Bliege Bird and Eric (2005) showed that a natural conflict of interest exists between signallers and receivers, where signallers may be prejudiced in communicating misleading signals that would benefit the signaller at the expense of the receivers. Connelly et al. (2011) surmised that a key point in signalling theory is that outsiders must stand to gain (either directly or indirectly) from arriving at a decision based on the information obtained from the signal.

One overlooked but important aspect of signaling theory is the acknowledgement of the importance a receiver's beliefs are about the relationship between signals and performance. Spence (1973) argued that such beliefs had strong influence over a signaler signaling choices, but also drove their self-selection into and out of certain markets. Thus signalers can benefit from emitting signals to which receivers would pay attention based on perceived relevance (Gulati & Higgins, 2003). Naturally, because signals can be manipulated to influence receivers decisions, receivers therefore place more value on signals that communicate information and that are also costly (in terms of money, time, and/or effort), which are less likely – subjects of manipulation (Spence, 1973). Nevertheless, Spence (1973) theorised that if signalers do send misleading signals, receivers will learn over time to ignore them due an update in beliefs via market information feedback mechanism. Thus, previously perceived informative signals may be deemed otherwise due to their lack of relationship to performance or inability to distinguish good quality signalers from low-quality ones.

The Environment

Rynes et al. (1991) propertied the notion that the signaling environment also affects the extent to which signaling reduces information asymmetry. Distortion can occur which diminishes signal observability, or even impact how a signal was meant to be originally interpenetrated. Thus, if an individual were unsure about how to interpret a signal, the signaling environment and how others have interpretated the signal would serve as guidance (Sliwka, 2007), which usually results in a band wagon effect where signals are interpreted inaccurate (McNamara et al., 2008) to the benefit or detriment of the signaler.

Signaling Equilibrium

Spence (1973) defines an equilibrium as a self-sustaining "feedback loop", in which "employer expectations lead to offered wages to various levels of education, which in turn lead to investment in education by individuals." However, after hiring, the discovery of the actual relationships between education and actual observed productivity by the employers leads to revised expectations or beliefs (Spence, 1973), resulting in the start of a new cycle. For an equilibrium to exists, Spence (1973) also points out that new data should not contradict the set of beliefs adopted by the employer.

Modern Perspective: Cheap Talk

Receiver Preferences and Signal Cost

Crawford and Sobel (1982) were the first authors to define "cheap talk" as a costless, nonbinding, and unverifiable message, that can be constituted as a credible signal if the signaler is a large corporation, and the signal environment is consolidated.

Crawford and Sobel (1982) also argued that the cost of the signal was not predefined but stemmed from the receiver's beliefs and subsequent response to the signal – that would give rise to signal cost. In short, how the receiver responds to the signals, determines the effort or the cost a signaler is required to exert to put out that signal.

Thus, Crawford and Sobel (1982) invited the notion that the costs of signaling are not always set in stone prior to emission, and that even if some signals are pre-determined costs, a

costless signal that can elicit a desired response by the receiver would still be a meaningful signal.

Farrell and Rabin (1996) expounds on this concept further, defining “cheap talk” as informal communication that has not direct impact on payoffs in a game but has associated indirect impacts on responses of receivers (hence corresponding actions) which directly affect payoffs.

Farrell and Rabin (1996) also illustrates an example of where an outright lie can still create an equilibrium between an employer and employee. They show that in a scenario where Sally (an employee) would always prefer a more demanding job regardless of her true ability and would always claim a high competency to secure that job. This is pitted against her superior - Rayco (the employer), who has a preference of matching an employee’s ability to the right job difficulty. He would always prefer to either give a demanding job to Sally (if her ability is high) or a less demanding job (if her ability is low). Thus, when faced with this scenario, a compromised outcome is reached, where Rayco would assign the more demanding job to Sally based on her claim to avoid assigning a less demanding job to a high ability to employee. Although Sally’s claim is “cheap talk”, Rayco responses is one that aligns with his interests of assigning the right job based on the right level of ability.

Thus, Farrell and Rabin (1996) highlight the fact that cheap talk can have value and need not convey precise meaning which echoes Crawford and Sobel (1982) stance that imprecise cheap talk can lead to an equilibrium between parties.

In short, various academics have successfully shown that cheap talk matters in a range of mixed-motive interactions involving the transmission of private information. Given that cheap talk can be effective, granted that there is sufficient overlap between the interests of the signaler and receiver (Farrell & Rabin, 1996) or gain value based on domestic institutions and/or reputational concerns (Guisinger & Smith, 2002; Sartori, 2002) thereby influencing behaviour (Crawford & Sobel, 1982; Farrell & Gibbons, 1989) various studies also show how cheap talk can influence bargaining (Farrell & Gibbons, 1989), have value in political contexts (Austen-Smith, 1993).

In business contexts, cheap talk in the form of public disclosure of future plans via stock repurchases without firm commitment has a positive impact on stock prices (Brennan & Hughes, 1991). Recent finance literature has even proposed a new measure in which to quantify qualitative information in the realm of textual analysis and public disclosure. Pietro et al. (2020), analysed the role of future tense frequency on crowd funding campaigns and demonstrates that that cheap talk pertaining to claims of robust future plans, particularly in an innovation context, can raise more money from investors. This is in contrast to statements made about past achievements, in which ventures had either incurred cost to produce them, or would bear future negative repercussions if the past claims were to be untrue (Bapna, 2019).

Looking at the drivers on donation-based crowd funding campaigns, we also have found studies that show how cheap talk has the potential of reinforcing campaign perceived credibility. Signals that both high and low end firms can send out such as freely disclosing campaigned specific information (Aprilia & Wibowo, 2017) ; demonstrating the use of appropriate language with precision and distinction (Kim et al., 2016); assisting in visualizing the merits of the

beneficiary (Berliner & Kenworthy, 2017), providing additional information on off-site verification procedures (Kim et al., 2016), disclosing of beneficiary organization (Hsieh et al., 2011): allowing of personal commentary comments (Choy & Schlagwein, 2016); exhibiting updates in a regular fashion (Salido-Andres et al., 2019) and clear communication on how donor contributions would be utilized ((Diamond & Kashyap, 2006).

A State of Multiple Equilibria

Crawford and Sobel (1982) illustrate equilibrium differently, focusing on cheap talk as the main anchor. They show in their model, that "partition equilibria" exists, where various stats of balanced situations arise, due to communication methods that are opaque or unclear despite the lack of formal signaling. (Farrell & Rabin, 1996) perspective also differs slightly, illustrating how irrational behaviour can lead to some form of equilibrium, where behaviours of participants settle into a stable, predictable state.

Theoretical Framework

Theoretical Foundation

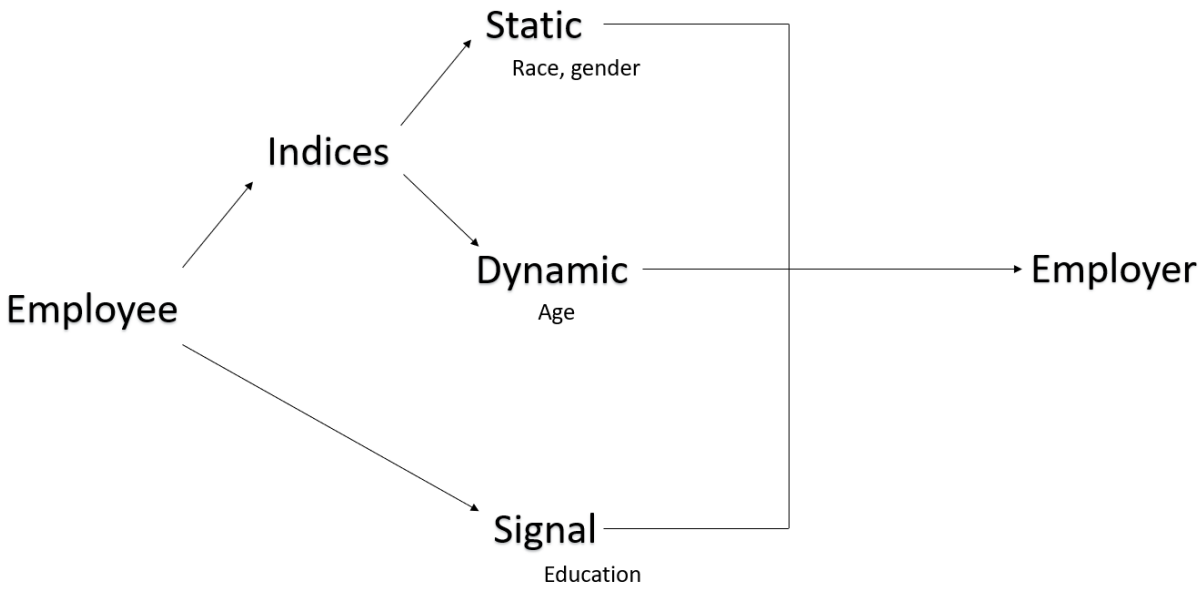
This research investigates whether the use of costless signals available to outside donors can be used to predict a donation based crowdfunding campaign success's outcome. More specifically, we investigate whether cheap talk emitted from an active donation-based crowdfunding campaign can offer informational value to the donor and consequently lead to higher fund-raising rates. We focus on cheap talk signals that are available to donors at the time of campaign inception and follow the funding journey to a campaign's success/failure.

As already noted, the existence of information asymmetries is a central issue in the relationships among donors and NPOs. If the market for information about NPOs were efficient, on a donation-based platform, donors would be perfectly informed on the credibility and competency of charitable organizations, and award donations to those assessed as such.

In a world with perfect information, a competent charitable organization failing to reach its campaign goals failure would stem from a clear understanding of errant motives or because the relevant parties held competing self-interests. Misinformation or uncertainty about the future state of the world in which they will do business would not be an issue. Unfortunately, perfect information is rarely if ever possible, particularly in the context of charitable giving, where impact is hard to measure and disparate . The decision to donate and the assessment of its associated risks (fraud, misallocation, disappointment) is central to what donor experiences. The presence of asymmetric information is a fundamental assumption of signaling theory (Certo, 2003; Levy & Lazarovich-Porat, 1995; Spence, 1973). In the absence of perfect information, decision-makers often look to various indicators to predict what future outcomes are likely to be.

Identifying Indices and Cheap Talk usage

In the context of a DCF signaling environment, where signals are emitted from the campaign itself, we must correctly identify attributes that are immutable fixed (indices), versus attributes that are alterable. Due to the fact that some attributes are dynamic in nature (change over time), they make look like alterable signals, when in fact they are not. Spence (1973) strictly reserved the term “signal” to reference an observable characteristic that is subject to the individual’s manipulation.



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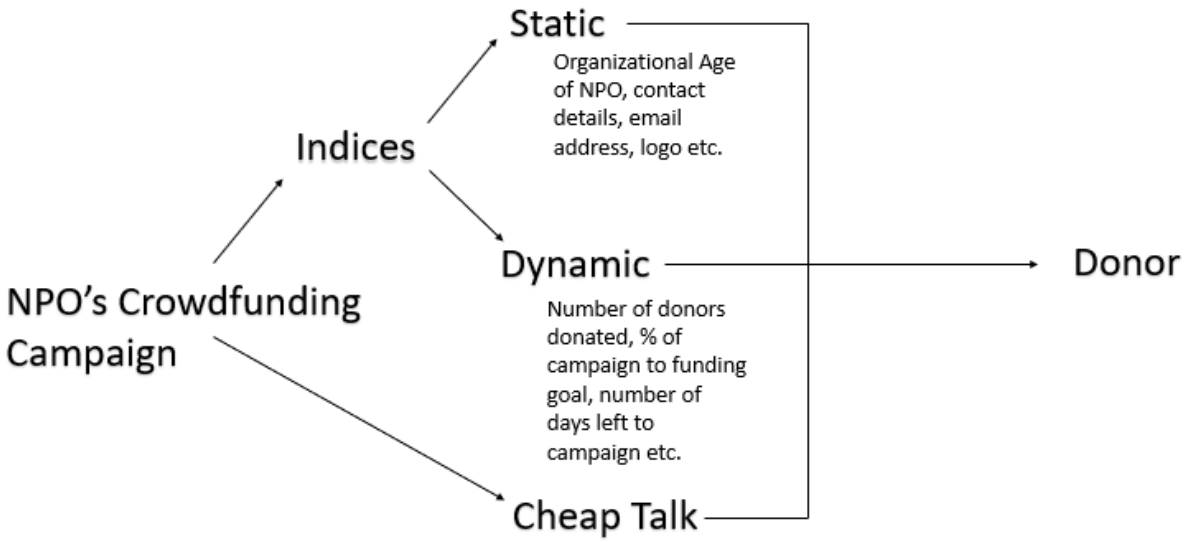
In addition, Bergh et al. (2014) emphasised the need in greater theoretical rigor in research that utilises signaling theory as the theoretical foundation; which at minimum would require,

1) unambiguous identification of the key elements of signaling theory – signalers, receivers, signal
2) define the relevant characteristics of the signals.
3) explain how the signals studied distinguish between low and high-quality prospects.
4) within the specifics of the signaling context.



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Thus, in our discourse, we will identify how the key elements of signaling theory translate to donor decisions affecting DCF funding affecting fund raising prospects, distinguish facets of online campaigns that are static indices, dynamic indices, and costless signals, explain why these costless signals are deemed to be cheap talk in reference to the corresponding unobserved quality, to form a coherent conceptual framework that will add value to cheap talk literature.

Possible equilibria arising from Cheap Talk

In the context of a donation-based crowdfunding campaign, let's examine how the concept of equilibrium applies. Given that multiple equilibria (Crawford & Sobel, 1982; Farrell & Rabin, 1996; Spence, 1973) can exist with the deployment of cheap talk and absence of formal signaling, we seek to hypothesize what are the possible equilibrium that can arise with between campaign organisers and donors with DCF platform as the signaling environment.

If the campaign organiser is the one trying to communicate information to convince potential donors to contribute to their cause, and donors being receivers of this information and acting on it, an equilibrium would be achieved if the campaign organiser communication strategy and the prospective donor's donation decision align such that neither party has an incentive to change their approach. Thus, if the campaign organizer's message is persuasive and credible, effectively communicate both the important and impact of the cause, and the prospective donor's decision to donate stems from a genuine interest and belief, an equilibrium will be formed. In this scenario, there is both alignment of interest between of signaler and receiver.

However, if the campaign organizer including messages that were misleading, exaggerated, or out of character with the cause, prospect donors might exhibit scepticism, resulting in a misalignment between campaign organisers communication strategy, and donor judgement. We view this misalignment as temporary and not a permanent break down in equilibrium. Even if the campaign organiser were to engage in cheap talk, this could still lead to possible equilibria (Crawford & Sobel, 1982; Farrell & Rabin, 1996).

One possible equilibrium would be potential donors exhibiting increase levels of caution when expose to cheap talk, and thus either delay their decision to donate, or simply choose not to till more reliable information presents itself. Thus, a new equilibrium is created, where donors are generally more cautious and inactive, which result in greater time delay for the campaign in terms of reaching a targeting funding goal.

Conversely, another equilibrium can exist, where donors react positively to the cheap talk and are more encouraged to donate. This can happen if donors find the message so appealing, they become less critical of campaign credibility.

Lastly, if a campaign organiser's use of cheap talk is widespread and well known, prospective donors can choose to ignore the campaign entirely. This creates a new equilibrium where donors collectively boycott the campaign organiser.

There are three takeaways here. Firstly, equilibria mentioned above can all coexists, given that donors perceived cheap talk differently and thus respond differently as well. Next, equilibria can be temporal or permanent in nature, depending on the subsequent actions of the campaign organiser; where a less desired equilibrium can be avoided should the campaign organiser tailor its communication strategy accordingly to salvage the situation. Lastly, these instances of equilibria also highlight how cheap talk can either hurt or help campaign success depending on the donor's proclivities towards such stimuli.

Cheap Talk's influence on donor responses

Although signal receivers such as donors understand that signals can be manipulated and used selectively to affect a donor's decision, donor's rightly place more value on signals that are not only informative but also costly (in terms of money, time, and/or effort), as this means that they are less likely to be subject to manipulation by the signal sender (Spence 1973).

Spence (1973) also stipulates that if signalers do send misleading signals, signal receivers learn over time to ignore them. This is because signal receivers' beliefs are updated via market information feedback mechanisms. Thus, previously informative signals lose value due to their lack of relationship to performance or their inability to discriminate between high-quality and low-quality signalers.

We would argue however, that this would not hold true in a DCF context.

1. Given the cost of fully assessing an NPO as competent or high quality in achieving a donor's ambition as high (in terms both time and energy), coupled with the additional insight gleaned as to have marginal value given what is at risk to the donor is the donated amount, donors may settle for cheaper, less reliable indicators of quality instead.
2. The lack of pre-donation screening efforts of donors, and the lack of pooling resources relevant to evaluate donation opportunities encourage costless signaling efforts from lower quality NPOs.
3. Lack of feedback mechanisms to update donors on how productive the NPOs are with the funds, provides a loophole for lower quality NPOs to take advantage of.

Thus, this unique combination of the altruistic nature and somewhat risk agnostic approach of donors, coupled with costless signals that donors do not screen for or are unable to truly verify, leads us to believe that some costless signals, will also impact a DCF campaign fund raising objective positively as well.

Despite the fact that the modern signaling view is in favor of the importance of costless signals in terms on conveying relevant information, to help entrepreneurs make a good impression

(Colombo, 2021), in an environment where objective information is lacking, the audience is less sophisticated or the context does not provide for explicit behavioral norms (Anglin et al., 2018), we predict that costless signal can also hurt the campaign organizer.

This is in line with another perspective of organizational research that predicts unverifiable claims as causative to negative perception (Bolino et al., 2016). Thus the use of subjective performance claims can look like self-promotion attempts which are more widely adopted by poor performers (Gardner & Avolio, 1998). In addition, Bolino et al. (2016) also found that people who overemphasize their own potential appear self-interested and less competent.

Statement of Hypothesis

Promises of how donor funds would be used in the future.

In parallel with the findings on announcement of future plans (Karapandza, 2016), we take the stance that in the highly uncertain context typically association with donation-based crowd funding campaigns, in addition to the limited time available to the NPOs to "market" its campaign, the added elaboration on how a donor's contribution will make a difference, can be considered a impactful communication strategy.

We argue that elaboration on how donors funds would be utilised in the future via campaign promises constitutes cheap talk, firstly as a costless signal (Colombo, 2021), which has low value because it is a strategy that is available to both high- and low-quality NPOS (Connelly et al., 2011). Furthermore, such claims are nonbinding and unverifiable (Crawford & Sobel, 1982). In contrast, having an IPC status and therefore allow donations to be tax-deductible, is akin to the patenting of a high-tech invention which is a difficult-to-imitate signal of firm quality (Pollock et al., 2010). As Chen et al. (2009) points out, costless signals includes statements

from founders about expansions into foreign markets – a claim that in principle could be made by all venture founders. Thus, a claim (false or not) on how donor funds would be utilised if received, can also be made by all NPOs.

Thus, although signals embedded in actions such as investments are much more credible than words or verbal promises, we would also suggest the main contributing factor as to why this costless signal has value in a donation-based crowd funding can be attributed to the notion of efficacy. Bekkers and Wiepking (2011) defined efficacy as the perception that donors have on their contribution making a difference to the cause they are supporting. Efficacy remains the most studied, in philanthropic, economics, and psychology journals, of which the intuitive relationship is that with decreased efficacy results in decreased likely hood of giving (Diamond & Kashyap, 2006). Lower efficacy also results in a lower likelihood of one leaving a charitable bequest (Wiepking et al., 2010). Bekkers and Wiepking (2011) pointed out that this relationship could be the result of reverse causality and/or justification. The authors noted that although efficacy remains widely studies, experimental studies on philanthropy where efficacy is manipulated have not been conducted. Proxies to efficacy such as experimental studies providing donors with information about the effectiveness of contributions, found positive effects on propensity to give (Parsons, 2007). Wagner and Wheeler (1969) also showed that when it comes to needs on the effects of donations, subjective perceptions of needs are more crucial as compared to objective needs. In addition, what was helpful is if there was clear communication on how donor contributions would be utilized (Althoff et al., 2017).

Making campaign promises also acts as a valid costless signal and increases campaign perceived credibility given that donors appreciate the transparency that comes with freely disclosing campaigned specific information (Aprilia & Wibowo, 2017). In addition, campaign

promises gives the NPO the opportunity to demonstrate precision and distinction by using appropriate language (Kim et al., 2016), while simultaneously visualizing the merits of the beneficiary (Berliner & Kenworthy, 2017) for the donor, which thereby motivates giving. Lastly, donors reward NPOs that voluntarily disclose and elaborate on the plight of the beneficiary organization (Hsieh et al., 2011): and offer clear communication on how donor contributions would be utilized. (Althoff et al., 2017) – facets that constitute making campaign promises.

In conclusion, we argue that cheap talk – promises made as to how donor contributions would be utilised in future will succeed in reducing the uncertainty and information asymmetries and have a positive effect on the success of the donation based crowdfunding campaign. Specifically, we posit that:

H1: *Cheap talk related to an NPO's making campaign promises of how donor funds would be used in the future has a positive impact on total funds raised.*

Default contribution suggestions

We propose that the NPO's choice of embedding default contribution suggestions a valid signal stemming from a DCF campaign. Given that potential donors cannot ascertain the quality of charitable consequence because they are not amongst the direct beneficiaries and the non-verifiable nature of the impact of the donation, suggested default options on how much to contribute could offer some guidance. In addition, suggested default options can also offer helpful informational value and help coordinate on a particular equilibrium as individual donors find it hard to determine how others will contribute and what the optimal amount should be (Green et al., 1994). This is also a costless signal, given that embedding default options are

a cost-free activity and available to both high and low quality NPOs. However, given the non-binding nature of default contribution amounts, does this facet of cheap talk help or hurt fund raising efforts? We argue that if an NPOs chooses to embed high default contribution amounts, that this will hurt fund raising efforts for several reasons.

Firstly, higher suggested default contribution should raise credibility concerns. Given that there is no direct cost in terms of asking for suggesting higher default contribution, NPOs can easily overstate the amount asked with respect to the cause at hand. Moreover, given that is inherently difficult to distinguish between high and low quality NPOs, donors might worry about the veracity of high default contribution amounts. Some might deem high default amounts as absurd, while others could penalise such displays, due to the high value they place on trustworthiness. Similar to how early-stage investors find high ambitious growth claims suspicious, ultimately leading to question the business model as a whole (Collewaert et al., 2021; Pollack & Bosse, 2014), we posit that donors will find high default contribution amounts unreliable, invoked undue scepticism and generating suspicion on campaign.

Second, similar to how new ventures sharing ambitious growth goals casts a negative impression on an entrepreneur's motive and competence, thus evoking a self-promoter paradox might evoke (Bolino et al., 2016). We posit that NPOs can fall into the same trap, when suggesting overly ambitious default contributions amounts. This castings scepticism directly on the NPO itself, an indirectly signal an NPO that is self-interested and less competent, which will dissuade donors instead.

Next, a quantitative, number-based signal such as growth ambitions tends to attract greater attraction and ignite automatic processing by investors (Hayward & Fitza, 2017). We expect donors to fixate on a costless signal such as default contribution amounts in a similar fashion, but to the detriment of other costly, or more value adding signals emitted from the campaign. This ties in with Goswami and Urminsky (2016) finding that the presence of having default options to donate, resulted in the "default-distraction" effect, in which other cues found in charitable campaign such as positive charity information was diminished, resulting in lower average donations per donor.

Lastly, a smaller, more modest default option, could lead to a "lower-bar effect" which induces more people to donate, when a small amount was the default amount (Goswami & Urminsky, 2016). Thus, the converse could exist, when a larger amount as the default amount, dissuades prospective givers, resulting in lesser actual donors thereby hurting fund raising efforts.

In conclusion, we argue that such acts of cheap talk involving high default contribution suggestions will distract the donor from costly/ value adding signals, invoked scepticism in the donor, cast suspicion on the campaign and have a negative effect on the success of the donation based crowdfunding campaign. Specifically, we posit that:

H2: *Cheap Talk related to an NPO's suggested default contribution amount has a negative impact on total funds raised*.

Future promises in the context of high suggested default contributions

In our previous two hypothesis, we first establish that future promises made on how donations would be use and suggested default contribution by the NPO act as costless signals. Despite both facets being costless, we then predict that the signal associated with future promises has a positive effect on total funds raised, while higher suggested default contributions have a negative effect on total funds raised. Given that the value of signals is often contextual (Connelly et al., 2011), and that costless signals from an NPO may be magnified or strengthened by the context in which other signals are launched or in the presence of other signals (Connelly et al., 2011; Plummer et al., 2016), we argue that an interaction effect exists between future promises made on how donations would be use and suggested default contributions. Specifically, we argue that for several reasons, the more future promises made by the NPO, offers both clarification of intent and elaboration of context which would reduce the negative effect higher suggested default contributions has on total funds raised.

First, as previously argued, high suggested default contributions raise credibility concerns, evoke a self-promotor paradox, and ultimately lead the donor to penalise both the campaign and campaign organiser. However since future promises providing donors with clear communication as to how donor contributions would be utilized (Althoff et al., 2017) and pertinent information about the effectiveness of these contributions (Parsons, 2007), future promise provide the rationale as to why an NPO may have chosen to suggest certain default contribution amounts.

Second, donors would be more acceptive of extremely high default amounts if the NPO specified the loftiness of its charitable ambitions. Thus, the issue of justified proportionality is considered when viewing both costless signals holistically which Saxton and Wang (2014)

further echoed that investments made into the effective framing of causes by using emotional messages can increase donations raised. If the NPO can show in its future promises, a strong degree of efficacy such that donors would be making a large difference to a large cause, outside default amounts suggested should be more acceptive to donors. Likewise, this is in line with Pietro et al. (2020) which found that although ventures emitting costless signals related to future plans had little positive bearing on attracting large capital inflows, receivers value these signals more and rewarded firms that were perceived to be radically innovative.

Below contain direct excerpts from campaign organiser soliciting a SGD150 donation amount.

"Your donation will provide counselling care services for our residents."

"Your donation could help purchase an assistive communicative device for a non-verbal child which would benefit his/her learning journey greatly."

"Your generous contribution will ensure that a beneficiary undergoes weekly physiotherapy for a year that can help with recovery."

One can see how a default contribution accompanied by an elaborated promise is more likely to covert a donor into giving.

This is further demonstrated by Bekkers and Wiepking (2011) stating that an awareness of needs as a fundamental pre-requisite for philanthropy; that people must be aware of a need to render support. Interestingly, awareness of needs as Bekkers and Wiepking (2011) rightfully points out, is largely beyond the control of donors, and relies on the deliberate actions of beneficiaries and charitable organizations to communicate those needs. The inherent information asymmetry between NPOs and donors is especially pronounced on a DCF platform

which makes donors more sensitive to campaign facets that project quality signals a donor would use to assess whether that NPO is worth giving to (Carter & Power, 2012).

Thus, we posit:

H3: *Cheap Talk related to an NPO's making campaign promises has a positive interaction effect on the relationship between an NPO's suggested default contribution amount and total funds raised.*

Research Design and Methodology

Background of Data Provider/Sources

The focus of this research is on a Singapore-based, government owned donation-based crowd funding platform known as Giving.sg. Launched by the National Volunteer and Philanthropy Centre (NVPC) in 2015, Giving.sg is the largest one-stop national giving platform to donate, volunteer and fundraise for any registered non-profits in Singapore. From a donor perspective, Giving.sg is attractive in comparison to privately owned DCF platforms for the following reasons:

1) Donor data is secured using top-of-the-line ISO27001 security certified data centre.

2) Backed by Singapore's Ministry of Culture, Community & Youth to assure funds are disbursed to registered beneficiaries.

3) Positioned as a service to community and therefore levies no service fee to donor. Consequently, Giving.sg has attracted more 600 registered non-profits to its platform, with 484,000 users, raising a total of SGD322 million for related beneficiaries. Unlike a for-profit equity platform that charges a transaction fee based on the amount raised for the entrepreneur, in which the entrepreneur can only access the funds if the campaign achieves a pre-set targeted amount NPOs enjoy donations received, even if the donation target was not met.

Working alongside senior management of Giving.sg, we were provided the dataset comprising of all historical online campaigns ever to have been listed on the platform. Specifically, the dataset comprised campaigns between the period of 1st Jan 2017 to 27 Oct 2023. Closed campaigns refer to campaigns that had either reached the funding target within the self-prescribed campaign period (successful campaign) or when the campaign period had expired. There were also instances where total amount raised was more than the funding target within the campaign period, given that donors continued to contribute despite being informed of the funding target had already been met. As Giving.sg performs a stringent selection of charitable campaigns that can be hosted on the platform, the embedded standardization allowed us to limit the characteristic heterogeneity of the Singapore social economy sector, favouring the estimation of the effect of the hypothesize factors on the success of DCF campaigns.

We also extracted NPO related information from a public website- https://www.charities.gov.sg/, which was managed by Singapore's Ministry of Culture, Community and Youth (MCCY). This charity portal serves as a one-stop resource centre for members of the public who are interested in finding out more about the charity landscape in Singapore. The portal serves as the main page for charities themselves to log in and submit relevant applications or compulsory submissions. The publicly accessible portal enabled us to extract all registered charities in Singapore with accompanying unique identification number, financial size (annual receipts), main activities that the charity was associated with and lastly the primary sector in which the charity was operating in.

Variables

Dependent Variables

In our study, we define our dependent variable is Actual Donation Amount – a continuous variable calculated as the total amount of funding (Kleinert, 2023; Kleinert et al., 2021; Li et al., 2022; Vismara, 2016) raised by the campaigned organiser when the campaign is closed or has expired. To re-scale for variation and reduce skewness, we reconstruct our dependent variable – Log Actual Donation Amount as the natural logarithm of the actual funds raised by a campaign (Chen et al., 2023; Taeuscher & Rothe, 2021).

Later, for robustness test purposes, we also include one additional continuous variable as an alternate dependent variable; Distinct Donors which measures the number of unique donors that have donated to the campaign (Chen et al., 2023; Kleinert, 2023; Kleinert et al., 2021; Vismara, 2016) Literature indicates that successful crowd funding performance corresponds with a campaign attracting more distinct donors and inspiring more donations to fulfil the campaign goal.

Independent Variables

Our first independent variable – promises of how donor funds would be used in the future was a continuous variable operationalised by observing the frequency of future tense usage utilised by NPOs under the campaign segment "How your donation makes a difference." Degree of future tense usage would be obtained by taking the cumulative observations of future tenses (words such as "will", "shall", "would", "may", "can", "could", "should", "might") used in these optional statements an NPO can make, divided by the total number of words used in all the statements combined. This methodology of determining future tense use follows that of

Karapandza (2016) who analysed future tense use in financial reports on stock returns and Di Pietro et al. (2023) who analysed future tense use in future claims made by ventures for fund raising purposes.

Under the platform, NPOs are offered the option of making up to five statements under "How your donation makes a difference.", with each subsequent statement being more elaborate or more ambitious.

"Your donation will provide counselling care services for our residents."

"Your donation could help purchase an assistive communicative device for a non-verbal child which would benefit his/her learning journey greatly."

"Your generous contribution will ensure that a beneficiary undergoes weekly physiotherapy for a year that can help with recovery."

NPOs could elect to keep this segment completely empty and thus not offer any elaboration on how donors funds would have been used. This would have been coded at 0.

An NPO could also elect to insert a generic thank you message across all donation options. Examples include: "Thank you for donating!" "We appreciate your donation" "Each small amount goes a long way". These observations would have been coded 0 as well, given the fact the no future tense usage was observed.

Our second independent variable – average default contributions was a continuous variable operationalised by taking the average of the four default contributions an NPO could suggest

to a donor to donate. By dividing the sum of the four default values an NPO could suggest a donor to donate, we reduce susceptibility to extreme values, which is in line with literature research on campaign ambitiousness (Kleinert, 2023) occurring in new venture forecasts (Collewaert et al., 2021; Kleinert, 2023) To reduce skewness further, we reconstruct our independent variable – Log Actual Customer Amount as the natural logarithm of the average custom amount an NPO had suggested a donor to contribute (Taeuscher & Rothe, 2021). Like making promises about how future donor funds would be used in the future, an NPO could opt out of suggesting a default contribution or choose "$0" as a default contribution amount.

Control Variables

Building on previous research in crowd funding (Anglin et al., 2018; Chen et al., 2023; Kleinert, 2023; Li et al., 2022; Vismara, 2016), we elected to include control variables on campaign level (what the donor sees on the platform) and also on the campaign organiser level (what the donor does not see on the platform but may interact with externally).

Our first control variable – Campaign goal, was a continuous variable observed as the initial target dictated by the NPO at the onset of the campaign. Building on previous research in crowd funding researchers found a positive correlation between a higher campaign goal and higher actual funds raised (Kleinert, 2023; Vismara, 2016).

Our second variable – the NPO Tax Deductibility, was a discrete variable operationalised by observing if the tax-deductible disclaimer – TDR will be issued for donations was made available to the donor. A tax-deductibility notice allowed a donor to enjoy automated tax relief to income tax payable. Although a large number of studies have shown how the effect of tax

price impacts philanthropy (Andreoni & Payne, 2003; Simmons & Emanuele, 2004); Peloza and Steel (2005) meta-analysis show the price effect to be negative. In addition, Bekkers and Wiepking (2007) showed that the price effect to be larger for religious donations while Romney-Alexander (2002) showed that tax benefits are the most important motives for payroll giving in the United Kingdom. Although Eckel and Grossman (2003) found that a partial crowding-out effect for individual net donations existed for rebate subsidies, no effect was found for matching subsidies. However, a later study in 2007 by the same authors found that matching subsidies did crowd in additional individual net donations. Thus, given that research on tax deductible as inconclusive in terms of motivating donor contribution, we conclude that the tax-deductible portion, regardless of it being a subsidy (tax deductible) which would imply a lower cost, or a matching offer does constitute an amplified benefit but not to the point of motivating donor behaviour (Kottasz, 2004). We believe that a positive correlation should exist between the presence of a tax deductible and actual funds raised.

Our third control variable – Campaign duration, a continuous variable was observed as the difference between the start of the campaign to the end of the campaign, and has been proven to be positively related to actual funds raised (Chen et al., 2023; Li et al., 2022). In addition, NPOs had the discretion to allow the campaign to run to the end of its tenure or cut it short if goals were met (or were far from it).

Use of imagery to generate sympathy is well-versed tactic NPOs employ. Thus, we control for that in our next two variables. Our fourth control variable – Campaign video, was a discrete variable in which we coded 1 if an NPO chose to upload a video to support or explain its agenda, and 0 if no video was uploaded. (Ho et al., 2021) Our fifth control variable – Campaign image

use, was a discrete variable in which an NPO could upload up to five photos on the platform to motivate donors (Ho et al., 2021). Given that both videos and images have the capacity to generate sympathy by associating giving with a higher cause (Body & Breeze, 2016), we believe image and video usage should have a positive relationship with actual funds raised.

Our sixth control variable – the Number of Description of words per Campaign was a continuous variable in which a count was made on the number of words used in the campaign description, which in our literature review was found to have a positive correlation with total funds raised (Chen et al., 2023; Ho et al., 2021).

Our seventh control variable – Campaign frequency was a continuous variable in which the frequency of multiple campaigns launched for the benefit of the same NPO was noted. Connelly et al. (2011) pointed out that firms can increase signal effectiveness by increasing signal frequency – sending a larger spectrum of observable signals or by increasing the number of signals emitted. Thus by signalling repetitively, signalers can attempt to reduce information asymmetry in a constant and consistent fashion. Connelly et al. (2011) also notes that signalers can either use multiple signals to convey the same message, or the sending out of multiple signals from the same source.

Next, we control for variables associated with the campaign organiser.

Our eighth control variable – Creator type, a categorical variable was observed based on who created the campaign. Given that an individual creating a campaign on behalf of an NPO, as

opposed to a corporate, association, or the NPO itself, would have indirect repercussions how total funds are raised.

Our ninth control variable – Financial Size , a categorical variable which denoted how large the NPO was based on financial receipts collected (Ahlers et al., 2015; Plummer et al., 2016). Including this variable, allows us to control for financial clout and volunteer base of an NPO, competencies, and help us combat omitted variable bias that would otherwise contribute to total funds raised.

Our tenth control variable – Sector Type, a categorical variable which labels which cause the NPO is linked to. Including this variable, allows us to control for sectors that may tend to do better in appealing to donors for fund raising.

Lastly, to control for potential structure changes to the macro environments or even platform policy maneuverers, we added fixed time effect by including in the model, the Year of Fund Raising, which are dummy variables to control for year the crowding funding campaign was launched (Ahlers et al., 2015; Di Pietro et al., 2023).

Analysis of Data

General Description of Data

The initial data set from Giving.sg had 15,979 observations. Bearing in mind that by adopting the ordinary least squares method, squared residuals would make the regression model susceptible to usual values, affecting coefficients, p values, predicted values and R-squared. Hence, we sought out both unusual and influential observations, checking for outliers both in our Y values and in our X values. Based on the residual plots of X to identify these unusual observations, we looked to see if there were data-entry errors, test cases masking as actual campaigns and campaigns that a simple logic test.

We first remove campaigns that raised zero funds, but logged distinct donors, given the fact that the presence of at least one donor should raise actual donation by above zero. 102 such campaigns were removed in the process. We also removed campaigns that did not explain or left the description of the NPO blank. These would be testing cases or error cases where an online organiser did not follow through to actual campaign launch. A total of 2625 campaigns were removed. Lastly, we removed all campaigns that had were only had a life span on one day, and campaigns with "TEST" in their title or description.

In our literature review, it was evident that attributes of the campaign organiser had wide ranging effects on donor perception and donor behaviour, both online and offline. If we were to only include control variables based on signals emitted or facets embedded in the campaign itself, we would mostly likely be committed omitted variable bias, leaving out confounding variables stemming from inherent NPO attributes.

Details of registered charities and therefore attributes of campaign organisers could be found on a public website - https://www.charities.gov.sg/, which was managed by Singapore's Ministry of Culture, Community and Youth (MCCY). The publicly accessible portal enabled us to extract all registered charities in Singapore with accompanying unique identification number, financial size (annual receipts), main activities that the charity was associated with and lastly the primary sector in which the charity was operating in. By combining both data sets, we would then have data points both on campaign level and on charitable NPO level. Ultimately, we were left with 6,972 observations after data cleaning and merging datasets.

Procedure of Testing Hypothesis and Data Exploration

We determined that a conventional linear regression model would be more suitable for your context, in line with prior donation based crowd funding research, given that we have a continuous response variable (Actual donation amount) condition on both continuous and categorical predictors(McCullagh & Nelder, 2019).

However, we are cognizant that statistical techniques encounter the common problem of "rubbish in, rubbish out", and took the following steps to fulfil the assumption set out in the ordinary least squares method, such that the regression results can be relied upon.

Table 1 contains the descriptive statistics and correlations. The minimum value of Campaign promises equals 0, which suggests that not all campaigns feature future tense usage in campaign promises. Likewise, for default contribution, not all campaign owners have chosen to suggest a default contribution amount. This finding is not surprising, given that donation-based crowd funding campaigns are new to traditional NPOs raising funds, and therefore may be oblivious to what facets can help or hurt a campaign.

Table 1: Correlation Matrix and Descriptive Statistics

		Mean	Std.Dev	Min	Max	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
[1]	DV: Donation Amount	10393	31233	10	931228	1												
[2]	Campaign Goal	39600	110902	100	2000000	0.65	1											
[3]	Tax Deductibility	0.95	0.21	0	1	0.013	-0.05	1										
[4]	Campaign Duration	111	109	2	365	0.28	0.41	-0.013	1									
[5]	Campaign Video	0.346	0.476	0	1	0.056	0.047	0.0028	0.03	1								
[6]	Number of images	3.01	1.56	0	5	0.074	0.067	-0.026	0.067	0.038	1							
[7]	Words of campaign	138	67	1	294	0.24	0.25	-0.034	0.053	0.013	0.12	1						
[8]	Creator Type	0.66	0.94	0	7	-0.19	-0.47	0.1	-0.25	0.081	-0.021	-0.24	1					
[9]	Scale Type	5.65	1.16	0	7	0.02	-0.044	0.28	0.015	-0.002	-0.12	-0.045	0.14	1				
[10]	Sector Type	1.02	1.24	0	7	0.024	0.095	-0.045	0.031	0.01	-0.014	0.11	-0.12	-0.073	1			
[11]	Start Year	3.24	1.36	0	5	-0.077	-0.16	-0.062	-0.17	-0.028	-0.12	-0.041	0.16	0.012	-0.035	1		
[12]	Campaign frequency	13.23	27.36	1	134	-0.23	-0.36	0.11	-0.18	-0.092	-0.14	-0.15	0.29	0.2	-0.12	0.31	1	
[13]	Campaign Promise	0.01	0.02	0.0	0.129	0.15	0.28	-0.1	0.099	-0.005	0.082	0.14	-0.53	-0.095	-0.004	-0.077	-0.18	1
[14]	Default Contribution	136	671	0.0	25087	0.28	0.55	-0.12	0.24	-0.051	0.036	0.25	-0.86	-0.13	0.12	-0.12	-0.31	0.54

Since we are employing an ordinary least square methods, we ensured that at best, the seven classical assumptions of OLS were hold true, such that the procedure could product the best results. If some assumptions were not satisfied, we employed remedial measure, transformation of variables to improve our results.

In the first assumption, such that the regression model should be linear in the coefficients and error term, we plotted residual plots of both our Y and X variables accordingly. In addition, through the literature review, we understood that some important independent variables relating to the NPO was necessary in constructing a reliable regression model.

This led us to seek out alternative data sets from government sources to complement the one received from Giving.sg, such that we had data points both on the campaign level, and on the campaign organiser level as well. Lastly our H3, includes and tests for interaction effects. That way, we believe we have minimised specification error by including all essential variables, that the linear model is optimal and an accurate representation of the real relationship between variables, and that all appropriate interaction terms were considered and included.

Given that many of the ordinary least square assumptions describe properties of the error terms, analysis of the residuals would be paramount in determining whether the model can be relied upon.

The second assumption of the error term having a population of zero is taken care of given that the inclusion of a constant in the regression model forces the mean of the residuals to equal zero.

In the third assumption, to ensure that independent variables are uncorrelated with the error terms and that little endogeneity bias exists, we plot the residuals of our independent variables. We plot the residuals plot for Campaign Promises in Table 4 and Default Contributions in Table 5. In both graphs we can see that our independent variable display randomness.

In the fourth assumption, observation of the error terms being uncorrelated with each other, and that serial correlation does not exist, we are able to verify that through three checks. Firstly, linearity is demonstrated based on the scatter plot between residuals (x-axis) and target variable values (y-axis) shown in Table 6. In addition, we include fixed time effects to control for the year a campaign was launched. Lastly in our regression models, the Durbin Watson lies between 1.5-1.6, which is in line with the 0-4 range.

In the fifth assumption, the variance of the errors should be consistent for all observations, such that no heteroscedasticity exists. To be able to rely on our regressions results, our residuals should have constant variance. Firstly, certain control variables have been redefined such that the impact of this size differential can be minimised. Our independent variable – Future tense percentage takes total future tense usage divided by the total count of words used in the campaign promise. Likewise for default contribution amounts, we elect to take the average of the four default contributions listed. Second given that our dependent variable exhibits strong right skew, a log transformation was the most optimal in achieving homoscedasticity.

In our model shown in Table 7, it is likely homoscedasticity exists given that the residuals versus fitted values plot have the same scatter.

In the sixth assumption of ensuring that no independent variable is a perfect linear function of other explanatory variables, we ascertain if our independent variables present multicollinearity issues.

A majority of control variables exhibit low to close to no correlation with each other, indicating independentness. However, we do noticed strong negative correlation between Creator type and our independent variable Avg custom amount. However, given that Creator type is a control variable, and we are more concern with strong collinearity between our independent variables. Our indepenent variables exhibit a positive, but moderate correlation coefficent, which is echos our H3, that higher usage of future tense is accompanied with higer defualt contributions. However, to further examine mutilcollinearity in our variables we proceed with calculating our variance inflation factors.

Checking for the variance inflation factors (VIFs) in our regression models, we confirm that multicollinearity is not a concern (maximum observable VIF was 1.358). We also note the possibility that structural multicollinearity could have existed, given that we are creating a model term based on other existing terms (interaction effect between our independent variables), however the VIF is also within acceptable range at 1.358 as shown in Table 8.

Lastly, also OLS does not require for the error terms to be normally distributed to produced unbiased estimates with minimum variance, satisfying this assumption will enable us to perform statistical hypothesis testing and generate reliable confidence intervals. Thus, for us to assume the errors are normally distributed, we depict the histogram illustrating the frequency distribution of the residuals shown in Table 9. We observed that our error terms follow a normal distribution, given the bell-shaped curve.

Based on the results of these tests, we are satisfied that the assumptions underpinning the regression analyses are met.

Interpretation of results

Table 2: Impact of Cheap Talk on Actual Donation Amount

	Model 1	Model 2	Model 3
DV: Actual Donation Amount (Log)			
Campaign Goal (Log)	0.584***	0.615***	0.614***
	(0.010)	(0.011)	(0.010)
Tax Deductible	0.150*	0.126	0.140 *
	(0.083)	(0.083)	(0.083)
Campaign Duration	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Campaign Video	0.047	0.023	0.015
	(0.033)	(0.033)	(0.033)
Campaign Image	0.020*	0.014	0.014
	(0.010)	(0.010)	(0.010)
Number of words in campaign description	0.002***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)
Creator Type	0.184***	0.092***	0.074***
	(0.017)	(0.022)	(0.022)
Financial Size	0.094***	0.092***	0.089***
	(0.015)	(0.015)	(0.015)
Sector Type	-0.068***	-0.060***	-0.062***
	(0.013)	(0.013)	(0.013)
Campaign Start Year	0.101***	0.097***	0.093***
	(0.012)	(0.012)	(0.012)
Campaign Frequency	-0.006***	-0.006***	-0.007***
	(0.001)	(0.001)	(0.001)
Campaign Promises (Log)		3.016***	-18.267***
		(0.872)	(3.778)
Default Contributions (Log)		-0.079***	-0.092***
		(0.010)	(0.010)
Campaign Promises (Log) X Default Contribution (Log)			4.472***
			(0.772)
Number of Observations	6972	6972	6972
R2	0.483	0.487	0.490
Residual Standard Errors	1.631	1.617	1.609
Predicted R2	0.481	0.484	0.487

Note. DV = dependent variable. Standard Errors (SE) are reported in the parenthesis.
The asterisk ***, ** and * denoted significance at the 1%,5% and 10% levels respectively.
Data sources showing raw regression table can be found in Table 11.1,11.2 and 11.3 for Model 1,2,3.

Model 1 consists of all the control variables previously mentioned and fixed time effects. Model 1 shows that most control variable are significant, which echoes prior results and our preliminary assessment of the relationship each control variable who have with our dependent variable.

The only non-significant control variables were Tax Deductibility Status, use of Campaign video and campaign images. The R2 of 0.483 shows that Model 1 explains variation in our dependent variable adequately, with a residual standard error of 1.631 and predicted R2 of 0.481.

In Model 2, we include our independent variables; Campaign Promises and Default Contributions. The results support H1, that future tense usage positively affects actual donation amounts (b=3.01, p=0.001). The results also support H2, that default contributions negatively affect actual donation amount (b= -0.0792, p=0.000). The overall model also shows improved R2 of 0.487, with a lower residual standard error of 1.617 and improved predicted R2 of 0.485. We conclude that making future plans and telling donors how donations would be used leads to high donations raised. We also conclude that suggesting higher default contributions leads to lower donations raised.

In Model 3, we find that the interaction effect between future tense usage and default contributions offer support for H3, in that the interaction is positive and high significant for actual donation amount (b=4.471, p= 0.000).

We calculate the average marginal effects for the interaction at different levels of campaign promises (0, 0.04, 0.1) and depict the corresponding effect sizes shown in Table 10. This proves that the default contribution amount has on actual donation amount is different for different values of future tense usage.

These results affirm that if suggested default contribution were at high levels, higher levels of future results in high actual donation amounts. It is also worth emphasizing that at low levels of default contributions, higher levels of future tense usage results in lower actual donation amounts.

Robustness Checks

Table 3: Impact of Cheap Talk on Distinct Donors

	Model 1	Model 2	Model 3
DV: Distinct Donors (Log)			
Campaign Goal (Log)	0.347*** (0.009)	0.394*** (0.009)	0.394*** (0.009)
Tax Deductible	-0.007 (0.075)	0.040 (0.075)	-0.045 (0.075)
Campaign Duration	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Campaign Video	0.035 (0.029)	-0.000 (0.029)	0.002 (0.029)
Campaign Image	0.029*** (0.009)	0.022** (0.009)	0.026** (0.009)
Number of words in campaign description	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
Creator Type	0.162*** (0.016)	0.018 (0.020)	0.028 (0.020)
Financial Size	0.094*** (0.014)	0.092*** (0.014)	0.092*** (0.014)
Sector Type	-0.036*** (0.011)	-0.025** (0.011)	-0.024** (0.011)
Campaign Start Year	0.049*** (0.011)	0.044*** (0.011)	0.045*** (0.011)
Campaign Frequency	-0.005*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)
Campaign Promises (Log)		2.906*** (0.782)	8.911*** (3.396)
Default Contributions (Log)		-0.116*** (0.009)	-0.112*** (0.009)
Campaign Promises (Log) X Default Contribution (Log)			-1.262* (0.694)
Number of Observations	6972	6972	6972
R2	0.336	0.351	0.352
Residual Standard Errors	1.330	1.299	1.299
Predicted R2	0.333	0.348	0.348

Note. DV = dependent variable. Standard Errors (SE) are reported in the parenthesis.
The asterisk ***, ** and * denoted significance at the 1%,5% and 10% levels respectively.
Data sources showing raw regression table can be found in Table 12.1,12.2 and 12.3 for Model 1,2,3.

We proceeded to rerun our Model 1, 2 and 3 through alternate independent variables, Distinct Donors. We find the effects like those that result from our main analysis, with a minor difference in the significance of the interaction effect.

The second dependent variable, total donors, is a non-negative count variable. As with most count data, we noticed that the variables have a non-normal, over-dispersed distribution that includes a high number of low-frequency occurrences (Nah & Saxton, 2013) Thus, OLS estimates would results in skew distribution, which required us to log transform it.

The behaviour of our control variables that exists in Model 1, when coupled with our alternate dependent variable echoes that of our main model. Like our main model, most control variables are significant, except for Tax Deductibility Status and Campaign video use. However, use of campaign imagery is a significant variable when it comes to having more distinct donors. The R2 of 0.336 shows that Model 1 in our Robustness check explains variation in our dependent variable adequately, with a residual standard error of 1.330 and predicted R2 of 0.333.

In Model 2, we include our independent variables; Campaign Promises and Default Contribution. The results support H1, that strong future tense usage exhibited in Campaign Promises positively affects distinct donors (b=2.906, p=0.000). The results also support H2, that Default Contributions negatively affects distinct donors (b= -0.116, p=0.000). The overall model also shows improved R2 of 0.351, with a lower residual standard error of 1.299 and improved predicted R2 of 0.348.

We can conclude that making future plans and telling donors how donations would be used leads to more distinct doners donating raised. We also conclude that suggesting higher default contributions leads to lower low number of donors donating.

Cheap Talk and Effect of Heuristics

Crawford and Sobel (1982) establishes how the receiver responds to the signals, determines the effort or the cost a signaler is required to exert to put out that signal. In addition, a donor's specific response to Cheap Talk is multifaceted. How different equilibria arise in a DCF environment can be attributed to differences in donor's having diverse characteristics, varied information processing abilities, beliefs, and value systems. Each donor's unique perspective and perception results in a variety of response when subjected to Cheap Talk.

This notion anchored on a donor's unique response also compliments the cognitive view (Kackovic & Wijnberg, 2022), which advocates that when faced with uncertain and complex environments, people resort to heuristics to process information. Traditional signaling theory predicts that both signalers and receivers function as rational actors, update conditional beliefs when faced with new findings, to maintain a signaling equilibrium. However, a cognitive view places limitations on both signaler and receiver rationality, which can affect judgment and subsequent responses. Heuristics can also explain why Cheap Talk can be effective and offer the circumstances in which they become highly salient and evoke processing by receivers (Tumasjan et al., 2021)). Lastly, heuristics can also explain why the "default-distraction" effect, in which other cues found in charitable campaign such as positive charity information was diminished can result in cheap talk hurting fund raising efforts.

Discussion and Conclusion

Our results show that NPO that utilise the costless signals related to making promises of how donor funds would be used in the future has a positive impact on total funds raised.

Additionally, the costless signal of suggested default contributions has a negative impact on total funds raised. Thus, we illustrate that a costless signal such as “cheap talk” can both help and hurt the fund raiser’s objectives, depending on the form “cheap talk” takes.

Lastly, in our third important finding, is that positive interaction effect making promises of how donor funds would be use on the relationship between an NPO suggested default contribution amount and total fund raised. In short, although donors can be turned off by high default contribution amount, the relative stronger use of future tense provides greater context, and when view holistically, provides greater credibility and justification for higher amounts.

This study, however, is not without limitations. First, it is confined to the novel context of donation-based crowdfunding. Second, although the dataset is obtained from the country’s owned donation-based crowdfunding platform, focusing solely on Singapore will inhibit us from capturing cultural differences related to costless signals deployed by NPOs based in other countries. Third, in addition for controlling for the scale and sector of the NPO, use of other more fine-grained measures of NPO volunteer base and social media reach might have helped to better allow us to create a regression model that is better mitigated against omitted variable bias.

Limitations and suggestions for future research

These limitations open doors to future research, and we believe our study provides valuable insight to practitioners and academics related to the signaling dynamics found in donation-based crowd funding. More importantly, our findings illustrate that costless signals can add value for the campaign organiser, but also have costly consequences as well. Thus, NPOs should be more aware of the type of messages and use of tense in campaign promises, and the size of a suggested default contribution. If NPOs want to suggest high default contribution amounts, care must be taken to also embed strong future use to justify why default amounts are high to begin with. Whether or not these promises are kept, or whether these plans will be followed through by the NPO, does not seem like a concern to total fund raising success. Therefore as a suggestion to further studies, research can be conducted on how whether NPOs are indeed punished (in terms of poorer funding rates of future campaigns) , if the NPO was found to not follow through with a campaign promise.

Connelly et al. (2011) pointed out that firms can increase signal effectiveness by increasing signal frequency - sending a larger spectrum of observable signals or by increasing the number of signals emitted. Thus by signalling repetitively, signalers can attempt to reduce information asymmetry in a constant and consistent fashion. Connelly et al. (2011)also notes that signalers can either use multiple signals to convey the same message, or the sending out of multiple signals from the same source.

In the case of scarce objective information, an NPO operating in a new fund raising platform, or a donor unfamiliar with the donation base crowd funding context, less costly signals could still act as of value to receivers (Danilov & Sliwka, 2013; Loewenstein et al., 2013). Thus,

under certain circumstances, an NPO hosting multiple donation based crowd funding campaigns simultaneously, could help promote signal consistency which would mitigate the problem of communication becoming less effective as conflicting signals confuse the receiver (Connelly et al., 2011).

We first note that that NPOs should still not haphazardly appeal to the public on multiple fronts. Leslie and Ramey (1988) survey study found that if higher education institutions solicited contributions form a larger proportion of alumni that would result in receiving a lower average contribution. Thus, reflecting a decreasing marginal utility of the number of persons solicited. In addition, Van Diepen et al. (2009) point out that increasing the number of solicitations may inspire "donor fatigue" and may lower the average contribution. Van Diepen et al. (2009) states that "donor fatigue" is propounded by the phenomena that one who responds to a solicitation for contribution will attract new solicitations. Thus, naturally, with increasing number of solicitations for charitable contributions, that standard response is to reject an appeal (Diamond & Noble, 2001).

However, we find that signal frequency could act as a positive moderator for costless signals for two reasons.

First, Lindskold et al. (1977) show that actively soliciting contributions rather than presenting a passive opportunity to give increases the propensity to give. In addition, some survey studies in the realm of marketing and sociology have generally found an association between a higher number of solicitations for charitable contributions with increased philanthropic activity (Lee & Farrell, 2003) In addition, mutual campaigns from the same NPO, serve to inform the donor

of the potential beneficiaries that the NPO provides for, heightening the awareness of need(Polonsky et al., 2002). Thus, an NPO running multiple campaigns, increases its opportunities for solicitation.

Second, the notion that costless signals can become even more valuable given higher consistency (in terms of multiple ongoing campaigns promoting the same beneficiary but from different campaign originators) or higher frequency (multiple ongoing campaigns promoting different beneficiaries from the same campaign originator) (Connelly et al., 2011) is worth further investigation. We purport that costless signals would be a great benefactor of the illusory truth effect, a phenomenon firstly illustrated by Hasher et al. (1977). Hasher et al. (1977) experiments showed that subjects would judge repeated statements as being probably more true than non-repeated statements, in a situation where there was no verifying information available concerning the actual truth or falsity of the statements. Thus, providing empirical support to the idea that "if people are told something often enough, they'll believe it."

Appendix

Table 4: Residual Plot for Campaign Promises

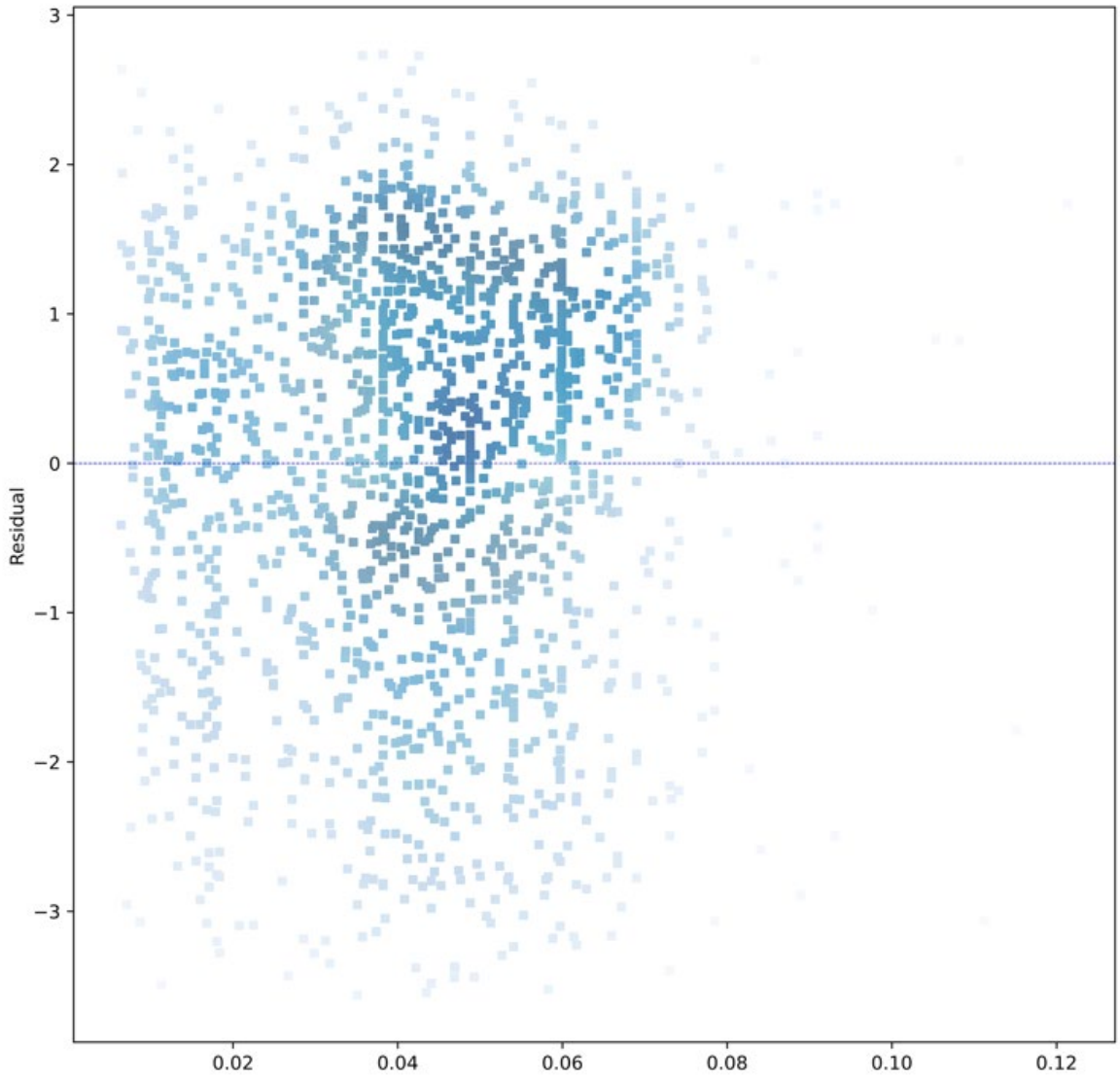

Table 5: Residual Plot of Default Contribution Amount

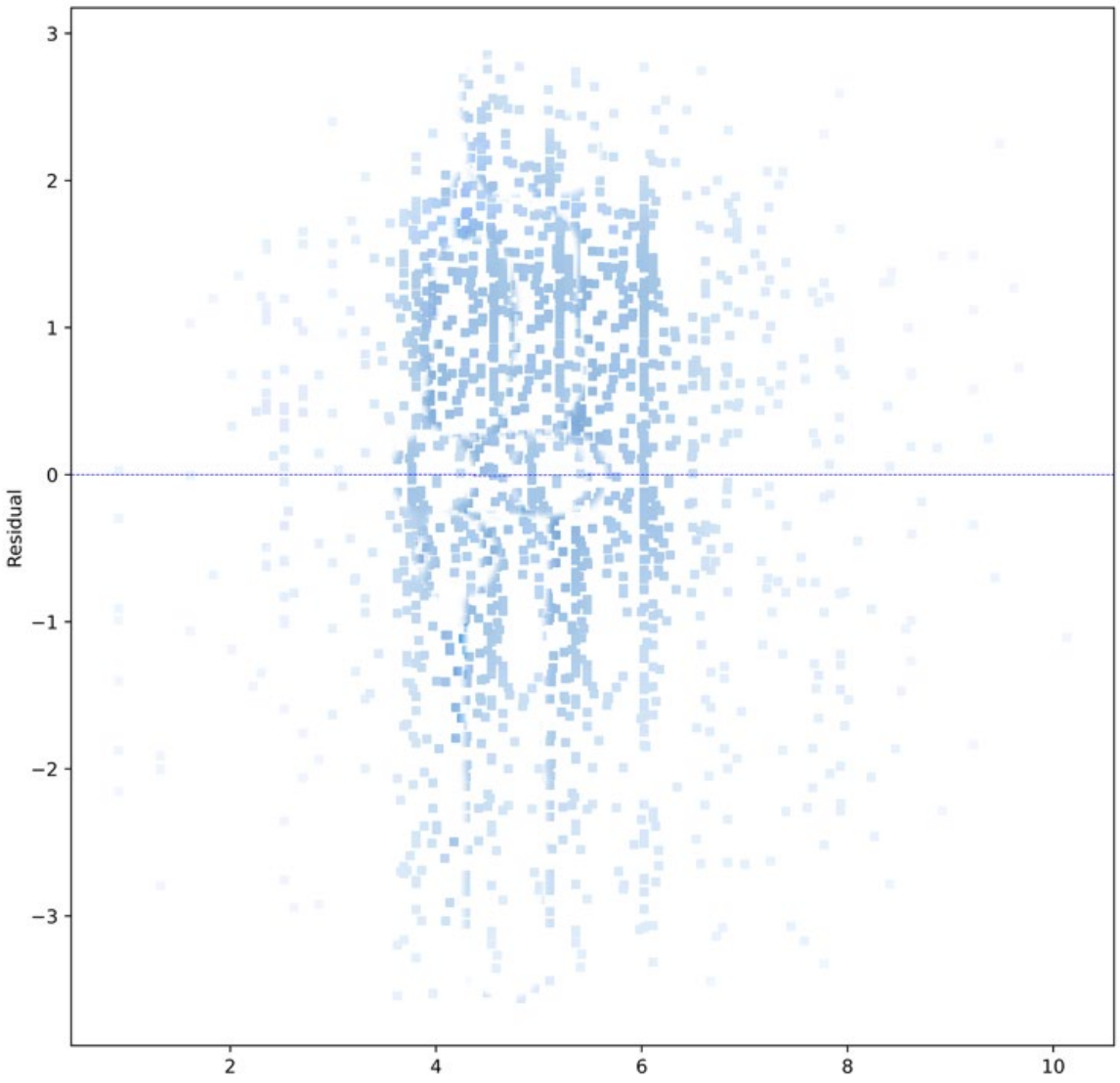

Table 6: Scatter plot between residuals (x-axis) and target variable values (y-axis)

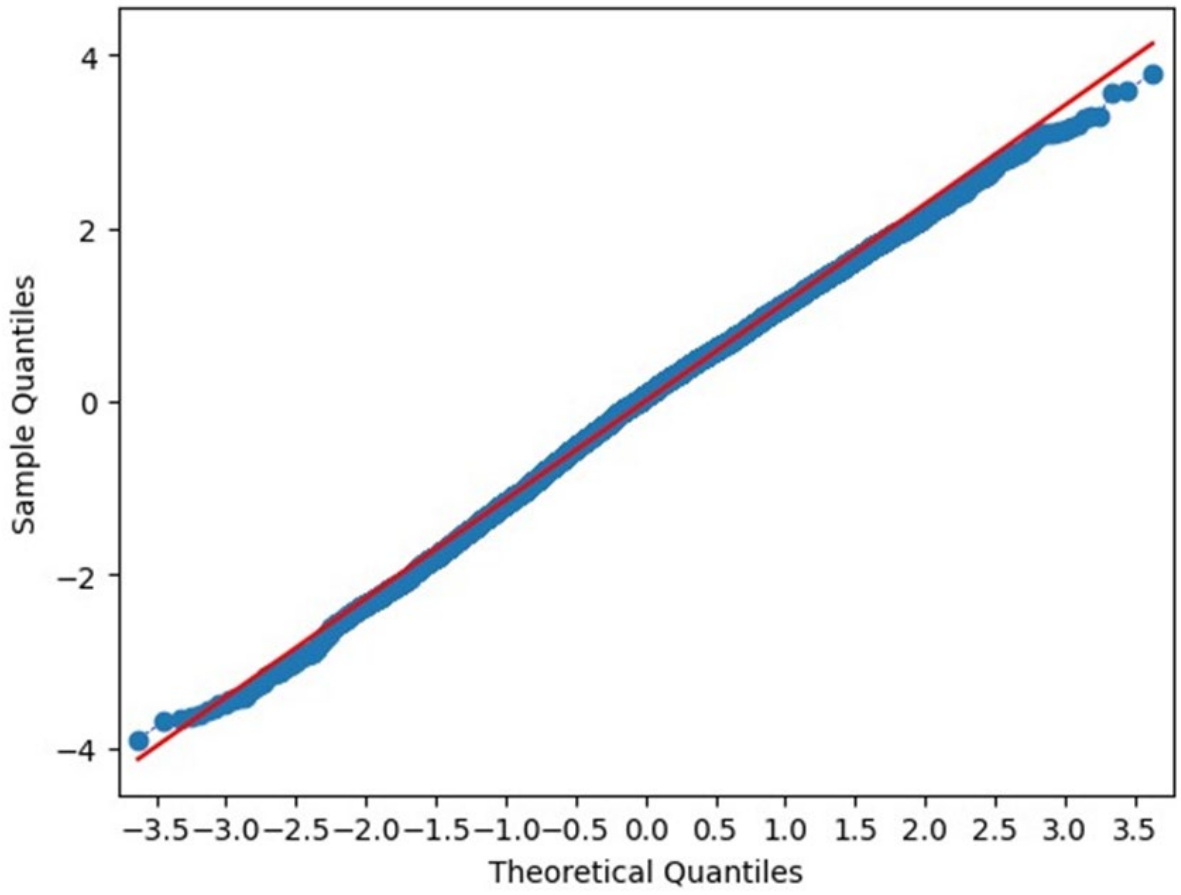

Table 7: Residuals versus fitted values

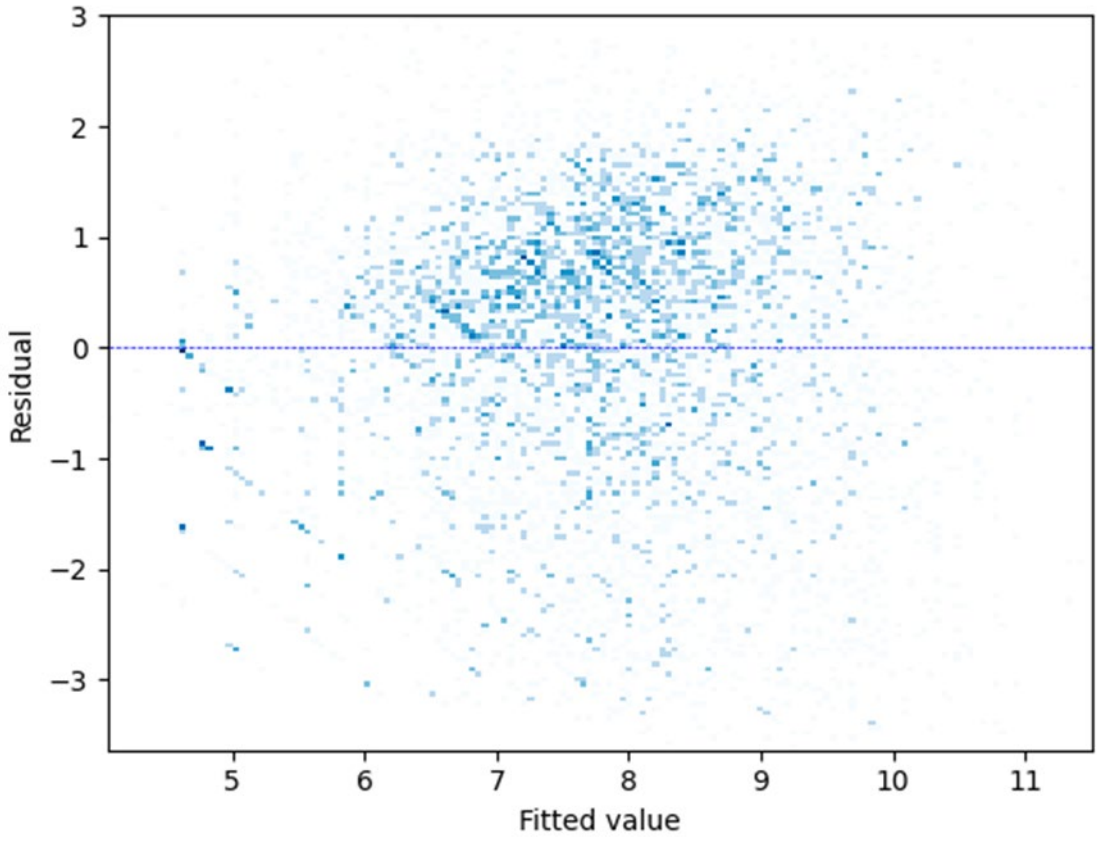

Table 8: VIF based on Model 3

Model 3 VIF	
Actual Donation Amount (Log)	1.212
Campaign Goal (Log)	1.251
Tax Deductibility	1.297
Campaign Duration	1.221
Campaign Video	1.040
Campaign Image Number	1.078
Number of words describing campaign	1.119
Creator Type	1.846
Financial Size	1.336
Sector type	1.040
Campaign Start Year category	1.121
Campaign frequency	1.373
Campaign Promise (Log)	1.309
Default Contribution (Log)	1.244
Campaign Promises (Log) x Default Contribution (Log)	1.358

Table 9: Frequency Distribution of the Residuals

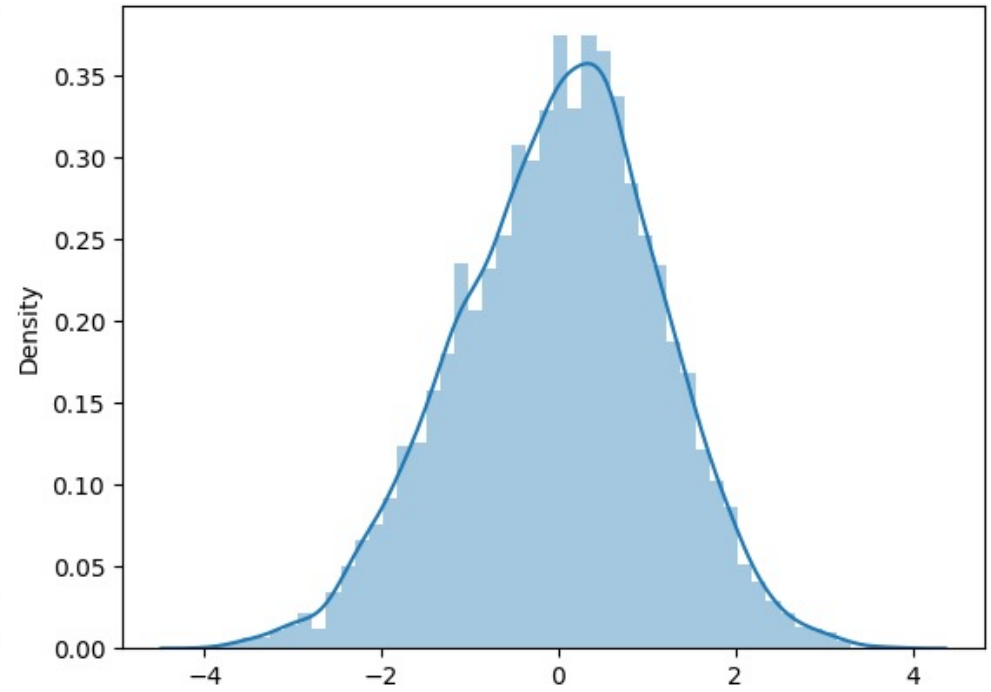

Table 10: Average marginal effects for the interaction at different levels of Campaign promises

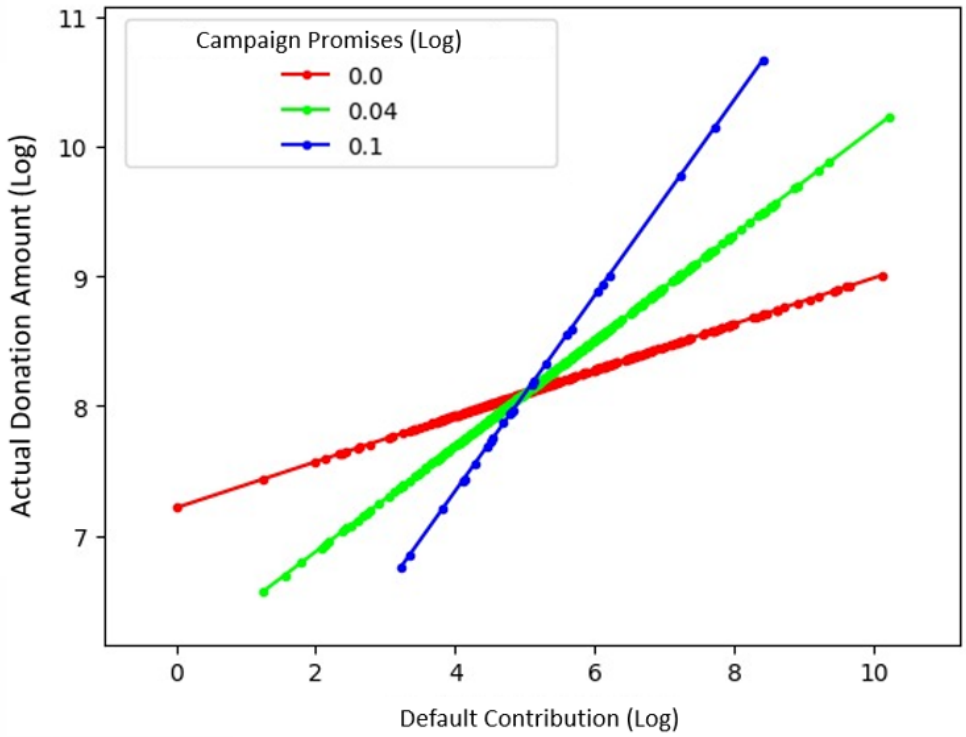

Table 11.1: Model 1 with all control variables

OLS Regression Results

Dep. Variable:	Log_Actual_Donation_Amount	R-squared:	0.483
Model:	OLS	Adj. R-squared:	0.482
Method:	Least Squares	F-statistic:	590.2
Date:	Tue, 06 Jun 2023	Prob (F-statistic):	0.00
Time:	11:00:29	Log-Likelihood:	-11592.
No. Observations:	6972	AIC:	2.321e+04
Df Residuals:	6960	BIC:	2.329e+04
Df Model:	11		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	1.0893	0.136	7.985	0.000	0.822	1.357
Log_Campaign_Goal	0.5840	0.010	60.295	0.000	0.565	0.603
NPO_Ipc_Status_For_Tax_Deductibility	0.1502	0.083	1.803	0.071	-0.013	0.313
Campaign_Duration	0.0011	0.000	7.320	0.000	0.001	0.001
Campaign_Video	0.0473	0.033	1.450	0.147	-0.017	0.111
Campaign_Image_Number	0.0198	0.010	1.951	0.051	-9.65e-05	0.040
Number_of_words_describing_campaign	0.0023	0.000	9.757	0.000	0.002	0.003
Creator_Type	0.1838	0.017	10.618	0.000	0.150	0.218
Scale_type	0.0938	0.015	6.142	0.000	0.064	0.124
Sector_type	-0.0683	0.013	-5.442	0.000	-0.093	-0.044
Campaign_Start_Year_category	0.1011	0.012	8.531	0.000	0.078	0.124
Campaign_frequency	-0.0058	0.001	-8.932	0.000	-0.007	-0.005

Omnibus:	300.073	Durbin-Watson:	1.612
Prob(Omnibus):	0.000	Jarque-Bera (JB):	326.894
Skew:	-0.514	Prob(JB):	1.04e-71
Kurtosis:	2.739	Cond. No.	1.83e+03

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 1.83e+03. This might indicate that there are
strong multicollinearity or other numerical problems.

Table 11.2: Model 2 with all control variables and our key variables

OLS Regression Results

Dep. Variable:	Log_Actual_Donation_Amount	R-squared:	0.487
Model:	OLS	Adj. R-squared:	0.486
Method:	Least Squares	F-statistic:	508.4
Date:	Tue, 06 Jun 2023	Prob (F-statistic):	0.00
Time:	11:03:11	Log-Likelihood:	-11562.
No. Observations:	6972	AIC:	2.315e+04
Df Residuals:	6958	BIC:	2.325e+04
Df Model:	13		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	1.0748	0.136	7.907	0.000	0.808	1.341
Log_Campaign_Goal	0.6148	0.011	58.437	0.000	0.594	0.635
NPO_Ipc_Status_For_Tax_Deductibility	0.1225	0.083	1.474	0.141	-0.040	0.285
Campaign_Duration	0.0011	0.000	7.447	0.000	0.001	0.001
Campaign_Video	0.0232	0.033	0.711	0.477	-0.041	0.087
Campaign_Image_Number	0.0143	0.010	1.415	0.157	-0.006	0.034
Number_of_words_describing_campaign	0.0025	0.000	10.544	0.000	0.002	0.003
Creator_Type	0.0920	0.022	4.216	0.000	0.049	0.135
Scale_type	0.0923	0.015	6.068	0.000	0.062	0.122
Sector_type	-0.0597	0.013	-4.759	0.000	-0.084	-0.035
Campaign_Start_Year_category	0.0973	0.012	8.234	0.000	0.074	0.120
Campaign_frequency	-0.0064	0.001	-9.834	0.000	-0.008	-0.005
Log_Future_tense_percentage	3.0175	0.872	3.459	0.001	1.308	4.727
Log_avg_custom_amount	-0.0792	0.010	-7.834	0.000	-0.099	-0.059

Omnibus:	300.970	Durbin-Watson:	1.626
Prob(Omnibus):	0.000	Jarque-Bera (JB):	331.273
Skew:	-0.521	Prob(JB):	1.16e-72
Kurtosis:	2.764	Cond. No.	1.14e+04

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 1.14e+04. This might indicate that there are
strong multicollinearity or other numerical problems.

Table 11.3: Model 2 with all control variables, our key variables and interaction term

OLS Regression Results

Dep. Variable:	Log_Actual_Donation_Amount	R-squared:	0.490
Model:	OLS	Adj. R-squared:	0.489
Method:	Least Squares	F-statistic:	476.7
Date:	Tue, 06 Jun 2023	Prob (F-statistic):	0.00
Time:	11:05:45	Log-Likelihood:	-11545.
No. Observations:	6972	AIC:	2.312e+04
Df Residuals:	6957	BIC:	2.322e+04
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	1.1410	0.136	8.384	0.000	0.874	1.408
Log_Campaign_Goal	0.6135	0.010	58.432	0.000	0.593	0.634
NPO_Ipc_Status_For_Tax_Deductibility	0.1402	0.083	1.689	0.091	-0.022	0.303
Campaign_Duration	0.0011	0.000	7.416	0.000	0.001	0.001
Campaign_Video	0.0152	0.033	0.466	0.641	-0.049	0.079
Campaign_Image_Number	0.0135	0.010	1.335	0.182	-0.006	0.033
Number_of_words_describing_campaign	0.0026	0.000	10.810	0.000	0.002	0.003
Creator_Type	0.0736	0.022	3.346	0.001	0.030	0.117
Scale_type	0.0893	0.015	5.881	0.000	0.060	0.119
Sector_type	-0.0620	0.013	-4.948	0.000	-0.087	-0.037
Campaign_Start_Year_category	0.0933	0.012	7.900	0.000	0.070	0.116
Campaign_frequency	-0.0066	0.001	-10.184	0.000	-0.008	-0.005
Log_Future_tense_percentage	-18.2669	3.778	-4.836	0.000	-25.672	-10.862
Log_avg_custom_amount	-0.0926	0.010	-8.953	0.000	-0.113	-0.072
Log_future_tense_percentage_X_Log_avg_custom_amount	4.4715	0.772	5.790	0.000	2.958	5.985

Omnibus:	297.218	Durbin-Watson:	1.628
Prob(Omnibus):	0.000	Jarque-Bera (JB):	325.431
Skew:	-0.515	Prob(JB):	2.16e-71
Kurtosis:	2.755	Cond. No.	5.05e+04

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 5.05e+04. This might indicate that there are
strong multicollinearity or other numerical problems.

Table 12.1: Robustness Model 1 with all control variables

OLS Regression Results

Dep. Variable:	Log_Distinct_Donors	R-squared:	0.336
Model:	OLS	Adj. R-squared:	0.335
Method:	Least Squares	F-statistic:	320.2
Date:	Fri, 16 Jun 2023	Prob (F-statistic):	0.00
Time:	00:07:04	Log-Likelihood:	-10882.
No. Observations:	6972	AIC:	2.179e+04
Df Residuals:	6960	BIC:	2.187e+04
Df Model:	11		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	-1.3980	0.123	-11.348	0.000	-1.639	-1.156
Log_Campaign_Goal	0.3468	0.009	39.638	0.000	0.330	0.364
NPO_Ipc_Status_For_Tax_Deductibility	0.0066	0.075	0.088	0.930	-0.141	0.154
Campaign_Duration	0.0014	0.000	10.074	0.000	0.001	0.002
Campaign_Video	0.0352	0.029	1.196	0.232	-0.023	0.093
Campaign_Image_Number	0.0294	0.009	3.211	0.001	0.011	0.047
Number_of_words_describing_campaign	0.0026	0.000	11.797	0.000	0.002	0.003
Creator_Type	0.1621	0.016	10.370	0.000	0.131	0.193
Scale_type	0.0938	0.014	6.800	0.000	0.067	0.121
Sector_type	-0.0360	0.011	-3.177	0.001	-0.058	-0.014
Campaign_Start_Year_category	0.0494	0.011	4.615	0.000	0.028	0.070
Campaign_frequency	-0.0050	0.001	-8.506	0.000	-0.006	-0.004

Omnibus:	32.659	Durbin-Watson:	1.547
Prob(Omnibus):	0.000	Jarque-Bera (JB):	33.007
Skew:	-0.165	Prob(JB):	6.80e-08
Kurtosis:	2.930	Cond. No.	1.83e+03

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 1.83e+03. This might indicate that there are
strong multicollinearity or other numerical problems.

Table 12.2: Robustness Model 2 with all control variables and our key variables

OLS Regression Results

Dep. Variable:	Log_Distinct_Donors	R-squared:	0.351
Model:	OLS	Adj. R-squared:	0.350
Method:	Least Squares	F-statistic:	290.0
Date:	Fri, 16 Jun 2023	Prob (F-statistic):	0.00
Time:	00:09:05	Log-Likelihood:	-10800.
No. Observations:	6972	AIC:	2.163e+04
Df Residuals:	6958	BIC:	2.172e+04
Df Model:	13		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	-1.4095	0.122	-11.565	0.000	-1.648	-1.171
Log_Campaign_Goal	0.3940	0.009	41.769	0.000	0.376	0.412
NPO_Ipc_Status_For_Tax_Deductibility	-0.0404	0.075	-0.542	0.588	-0.186	0.106
Campaign_Duration	0.0014	0.000	10.253	0.000	0.001	0.002
Campaign_Video	-0.0003	0.029	-0.011	0.991	-0.058	0.057
Campaign_Image_Number	0.0222	0.009	2.442	0.015	0.004	0.040
Number_of_words_describing_campaign	0.0028	0.000	13.224	0.000	0.002	0.003
Creator_Type	0.0176	0.020	0.897	0.370	-0.021	0.056
Scale_type	0.0915	0.014	6.708	0.000	0.065	0.118
Sector_type	-0.0246	0.011	-2.183	0.029	-0.047	-0.003
Campaign_Start_Year_category	0.0436	0.011	4.115	0.000	0.023	0.064
Campaign_frequency	-0.0060	0.001	-10.195	0.000	-0.007	-0.005
Log_Future_tense_percentage	2.9061	0.782	3.716	0.000	1.373	4.439
Log_avg_custom_amount	-0.1160	0.009	-12.799	0.000	-0.134	-0.098

Omnibus:	39.180	Durbin-Watson:	1.582
Prob(Omnibus):	0.000	Jarque-Bera (JB):	39.579
Skew:	-0.179	Prob(JB):	2.54e-09
Kurtosis:	2.909	Cond. No.	1.14e+04

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 1.14e+04. This might indicate that there are
strong multicollinearity or other numerical problems.

Table 12.3: Robustness Model 3 with all control variables, our key variables and interaction term

OLS Regression Results

Dep. Variable:	Log_Distinct_Donors	R-squared:	0.352
Model:	OLS	Adj. R-squared:	0.350
Method:	Least Squares	F-statistic:	269.6
Date:	Fri, 16 Jun 2023	Prob (F-statistic):	0.00
Time:	00:16:16	Log-Likelihood:	-10799.
No. Observations:	6972	AIC:	2.163e+04
Df Residuals:	6957	BIC:	2.173e+04
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	-1.4282	0.122	-11.678	0.000	-1.668	-1.188
Log_Campaign_Goal	0.3944	0.009	41.805	0.000	0.376	0.413
NPO_Ipc_Status_For_Tax_Deductibility	-0.0453	0.075	-0.608	0.543	-0.191	0.101
Campaign_Duration	0.0014	0.000	10.270	0.000	0.001	0.002
Campaign_Video	0.0019	0.029	0.066	0.947	-0.055	0.059
Campaign_Image_Number	0.0224	0.009	2.468	0.014	0.005	0.040
Number_of_words_describing_campaign	0.0028	0.000	13.135	0.000	0.002	0.003
Creator_Type	0.0227	0.020	1.151	0.250	-0.016	0.061
Scale_type	0.0923	0.014	6.767	0.000	0.066	0.119
Sector_type	-0.0239	0.011	-2.126	0.034	-0.046	-0.002
Campaign_Start_Year_category	0.0447	0.011	4.215	0.000	0.024	0.066
Campaign_frequency	-0.0059	0.001	-10.071	0.000	-0.007	-0.005
Log_Future_tense_percentage	8.9111	3.394	2.625	0.009	2.257	15.565
Log_avg_custom_amount	-0.1122	0.009	-12.065	0.000	-0.130	-0.094
Log_future_tense_percentage_X_Log_avg_custom_amount	-1.2615	0.694	-1.818	0.069	-2.622	0.099

Omnibus:	40.021	Durbin-Watson:	1.584
Prob(Omnibus):	0.000	Jarque-Bera (JB):	40.435
Skew:	-0.181	Prob(JB):	1.66e-09
Kurtosis:	2.908	Cond. No.	5.05e+04

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 5.05e+04. This might indicate that there are
strong multicollinearity or other numerical problems.

Bibliography

Ahlers, G. K. C., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in Equity Crowdfunding. *Entrepreneurship Theory and Practice*, *39*(4), 955-980. https://doi.org/10.1111/etap.12157

Althoff, T., Jindal, P., & Leskovec, J. (2017, 2017). Online Actions with Offline Impact.

Andreoni, J., & Payne, A. (2003). Do Government Grants to Private Charities Crowd Out Giving or Fund-Raising? *American Economic Review*, *93*, 792-812. https://doi.org/10.1257/000282803322157098

Anglin, A., Short, J., Drover, W., Stevenson, R., McKenny, A., & Allison, T. (2018). The power of positivity? The influence of positive psychological capital language on crowdfunding performance. *Journal of Business Venturing*, *33*. https://doi.org/10.1016/j.jbusvent.2018.03.003

Aprilia, L., & Wibowo, S. S. (2017). The Impact of Social Capital on Crowdfunding Performance. *The South East Asian Journal of Management*, *Vol. 11*.

Austen-Smith, D. (1993). Information and influence: Lobbying for agendas and votes. *American Journal of Political Science*, *37*, 799.

Bapna, S. (2019). Complementarity of Signals in Early-Stage Equity Investment Decisions: Evidence from a Randomized Field Experiment. *Management Science*, *65*(2), 933-952. https://EconPapers.repec.org/RePEc:inm:ormnsc:v:65:y:2019:i:2:p:933-952

Basil, D. Z., Ridgway, N. M., & Basil, M. D. (2006). Guilt appeals: The mediating effect of responsibility [https://doi.org/10.1002/mar.20145]. *Psychology & Marketing*, *23*(12), 1035-1054. https://doi.org/https://doi.org/10.1002/mar.20145

Baum, J. A. C., & Silverman, B. (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing*, *19*(3), 411-436. https://EconPapers.repec.org/RePEc:eee:jbvent:v:19:y:2004:i:3:p:411-436

Begum, Y. (2022). *Giving.sg platform received record donations of S$95.5 million in 2021: NVPC*. Channel News Asia https://www.channelnewsasia.com/singapore/givingsg-record-955million-donations-year-2021-2445481

Bekkers, R., & Wiepking, P. (2007). Generosity and Philanthropy: A Literature Review. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1015507

Bekkers, R., & Wiepking, P. (2011). A Literature Review of Empirical Studies of Philanthropy. *Nonprofit and Voluntary Sector Quarterly*, *40*(5), 924-973. https://doi.org/10.1177/0899764010380927

Bergh, D., Connelly, B., Ketchen, D., & Shannon, L. (2014). Signalling Theory and Equilibrium in Strategic Management Research: An Assessment and a Research Agenda. *Journal of Management Studies*, *51*. https://doi.org/10.1111/joms.12097

Berliner, L. S., & Kenworthy, N. (2017). Producing a worthy illness: Personal crowdfunding amidst financial crisis. *Social science & medicine*, *187*, 233-242.

Bhattacharya, S. (1979). Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy. *The Bell Journal of Economics*, *10*(1), 259. https://doi.org/10.2307/3003330

Bliege Bird, R., & Eric. (2005). Signaling Theory, Strategic Interaction, and Symbolic Capital. *Current Anthropology*, *46*(2), 221-248. https://doi.org/10.1086/427115

Bolino, M., Long, D., & Turnley, W. (2016). Impression Management in Organizations: Critical Questions, Answers, and Areas for Future Research. *Annual Review of Organizational Psychology and Organizational Behavior*, *3*(1), 377-406. https://doi.org/10.1146/annurev-orgpsych-041015-062337

Brennan, M. J., & Hughes, P. J. (1991). Stock Prices and the Supply of Information. *46*(5), 1665. https://doi.org/10.2307/2328568
Carter, R. B., & Power, M. L. (2012). Reputational Signals and Capital Acquisition When Insurance Companies Go Public. *The Geneva Papers on Risk and Insurance - Issues and Practice*, *37*(3), 485-508. https://doi.org/10.1057/gpp.2012.26
Certo, S. T. (2003). Influencing initial public offering investors with prestige: Signaling with board structure. *The Academy of Management Review*, *28*(3), 432-446. https://doi.org/10.2307/30040731
Certo, S. T., Daily, C. M., & Dalton, D. R. (2001). Signaling Firm Value through Board Structure: An Investigation of Initial Public Offerings. *Entrepreneurship Theory and Practice*, *26*(2), 33-50. https://doi.org/10.1177/104225870102600202
Charities Unit, M. o. C., Community and Youth. (2021). *Commissioner of Charities Annual Report 2020*. Singapore: Charities Unit, Ministry of Culture, Community and Youth
Chen, X.-P., Yao, X., & Kotha, S. (2009). Entrepreneur Passion and Preparedness in Business Plan Presentations: A Persuasion Analysis of Venture Capitalists' Funding Decisions. *The Academy of Management Journal*, *52*(1), 199-214. http://www.jstor.org/stable/40390282
Chen, Y., Zhou, S., Jin, W., & Chen, S. (2023). Investigating the determinants of medical crowdfunding performance: a signaling theory perspective. *Internet Research*, *33*(3), 1134-1156. https://doi.org/10.1108/INTR-09-2021-0652
Choy, K., & Schlagwein, D. (2016). Crowdsourcing for a Better World: On the Relation Between IT Affordances and Donor Motivations in Charitable Crowdfunding. *Information Technology &amp People*, *29*. https://doi.org/10.1108/ITP-09-2014-0215
Clough, D. R., Fang, T. P., Vissa, B., & Wu, A. (2019). Turning Lead into Gold: How Do Entrepreneurs Mobilize Resources to Exploit Opportunities? *Academy of Management Annals*, *13*(1), 240-271. https://doi.org/10.5465/annals.2016.0132
Collewaert, V., Vanacker, T., Anseel, F., & Bourgois, D. (2021). The sandwich game: Founder-CEOs and forecasting as impression management. *Journal of Business Venturing*, *36*(1), 106075. https://doi.org/https://doi.org/10.1016/j.jbusvent.2020.106075
Colombo, M. G., Franzoni, C., & Rossi–Lamastra, C. (2015). Internal Social Capital and the Attraction of Early Contributions in Crowdfunding. *Entrepreneurship Theory and Practice*, *39*(1), 75-100. https://doi.org/10.1111/etap.12118
Colombo, O. (2021). The Use of Signals in New-Venture Financing: A Review and Research Agenda. *Journal of Management*, *47*(1), 237-259. https://doi.org/10.1177/0149206320911090
Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39-67. https://doi.org/10.1177/0149206310388419
Crawford, V. P., & Sobel, J. (1982). Strategic Information Transmission. *Econometrica*, *50*(6), 1431-1451. https://doi.org/10.2307/1913390
Danilov, A., & Sliwka, D. (2013). *Can Contracts Signal Social Norms? Experimental Evidence*. https://EconPapers.repec.org/RePEc:iza:izadps:dp7477
Dewally, M., & Ederington, L. (2006). Reputation, Certification, Warranties, and Information as Remedies for Seller-Buyer Information Asymmetries: Lessons from the Online Comic Book Market*. *The Journal of Business*, *79*(2), 693-729. https://doi.org/10.1086/499169
Di Pietro, F., Grilli, L., & Masciarelli, F. (2023). Talking about a revolution? Costly and costless signals and the role of innovativeness in equity crowdfunding. *Journal of*

Small Business Management, *61*(2), 831-862. https://doi.org/10.1080/00472778.2020.1816435
Diamond, W., & Kashyap, R. (2006). Extending Models of Prosocial Behavior to Explain University Alumni Contributions1. *Journal of Applied Social Psychology*, *27*, 915-928. https://doi.org/10.1111/j.1559-1816.1997.tb00278.x
Diamond, W. D., & Noble, S. M. (2001). Defensive responses to charitable direct mail solicitations. *Journal of Interactive Marketing*, *15*(3), 2-12. https://doi.org/https://doi.org/10.1002/dir.1012
Eckel, C., & Grossman, P. (2003). Rebate versus matching: does how we subsidize charitable contributions matter? *Journal of Public Economics*, *87*(3-4), 681-701. https://EconPapers.repec.org/RePEc:eee:pubeco:v:87:y:2003:i:3-4:p:681-701
Farrell, J., & Gibbons, R. (1989). Cheap Talk with Two Audiences. *American Economic Review*, *79*(5), 1214-1223. https://EconPapers.repec.org/RePEc:aea:aecrev:v:79:y:1989:i:5:p:1214-23
Farrell, J., & Rabin, M. (1996). Cheap Talk. *Journal of Economic Perspectives*, *10*(3), 103-118. https://doi.org/10.1257/jep.10.3.103
Fazio, L., Brashier, N., Payne, B., & Marsh, E. (2015). Knowledge Does Not Protect Against Illusory Truth. *Journal of experimental psychology. General*, *144*. https://doi.org/10.1037/xge0000098
Foundation, C. A. (2022). *Charity Landscape Report 2022*. www.cafonline.org
Gardner, W. L., & Avolio, B. J. (1998). *The charismatic relationship: A dramaturgical perspective* [doi:10.2307/259098].
Gleasure, R., & Feller, J. (2016). Does Heart or Head Rule Donor Behaviors in Charitable Crowdfunding Markets? *International Journal of Electronic Commerce*, *20*(4), 499-524. https://doi.org/10.1080/10864415.2016.1171975
Goswami, I., & Urminsky, O. (2016). When should the Ask be a Nudge? The Effect of Default Amounts on Charitable Donations. *Journal of Marketing Research*, *53*(5), 829-846. https://doi.org/10.1509/jmr.15.0001
Green, D. P., Kahneman, D., & Kunreuther, H. (1994). How the Scope and Method of Public Funding Affect Willingness to Pay for Public Goods. *The Public Opinion Quarterly*, *58*(1), 49-67. http://www.jstor.org/stable/2749423
Guisinger, A., & Smith, A. (2002). Honest Threats: The Interaction of Reputation and Political Institutions in International Crises. *The Journal of Conflict Resolution*, *46*(2), 175-200. http://www.jstor.org/stable/3176171
Gulati, R., & Higgins, M. (2003). Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, *24*, 127-144. https://doi.org/10.1002/smj.287
Gupta, A. K., Govindarajan, V., & Malhotra, A. (1999). Feedback-Seeking Behavior within Multinational Corporations. *Strategic Management Journal*, *20*(3), 205-222. http://www.jstor.org/stable/3094103
Hasher, L., Goldstein, D., & Toppino, T. (1977). Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior*, *16*(1), 107-112. https://doi.org/https://doi.org/10.1016/S0022-5371(77)80012-1
Hayward, M. L. A., & Fitza, M. A. (2017). Pseudo-precision? Precise forecasts and impression management in managerial earnings forecasts. *Academy of Management Journal*, *60*, 1094-1116. https://doi.org/10.5465/amj.2014.0304
Ho, H.-C., Chiu, C. L., Mansumitrchai, S., Yuan, Z., Zhao, N., & Zou, J. (2021). The Influence of Signals on Donation Crowdfunding Campaign Success during COVID-19 Crisis. *International Journal of Environmental Research and Public Health*, *18*(14), 7715. https://doi.org/10.3390/ijerph18147715

Hsieh, G., Hudson, S. E., & Kraut, R. E. (2011). Donate for credibility. https://doi.org/10.1145/1978942.1979454
Janney, J. J., & Folta, T. B. (2003). Signaling through private equity placements and its impact on the valuation of biotechnology firms. *Journal of Business Venturing*, *18*(3), 361-380. https://EconPapers.repec.org/RePEc:eee:jbvent:v:18:y:2003:i:3:p:361-380
Kackovic, M., & Wijnberg, N. M. (2022). Artists Finding Galleries: Entrepreneurs Gaining Legitimacy in the Art Market. *Entrepreneurship Theory and Practice*, *46*(4), 1092-1116. https://doi.org/10.1177/1042258720950601
Karapandza, R. (2016). Stock returns and future tense language in 10-K reports. *Journal of Banking & Finance*, *71*, 50-61. https://doi.org/https://doi.org/10.1016/j.jbankfin.2016.04.025
Kim, Y., Huang, J., & Emery, S. (2016). Garbage in, Garbage Out: Data Collection, Quality Assessment and Reporting Standards for Social Media Data Use in Health Research, Infodemiology and Digital Disease Detection. *Journal of Medical Internet Research*, *18*(2), e41. https://doi.org/10.2196/jmir.4738
Kirmani, A., & Rao, A. R. (2000). No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality. *Journal of Marketing*, *64*(2), 66-79. https://doi.org/10.1509/jmkg.64.2.66.18000
Kleinert, S. (2023). The Promise of New Ventures' Growth Ambitions in Early-Stage Funding: On the Crossroads between Cheap Talk and Credible Signals. *Entrepreneurship Theory and Practice*, 104225872311647. https://doi.org/10.1177/10422587231164750
Kleinert, S., Bafera, J., Urbig, D., & Volkmann, C. K. (2021). How Equity Crowdfunding Platforms Use Quality Signals to Select New Ventures. *Entrepreneurship Theory and Practice*, 104225872110119. https://doi.org/10.1177/10422587211011945
Kottasz, R. (2004). How should charitable organisations motivate young professionals to give philanthropically? *International Journal of Nonprofit and Voluntary Sector Marketing*, *9*(1), 9-27. https://doi.org/10.1002/nvsm.230
Lee, B. A., & Farrell, C. R. (2003). Buddy, Can You Spare A Dime?:Homelessness, Panhandling, and the Public. *Urban Affairs Review*, *38*(3), 299-324. https://doi.org/10.1177/1078087402238804
Leslie, L. L., & Ramey, G. (1988). Donor Behavior and Voluntary Support for Higher Education Institutions. *The Journal of Higher Education*, *59*(2), 115-132. https://doi.org/10.2307/1981689
Lester, R., Certo, T., Dalton, C., Dalton, D., & Jr, A. (2005). Initial Public Offering Investor Valuations: An Examination of Top Management Team Prestige and Environmental Uncertainty. *Journal of Small Business Management*, *44*, 1-26. https://doi.org/10.1111/j.1540-627X.2006.00151.x
Levy, H., & Lazarovich-Porat, E. (1995). Signaling theory and risk perception: An experimental study. *Journal of Economics and Business*, *47*(1), 39-56. https://EconPapers.repec.org/RePEc:eee:jebusi:v:47:y:1995:i:1:p:39-56
Li, C., Li, X., Wang, J., Pan, M., & Gao, W. (2022). Signaling effect in social network and charity crowdfunding: Empirical analysis of charity crowdfunding of Sina MicroBlog in China [Original Research]. *Frontiers in psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.944043
Lindskold, S., Forte, R. A., Haake, C. S., & Schmidt, E. K. (1977). The Effects of Directness of Face-to-Face Requests and Sex of Solicitor on Streetcorner Donations. *The Journal of Social Psychology*, *101*(1), 45-51. https://doi.org/10.1080/00224545.1977.9923982
Loewenstein, G., Sunstein, C. R., & Golman, R. (2013). Disclosure: Psychology Changes Everything. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2312708

McCullagh, P., & Nelder, J. A. (2019). Generalized Linear Models. https://doi.org/10.1201/9780203753736
McNamara, G., Haleblian, J., & Dykes, B. J. (2008). The Performance Implications of Participating in an Acquisition Wave: Early Mover Advantages, Bandwagon Effects, and The Moderating Influence of Industry Characteristics and Acquirer Tactics. *Academy of Management Journal*, *51*, 113-130.
Moy, N., Chan, H. F., & Torgler, B. (2018). How much is too much? The effects of information quantity on crowdfunding performance. *PLoS One*, *13*(3), e0192012. https://doi.org/10.1371/journal.pone.0192012
Nah, S., & Saxton, G. D. (2013). Modeling the adoption and use of social media by nonprofit organizations. *New Media & Society*, *15*(2), 294-313. https://doi.org/10.1177/1461444812452411
Park, N., & Mezias, J. (2005). Before and After the Technology Sector Crash: The Effect of Environmental Munificence on Stock Market Response to Alliances of E-Commerce Firms. *Strategic Management Journal*, *26*, 987-1007. https://doi.org/10.1002/smj.489
Parsons, L. (2007). The Impact of Financial Information and Voluntary Disclosures on Contributions to Not-For-Profit Organizations. *Behavioral Research in Accounting - Behav Res Account*, *19*, 179-196. https://doi.org/10.2308/bria.2007.19.1.179
Peloza, J., & Steel, P. (2005). The price elasticities of charitable contributions: A meta-analysis. *Journal of Public Policy & Marketing*, *24*(2), 260-272. https://doi.org/10.1509/jppm.2005.24.2.260
Pietro, F.-D., Grilli, L., & Masciarelli, F. (2020). Costly and Costless Signals and the Role of Innovativeness in Equity Crowdfunding. *Academy of Management Proceedings*, *2020*(1), 18833. https://doi.org/10.5465/AMBPP.2020.18833abstract
Plummer, L. A., Allison, T. H., & Connelly, B. L. (2016). BETTER TOGETHER? SIGNALING INTERACTIONS IN NEW VENTURE PURSUIT OF INITIAL EXTERNAL CAPITAL. *The Academy of Management Journal*, *59*(5), 1585-1604. http://www.jstor.org/stable/26157374
Pollack, J. M., & Bosse, D. A. (2014). When do investors forgive entrepreneurs for lying? *Journal of Business Venturing*, *29*(6), 741-754. https://doi.org/https://doi.org/10.1016/j.jbusvent.2013.08.005
Pollock, T., Chen, G., Jackson, E., & Hambrick, D. (2010). How much prestige is enough? Assessing the value of multiple types of high-status affiliates for young firms. *Journal of Business Venturing*, *25*, 6-23. https://doi.org/10.1016/j.jbusvent.2009.01.003
Polonsky, M., Shelley, L., & Voola, R. (2002). An Examination of Helping Behavior—Some Evidence from Australia. *Journal of Nonprofit & Public Sector Marketing*, *10*, 67-82. https://doi.org/10.1300/J054v10n02_04
Reuben Chan, J. T., Archanna Selvaraju. (2021). *Reimagining Charities*.
Romney-Alexander, D. (2002). Payroll giving in the UK: donor incentives and influences on giving behaviour. *International Journal of Nonprofit and Voluntary Sector Marketing*, *7*(1), 84-92. https://doi.org/https://doi.org/10.1002/nvsm.169
Ross, S. A. (1977). The Determination of Financial Structure: The Incentive-Signalling Approach. *The Bell Journal of Economics*, *8*(1), 23. https://doi.org/10.2307/3003485
Rynes, S., Bretz, R., & Gerhart, B. (1991). The importance of recruitment in job choice: A different way of looking. *Personnel Psychology*, *44*, 487-521.
Salido-Andres, N., Rey-Garcia, M., Álvarez-González, L. I., & Vázquez-Casielles, R. (2019). Determinants of success of donation-based crowdfunding through digital platforms: The influence of offline factors. *CIRIEC-España, revista de economía pública, social y cooperativa*(95), 119. https://doi.org/10.7203/ciriec-e.95.13001

Sartori, A. E. (2002). The Might of the Pen: A Reputational Theory of Communication in International Disputes. *International Organization*, *56*(1), 121-149. http://www.jstor.org/stable/3078672
Saxton, G. D., & Wang, L. (2014). The Social Network Effect. *Nonprofit and Voluntary Sector Quarterly*, *43*(5), 850-868. https://doi.org/10.1177/0899764013485159
Simmons, W. O., & Emanuele, R. (2004). Does Government Spending Crowd Out Donations of Time and Money? *Public Finance Review*, *32*(5), 498-511. https://EconPapers.repec.org/RePEc:sae:pubfin:v:32:y:2004:i:5:p:498-511
Sliwka, D. (2007). Trust as a Signal of a Social Norm and the Hidden Costs of Incentive Schemes. *American Economic Review*, *97*(3), 999-1012. https://doi.org/10.1257/aer.97.3.999
Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355-374. https://doi.org/10.2307/1882010
Steigenberger, N., & Wilhelm, H. (2018). Extending Signaling Theory to Rhetorical Signals: Evidence from Crowdfunding. *Organization Science*, *29*(3), 529-546. https://doi.org/10.1287/orsc.2017.1195
Stiglitz, J. E. (2002). Information and the Change in the Paradigm in Economics. *The American Economic Review*, *92*(3), 460-501. http://www.jstor.org/stable/3083351
Taeuscher, K., & Rothe, H. (2021). Optimal distinctiveness in platform markets: Leveraging complementors as legitimacy buffers. *Strategic Management Journal*, *42*(2), 435-461. https://doi.org/10.1002/smj.3229
Tang, H. W. (2022). Charitable Organizations in Singapore: From Clan Based to State Facilitated Endeavors. *Nonprofit Policy Forum*, *13*(1), 49-68. https://doi.org/10.1515/npf-2021-0032
Tumasjan, A., Braun, R., & Stolz, B. (2021). Twitter sentiment as a weak signal in venture capital financing. *Journal of Business Venturing*, *36*(2), 106062. https://doi.org/https://doi.org/10.1016/j.jbusvent.2020.106062
Van Diepen, M., Donkers, B., & Franses, P. H. (2009). Dynamic and Competitive Effects of Direct Mailings: A Charitable Giving Application. *Journal of Marketing Research*, *46*(1), 120-133. https://doi.org/10.1509/jmkr.46.1.120
Vismara, S. (2016). Equity retention and social network theory in equity crowdfunding. *Small Business Economics*, *46*(4), 579-590. https://doi.org/10.1007/s11187-016-9710-4
Wagner, C., & Wheeler, L. (1969). Model, need, and cost effects in helping behavior. *J Pers Soc Psychol*, *12*(2), 111-116. https://doi.org/10.1037/h0027569
Weiss, A. (1995). Human Capital vs. Signalling Explanations of Wages. *Journal of Economic Perspectives*, *9*(4), 133-154. https://doi.org/10.1257/jep.9.4.133
Wiepking, P., Madden, K., & McDonald, K. (2010). Leaving a Legacy: Bequest Giving in Australia. *Australasian Marketing Journal*, *18*(1), 15-22. https://doi.org/10.1016/j.ausmj.2009.10.005
Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, *24*(13), 1307-1314. https://doi.org/10.1002/smj.360