SUCCESS FACTORS FOR CROWDFUNDING CAMPAIGNS

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Lay Abstract

Collecting small contributions from large number of supporters is called crowdfunding. With the growing popularity of crowdfunding, it is important to understand the factors that affect success in this system of attracting funding backers. In my thesis, I have studied the elements in each crowdfunding pitch that can show the quality of the project to the potential supporters. In my first study I show that these indicators of quality are more important when the geographic distance between project owners and their supporters is higher.

In my second study I show that the quality of the narrative of the project is another indicator of quality. I find that a well-written text will reduce the negative effect of risk and increase the positive effect of rewards.

In both studies I show that costly and less costly indicators of quality can help success of crowdfunding campaigns.

Abstract

The exponential growth of crowdfunding over the past 10 years signals its evident importance as an alternative method of marketing and funding innovation. Because of the arm's length relationship between innovators and their backers in this system, signaling quality of the project is vital for success of a campaign. Backers mainly make decisions based on quality signals they receive, and because the average spatial distance between them and innovators is substantial in a crowdfunding setting, this (together with the effectiveness of quality signals) has consequences on the relationship between them. In this modern setting, the type of signals used by campaign owners differs from the traditional costly signals of quality. Due to the relatively small size of crowdfunding projects, and the small investments made by each backer, innovators provide less costly and rhetorical quality signals, which have become a topic of academic inquiry in this field.

In this dissertation, I conducted two studies to investigate important aspects of crowdfunding. First, I studied geographic distance and its interaction with quality signals (both costly and less costly signals). I argue that that the information gap between backers and innovators rises with the increase of geographic distance. Drawing on signaling theory, I argue that since distant backers face higher levels of information disadvantage (compared to nearby backers), the value and importance of quality signals are amplified for them. I find support for my proposition that quality signals used to reduce the information gap between two sides of a trade become more valuable and influential with increases in geographic distance between backers and the innovator. Heretofore, no study

has examined the interaction between geographic distance and quality signals. In study 1, using a sample of 102,179 Kickstarter crowdfunding campaigns launched in 156 different countries (i.e. creators are from 156 different countries), I show that quality signals including human capital, endorsement, preparedness, and positive psychological capital are more influential on the likelihood of success of crowdfunding campaigns that are collecting funds from more geographically remote backers than campaigns that are receiving funds from more geographically proximate backers. The results hold true even after controlling for cultural differences.

Second, I investigate the role of less costly signals of quality and their interaction with traditional quality signals. I also examine their interaction with meaning in crowdfunding campaign narratives. Study 2 investigates the importance of textual description, its focus on reward/risk rhetoric, and its quality. Using a sample of 187,769 Kickstarter projects, I show that the meaning and quality of a project's textual description can affect the success/failure of that project in securing funds and creating a market for the innovative idea. I show that textual quality and fluency functions as a less costly signal of preparedness, which can reduce the negative effect of risk rhetoric and increase crowdfunding performance. Interestingly, my study proposes and shows evidence of the moderating role of quality, preparedness and human capital signals (i.e. quality of the text and its creator) in reducing the effect of risk rhetoric and increasing the effect of reward rhetoric (i.e. the meaning of the text). The findings of my second study are significant as they show the interaction between text quality and text meaning. It is interesting to see

that the perceived risk of a project can change due to the presence or absence of quality

signals.

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I am also thankful of Dr. Sourav Ray and Dr. Ruhai Wu for their very helpful supportiveness during my PhD studies.

Dedication

I humbly dedicate this work to my parents Mehrazam and Reza, for their selflessness and unconditional love and support and to my dear sister Niloufar for her endless kindness and care.

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Chapter 1

Introduction

Signaling and its importance for the success of new ventures has been a topic of inquiry for traditional methods of collecting funding and support for innovative ideas. With emergence of new ways of finding support and demand for innovation, it is of utmost importance to study the new signals, new forms of traditional signals and their dynamics in modern settings such as open innovation systems.

Among the interesting areas under the umbrella of open innovation is crowdsourcing (Stanko, Fisher, & Bogers, 2017). Inspired by crowdsourcing, crowdfunding has emerged as one of the most recent and exceptionally successful methods of collecting funds and creating customer base for innovative ideas (Mollick, 2014). The very early definition of crowdfunding was suggested based on its relation to crowdsourcing as "an open call, essentially through Internet for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes" (Schwienbacher & Larralde, 2010). A more recent and well-adapted definition suggested by Ethan Mollick (2014) describes crowdfunding as "the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries". Crowdfunding has received tremendous attention by

researchers in Marketing (Burnkrant & Cousineau, 1975; Dai & Zhang, 2019; Netzer, Lemaire, & Herzenstein, 2019), Innovation (Chan & Parhankangas, 2017; Stanko & Henard, 2017; Zhang & Chen, 2018, 2019), and Entrepreneurship (Moss, Neubaum, & Meyskens, 2015; Moss, Renko, Block, & Meyskens, 2018; Scheaf et al., 2018; Stevenson, Ciuchta, Letwin, Dinger, & Vancouver, 2018).

Nowadays, more than 1,200 crowdfunding platforms exist where innovators and entrepreneurs use to reach their potential contributors and consumers. Crowdfunding has around $16.1 billion dollar of funded initiatives with an annual growth rate of 167% (Massolution, 2015) and this blossoming phenomenon is expected to even surpass the venture capital investments (Barnett, 2015). Crowdfunding provides access to both capital and market for innovators. For example, with regards to capital, 3.9 billion dollars have been provided to innovators on Kickstarter, and this platform alone has a community of 17 million backers which a third of them are returning backers (Kickstarter Stats, 2019).

Considering its exponential growth and popularity specially for early stage innovative entities, it is very essential for marketing, innovation, and entrepreneurship researchers to investigate and understand the factors affecting success for innovation and entrepreneurial activity in this new early-stage funding system called crowdfunding (Drover, Wood, & Zacharakis, 2017). In my effort to address the inquiry for investigating this new phenomenon (McKenny, Allison, Ketchen, Short, & Ireland, 2017), in this dissertation I am trying to address the following research questions:

1. How does geographic distance affect the success of innovative projects in crowdfunding campaigns? Are the Internet and crowdfunding removing the geographic barriers for fundraising and marketing for innovators?

2. How does the effect of signals of quality (both traditional costly signals and new less costly signals) change with spatial distance between backers and creators?

3. What is the role of textual narrative on success of campaigns? And does this effect change in presence/absence of quality signals?

Crowdfunding which by definition happens over the Internet, provides a great transparent situation. The transparency of online crowdfunding offers a great opportunity to researchers to organize rich datasets. These datasets when combined with other data sources enable the investigators to answer theoretical and empirical questions (Stanko et al., 2017). My effort in this study is to follow inquiry and directions by scholars to use the techniques such as web scraping, and text analysis to benefit from the transparent online unstructured data (UD) (Balducci & Marinova, 2018; Stanko et al., 2017) and to use it to address the aforementioned multidisciplinary research questions.

Since the dataset used for both studies are the same it is worth explaining about the data collection and cleaning process. Data for this thesis was collected from Kickstarter which is one of the most popular crowdfunding platforms. The data

was collected in June and July 2018 using the computers at the **Allen H. Gould Trading Floor** at the DeGroote School of Business McMaster University.

The collected data was tested for existence of duplicates and missing data that may happen in web-scraping. Duplicate variables were removed, and any missing variable was collected and added to dataset during the analysis. For each of the studies 1 and 2, certain limitations were imposed based on previous studies to make the analysis more homogeneous with regards to the size of projects. Any data limitations with regards to access to data (for example backer city/country information) are explained in the "Sampling and Data Collection" chapters of each study.

The designed web-scraper collected data from universe of all crowdfunding campaigns on Kickstarter that started from April 2009 (earliest project started on 2009-04-21 19:02:48 GMT) until July 2018 (latest campaign started on 2018-07-16 15:21:43 GMT).
Collecting data from 378,000 crowdfunding campaigns on Kickstarter (universe of projects since its inception) consisting of 41,445,334 pledges of $3.9 billion worth, this study is one of the most comprehensive empirical studies on crowdfunding. A detailed descriptive of the total data and crosstabs by category and country of origination are provided in Appendices1, and 2 respectively.

In study 1, I investigate the effect of signals, and spatial distance on success of crowdfunding campaigns. The first study investigates the interaction of both traditional costly and new less costly signals of quality (such as positive

psychological capital) with geographic distance. Study 1 shows the significance of traditional costly signals as well as less costly signals (from innovators perspective) in situations such as crowdfunding setting where sources of information about quality of projects are very scarce. Using signaling theory (Connelly, Certo, Ireland, & Reutzel, 2011; Spence, 1973) study 1 aims to explain the effect of project and creator attributes, as well the spatial distance between the fund seeking innovator and supporting backers on the likelihood of success of crowdfunding campaigns.

Interestingly study 1 finds that although the Internet and new intermediaries have removed the transaction barriers between distant locations, they have not completely removed the information asymmetry barrier between geographically distant sides of trade. It is interesting that geographic distance reduces chances of success of transactions that happen in a virtual setting over the Internet, where the physical distance seems not be an important element. It is interesting that this effect is robust even after controlling taste related variables such as cultural distance.

The other surprising finding of study 1 is the similarity between the effect of traditional costly signals of quality such as endorsement or human capital (experience), and less costly signals such as positive psychological capital (Anglin, Short, et al., 2018). Study 1 shows that the importance of costly signals increases as the distance between fund seeking innovators and their backers increases. Interestingly, I show that the same moderating effect is true for less

costly signals of quality. This finding emphasizes that innovators should not underestimate the value of less costly signals of quality, and new innovators who lack the history of experienced innovators, can benefit from such less costly signals.

Study 2 shows the importance of narrative meaning and narrative quality in affecting backers' decisions. Although narrative is one of the most important elements of communication between the innovators and their potential backers, studies on the role of narrative meaning and quality are scarce and very limited in this area (Allison, Davis, Webb, & Short, 2017; Allison, McKenny, & Short, 2013). Information that is conveyed through language-based communication have been immensely neglected in signaling theory studies (Steigenberger & Wilhelm, 2018). Study 2 not only adds to literature on the importance of narrative but also adds to signaling theory literature by showing the effect of narrative meaning in presence or absence of quality signals. In study 2 using text analysis, I show that meaning of the narrative affects the success of the campaign; Risk rhetoric reduces, and reward rhetoric increases the chances of success for crowdfunding campaigns. At the same time, I show that quality of narrative as measured through use of formal/informal language and level of punctuation in the text (less costly signals of quality) also affect the chances of receiving funds from the crowd. The findings of the second study become very interesting when I show the interaction between the meaning of the text and the quality signals (both costly and less costly). The study shows that the negative effect of risk rhetoric is attenuated

when the quality of narrative is high and more negative when the quality of narrative is low. I also show that the positive effect of reward rhetoric is amplified for high quality narratives. Interestingly this interaction is supported by empirical results for both costly and less costly signals of quality which again emphasizes the value of less costly signals (Anglin, Short, et al., 2018). Study 2 not only shows the importance of rhetorical content and narrative quality, but also shows the interaction of the two.

Data for both studies are archival data collected from Kickstarter campaigns. Kickstarter is one the most popular crowdfunding websites and has been a popular context for academic research in this area (Allison et al., 2017; Chan & Parhankangas, 2017; Mollick, 2014). My study includes the census of all Kickstarter campaigns that started since its inception in 21 April 2009 until 16 July 2018 (last project ended in 9 September 2018). A vast range of products from 15 categories including: Art, Comics, Crafts, Dance, Design, Fashion, Film & Video, Food, Games, Journalism, Music, Photography, Publishing, Technology and Theater are included in my analysis which enhances the external validity of the findings.

The rest of the dissertation is as follows. In study 1 I first provide a summary of the study. Next, I provide a literature review on signaling theory and the effect of spatial distance on trade. Then I develop hypotheses regarding the role of distance and its interaction with costly and less costly signals of quality and provide my proposed conceptual framework. I then proceed with the research

method. Then I provide analysis and results followed by robustness tests. Study 1 concludes with discussions and limitations part. Study 2 starts with a short summary, followed by an introduction. Then I provide theoretical background and hypotheses development including the proposed conceptual framework. Next, I provide methodology proceeded by analysis and results including robustness tests. Study 2 concludes with the discussion of the findings.

Chapter 2

Study 1

Bigger from a Distance: The Moderating Role of Geographic Distance on the Importance of Quality Signals for Crowdfunding Success

2.1. Introduction

Many successfully crowdfunded products such as Pebble (Lamarque, 2015) Oculus Rift, and the OUYA gaming console (Schroter, 2014), show the importance of crowdfunding as a reliable alternative method of financing and market testing for new products (Schwienbacher, 2018). What is more interesting than success of these innovative projects in collecting million dollars of funds from thousands of backers is the huge spatial distance between the founders of these crowdfunding campaigns and the backers who supported them. For instance, Oculus Rift creators are located in Long Beach California, and they were receiving support from places as close as California, other US States and Canada, to very distant countries such as United Kingdom, Germany, France and Japan. Based on our estimates the average distance between backers and campaign owners of Oculus Rift project is more than 5000kms including backers from few miles away to backers who are thousands of miles away. Observing the high average and huge range in geographic distance between backers and campaign owners motivates the investigation of the role of geographic distance in

crowdfunding in this study. The role of Internet is acknowledged as an important crowdfunding facilitator (Mollick, 2014; Schwienbacher & Larralde, 2010) and it is supposed to reduce or even eliminate geographic boundaries between founders and funders. Although crowdfunding has successfully created around $16.1 billion of funded initiatives, with an annual growth rate of 167% (Massolution, 2015), this market faces the crucial challenge of information asymmetry between contributors who pledge funds and the recipient entrepreneurs (Agrawal, Catalini, & Goldfarb, 2015; Polzin, Toxopeus, & Stam, 2017). Internet has removed many geographical barriers by enabling transaction between distant parties, but still has not completely resolved the distance-related information disadvantage of distant investors (Guenther, Johan, & Schweizer, 2018). This information asymmetry issue could be way more prominent for crowdfunding of innovative ideas where the trade is happening for a product that is yet to be developed. Crowdfunding campaign creators can provide quality signals (Vismara, 2018) to mitigate information asymmetry issues (Kirmani & Rao, 2000) and persuade backers to contribute funds to their innovative projects. Studies in entrepreneurship and innovation have shown that fund seeking ventures often rely on signals that act as indicators of quality which implicitly or explicitly certify the value of a venture (Drover, Wood, et al., 2017). In this study we investigate and show that the value of quality signals is not equal for projects that are receiving funds from nearby backers versus projects that are receiving funds from distant backers. Information asymmetry between an entrepreneur and her backers is an omnipresent challenge

in crowdfunding. Drawing on previous studies, I argue that this information gap rises with the increases in the geographic distance between backers and creators (Coval & Moskowitz, 1999, 2001; Guenther et al., 2018; Ragozzino & Reuer, 2011). In this study, I investigate the main effect of geographic distance between backers and creators on success of crowdfunding campaigns of innovative ideas and I also empirically test the moderating effect of geographic distance on the importance and influence of quality signals. I argue similar to other investment settings that as the average distance between backers and the campaign owner (entrepreneur) increases, the information asymmetry between backers and the entrepreneur increases (Coval & Moskowitz, 1999, 2001; Guenther et al., 2018; Ragozzino & Reuer, 2011). This increase in information asymmetry puts distant backers at information disadvantage compared to nearby backers. Signals of quality are more valuable and informative for the more informationally disadvantaged backers. Thus, signals of quality should be more valuable and influential for the success of crowdfunding campaigns that are receiving funds from distant backers than for projects that are receiving funds from nearby backers. I investigate the association between geographic distance and likelihood of success of crowdfunding campaigns and also, I study the moderating role of geographic distance on the importance of quality signals. From now on when I refer to geographic distance, I mean the average spatial distance between the entrepreneur and her backers. Crowdfunding is perceived to help entrepreneurs connect with distantly located investors (Agrawal, Catalini, & Goldfarb, 2014;

Agrawal et al., 2015), but research has revealed that geographic distance still negatively affects crowdfunding transactions (Burtch, Ghose, & Wattal, 2014; Lin & Viswanathan, 2015). Past studies in this context have been limited to one product category or were limited to peer-to-peer charity crowd-lending where innovativeness of the campaign or product is not important (Agrawal et al., 2015; Burtch et al., 2014). To the best of my knowledge, my study by investigating 15 different campaign categories from 156 countries is one of the most comprehensive studies on the role of geographic distance for the success of reward-based crowdfunding for innovative products. My study contributes to the literature in the signaling theory domain and crowdfunding research by showing how geographic distance as a proxy of information asymmetry moderates the effect of signals on the performance of crowdfunding campaigns. The rest of this paper is structured as follows. In the next section, I review the literature on signaling theory, how it relates to crowdfunding, and the role of geographic distance on the value of signals (Chapter 3). I then propose my hypotheses (Chapter 4) and present my research method (Chapter 5). Then I present my analysis and results (Chapter 6) and robustness tests (Chapter 7). Finally, in chapter 8, I conclude my paper with discussions and the study's limitations.

Chapter 3

Study 1. Literature review

3.1. Quality Signals

Literature on information economics (Akerlof, 1970; Spence, 1973, 2002) emphasizes the importance of signals in reducing information asymmetry between the two sides of a transaction (Kirmani & Rao, 2000; Ragozzino & Reuer, 2011). The imbalanced access to knowledge (i.e. information asymmetry) occurs when one side of a transaction lacks the required information about the quality or trustworthiness of the other party (Kirmani & Rao, 2000). Because some details are private and unavailable to all parties involved in a transaction, information asymmetry issue develops between the side that has that information and the other side that could possibly make more optimized decisions with that knowledge (Connelly et al., 2011). Signaling theory is instrumental for describing the kind of behavior where two sides of a transaction have access to different levels of information (Kirmani & Rao, 2000) and not surprisingly, this theory has been extensively used in the entrepreneurship literature (Connelly et al., 2011). Under conditions of information asymmetry, fund seeking ventures often rely on signals that implicitly or explicitly certify their value, and investors can interpret them positively as signals of quality (Drover, Wood, et al., 2017). When I discuss quality in this study, I mean the unobservable capacity of the seller/innovator to meet and satisfy the requests or demands of the buyers/investors (Connelly et al., 2011).

In crowdfunding, information asymmetry is an important issue that occurs between contributors or backers and the campaign owners or entrepreneurs (Agrawal et al., 2015; Ahlers, Cumming, Günther, & Schweizer, 2015; Polzin et al., 2017). Entrepreneurs need to convince investors through signals that their new ventures are credible and valuable (Benson, Brau, Cicon, & Ferris, 2015; Elitzur & Gavious, 2003). This is extendable to crowdfunding campaign owners who, as investigated in earlier studies, use signals to persuade potential backers to invest in their idea (Courtney, Dutta, & Li, 2017).

3.2. Geographic Distance

Geographic distance escalates information asymmetry between trade parties such as backers and campaign owners in crowdfunding context. Prominent research in the economics and innovation literature (Grinblatt & Keloharju, 2001; Mollick & Robb, 2016; Stuart & Sorenson, 2003) has examined the effect of geographic distance between buyers and sellers (Disdier & Head, 2008; Hortaçsu, Asís Martínez-Jerez, & Douglas, 2009), and on trade frictions between investors and their investment (including early stage investments by venture capitals or stock holders). Studies on investment decisions have shown presence of home bias in investments, due to the difficulties of evaluating and monitoring foreign firms compared to local firms (Seasholes & Zhu, 2010). Home bias is even present in domestic investments because of the difference in the level of information that local domestic investors and distant domestic investors have (Coval & Moskowitz, 1999). It is frequently believed that the information

advantage that local investors have over non-local investors at least partly explains the home bias in purchases and investments (Bae, Stulz, & Tan, 2008).

Previous studies in crowdfunding have made different conclusions about the effect of geographic distance on crowdfunding transactions. A previous crowdfunding study that concentrated on the role of geographic distance between funders and founders, limited to musicians raising money to record their albums, suggests online fundraising may truly ease distance-related hurdles to investment (Agrawal et al., 2015), but other studies have found a negative effect of geographic distance on peer-to-peer lending transactions (Burtch et al., 2014; Guenther et al., 2018; Lin & Viswanathan, 2015). Past studies on the effect of geography on crowdfunding have been limited to the peer-to-peer lending sector (Burtch et al., 2014; Lin & Viswanathan, 2015) or categories such as music (Agrawal et al., 2015), which are not generalizable to all products or other crowdfunding typologies. In this study, I not only study the effect of distance itself on success or failure of crowdfunding campaigns, but also, investigate the moderating effect of geographic distance on the value of signals in the context of reward-based crowdfunding. Geographic proximity brings an information advantage, while geographic distance creates information disadvantages for remote investors (Ragozzino & Reuer, 2011). Thus, the importance and influence of indirect measures of quality (i.e. signals) is much greater for distant investors because they face higher levels of information disadvantage risk. The important research in relevant topics and the major findings are reported in Table 1.

Table 1- Study 1- Summary of past research and contributions of this study

Empirical Study	Study Focus	Context	Traditional Signals	Less Costly Signals	Distance Over Internet	Relevant Findings
(Sorenson & Stuart, 2001)	The role of geographic distance and social topography on VC investments.	VC investments	No	No	No	Localized pattern of exchange is due to regional concentration of interpersonal relationships which reduce flow of information.
(Blum & Goldfarb, 2006)	Does spatial affect consumption of digital goods over Internet?	Website visits	No	No	Yes	Spatial distance affect taste related products and less correlataed with non-taste related websites.
(Disdier & Head, 2008)	The effect of geographic distance on bilateral international trade	Meta-analysis	No	No	No	Geographic distance has a negative effect on bilateral trade.
(Ragozzino & Reuer, 2011)	The effect of signals on IPO firms on spatial distance of the acquirer	IPO and Merger/Acquisition	Yes	No	No	Signals can facilitate acquisition of by remote acquirers
(Burtch et al., 2014)	The role of cultural differences and geography on P2P lending	P2P Lending	No	No	Yes	Spatial and cultural distance mitigate P2P lending and there is a substitution effect.
(Moss et al., 2015)	The effect of rhetorical signals of quality on P2P lending	P2P Lending	No	Yes	No	Entrepreneurial orientation as a rhetorical signal of quality increases chance of microlending success.
(Lin & Viswanathan, 2015)	Does home bias exist in P2P lending transactions? What is the mechanism behind this bias?	P2P Lending	No	No	Yes	Home bias exists in P2P lending over Internet. The mechanism is behavioral rather than rational.
(Anglin, Short, et al., 2018)	The effect of costless signals of quality on crowdfunding success	Reward-based crowdfunding	Yes	Yes	No	Positive psychological capital as a costless signal of quality increases chance of crowdfunding success

Empirical Study	Study Focus	Context	Traditional Signals	Less Costly Signals	Distance Over Internet	Relevant Findings
(Steigenberger & Wilhelm, 2018)	How do substantial and rhetorical signal interact?	Reward-based crowdfunding	Yes	Yes	No	Importance of rhetorical signals increases in signal portfolios that include substantial signals.
This study	Is Internet removing geographic barriers for crowdfunding? How does the effect of costly and less costly signals change with spatial distance?	Reward-based crowdfunding	Yes	Yes	Yes	The importance of traditional and less costly signals of quality signals increases with increases of spatial distance over Internet. The less costly signals can be as effective or even more effective than traditional signals.

Adverse selection issue is evidently present in international and cross-border exchanges (Reuer & Ragozzino, 2014), and crowdfunding over the Internet (Mollick, 2014) is a good case for international exchanges that take place every day between parties that are miles away from each other. Multiple previous studies have used geographic distance between buyers and sellers as a proxy for level of information asymmetry between them (Garmaise & Moskowitz, 2004). The geographic distance between buyers and sellers in the context of real estate has been used as a measure of information asymmetry and buyers face higher levels of information disadvantage when the physical distance is greater (Garmaise & Moskowitz, 2004). Not only local investors have a substantial information advantage over investors from foreign countries, but also local analysts have higher quality information about projects compared to their non-local counterparts (Bae et al., 2008). Analysts in nearby locations to the investment opportunity enjoy an information advantage over distantly located analysts (Malloy, 2005) probably because they have tacit knowledge that cannot be easily acquired by remote analysts. Geographic distance creates, or at least increases, information asymmetry. It causes and heightens adverse selection and moral hazard problem in international exchanges such as international acquisitions (Malhotra & Gaur, 2014). It is therefore plausible to argue that the prominence and impact of signals increase as the average distance between investors and entrepreneur increases. My proposed conceptual model is presented in Figure 1.
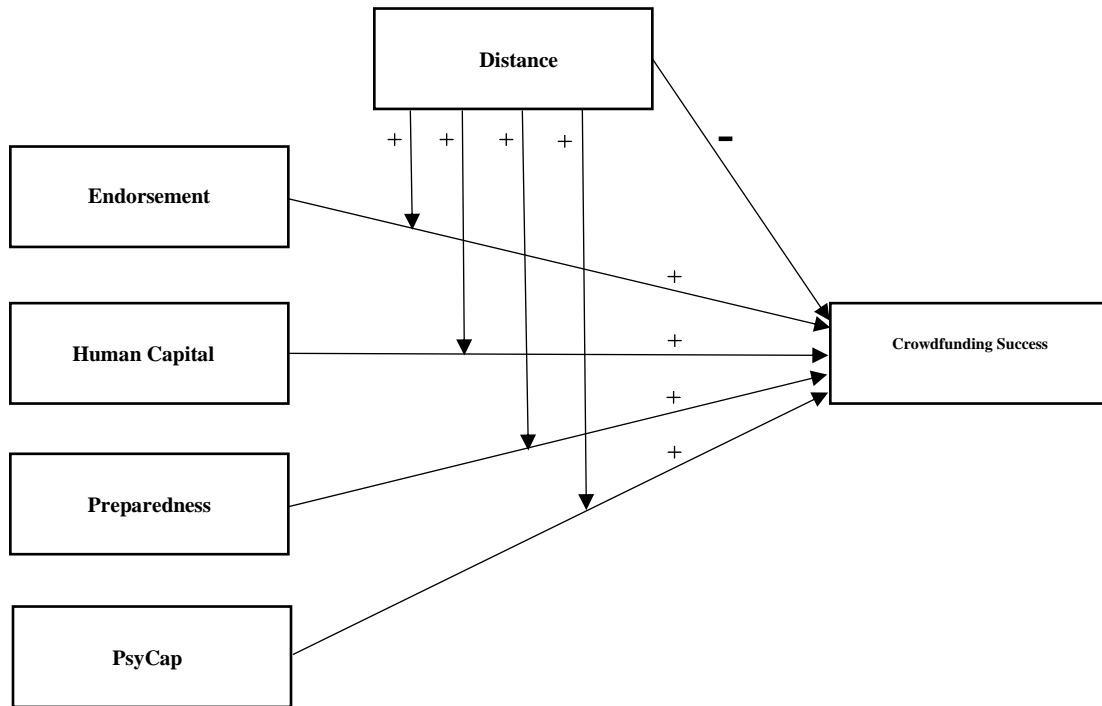
Figure 1. Study 1. Conceptual framework

Chapter 4

Study 1. Hypotheses development

4.1. Geographic distance and crowdfunding success

As discussed in the literature review section, the effect of physical distance on bilateral trade has been the subject of numerous studies and its negative impact on international trade is well established (Disdier & Head, 2008). Physical distance reduces the probability of an investment by Venture Capitalists (VCs) and this is because of locality of information flow (Sorenson & Stuart, 2001). Based on previous research, geographic distance also negatively affects crowdfunding investment decisions (Burtch et al., 2014; Guenther et al., 2018; Lin & Viswanathan, 2015). Thus, I safely recognize geography as a proxy for information disadvantage that reduces chances of funding. Risk of investment in reward-based crowdfunding is very high because the campaign owner has no obligation in case of default or failure to implement the project. This risk will be higher for more distant backers that are already at information disadvantage compared to nearby backers. More informationally disadvantaged backers are less willing to invest in the campaign.

Crowdfunders are generally considered to be less sophisticated investors (Drover, Wood, et al., 2017) and preference for investment in nearby (home bias) is even higher among such unsophisticated investors (Grinblatt & Keloharju, 2001). Since distant backers are less willing to invest in projects than nearby backers, we expect crowdfunding campaigns that are collecting funds from distant

backers to have lower likelihood of achieving their funding goal compared to campaigns that are collecting funds from nearby backers.

Hypothesis 1. Geographic distance between the entrepreneur and backers is negatively associated with the likelihood of success of crowdfunding campaigns (i.e. the higher the geographic distance, the lower the likelihood of success).

4.2. Geographic distance and importance of signals

Geographic distance increases information asymmetry between backers and campaign owners (Guenther et al., 2018). Higher geographic distance results in higher information asymmetry which in turn strengthens the importance and value of quality signals. Geographically distant backers are at informational disadvantage compared to proximate backers. Since they are facing higher uncertainty about quality of the project, distant backers have to rely more heavily on the signals that are provided in the campaign webpage of the crowdfunding projects. Previous studies suggest that local investors are more informed about their investment compared to distant investors because they benefit from local and private information that is not accessible to remote investors specially in situations where relevant information is difficult to obtain (H. Chen, Gompers, Kovner, & Lerner, 2010). Spatial and social vicinity increase the likelihood of information flows among individuals (Agrawal, Kapur, & McHale, 2008) and this means that it is easier and more likely for more geographically proximate backers to receive or acquire information about an investment opportunity compared to

distant backers. Since more proximate backers have other sources of acquiring information about the crowdfunding campaign (Guenther et al., 2018), they will be less sensitive to information that is conveyed by quality signals. On the other hand, remote backers have limited if any access to external sources of information other than the Internet (Guenther et al., 2018), and thus are at an information disadvantage when trying to evaluate distant projects and entrepreneurs. Since remote backers are less informed than proximate backers, they will be more sensitive to the information that is provided through quality signals. Backers' geographic distance with the entrepreneur is a good measure of the level of adverse selection risk with which they are confronted (Ragozzino & Reuer, 2011). Signals provided in a crowdfunding campaign's page that indicate quality are key possible remedies to mitigate these risks and are more valuable to backers who are distant compared to those nearby, because distant investors face higher information asymmetry and higher risk of investment (Ragozzino & Reuer, 2011). I therefore argue that as a consequence of their higher level of information disadvantage, distant backers will rely more heavily on signals compared to backers who are geographically closer. I argue that signals' value and influence are enhanced by geographic distance. Below, I discuss the moderating role of geographic distance on three costly signals and one less costly signal in crowdfunding. Since I am aiming to test the moderating effect of geographic distance on quality signals, I must pick signals that are equally visible, and more importantly, equally understandable to all backers around the world. Only by

testing the interaction of geographic distance with those equally understandable and visible signals I can tell if these equally understandable signals have different value interpretations for distant versus nearby backers. Otherwise, it is difficult to infer whether the change in effect of a quality signal with geographical distance is the result of its understandability or is the result of the geographic distance. For example, entrepreneur's affiliation with a university that is famous for its entrepreneurial activity in South Korea, may not be equally understandable to backers from Europe and vice versa. Such signals are not good candidates for my study. For this reason, I carefully and cautiously selected signals that are equally understandable by all crowdfunding backers around the globe. To further rule out the effect of cultural differences, I also control for the effect of cultural distance to show that my results stand such differences and the selected signals are understandable globally.

4.2.1. Geographic distance and importance of human capital

Human Capital is an important signal of venture quality (Ahlers et al., 2015) that is highly related to venture success (Unger, Rauch, Frese, & Rosenbusch, 2011). Human capital is an important factor used by start-ups to signal their potential and secure funds for their projects from VCs (Baum & Silverman, 2004) or from crowds in crowdfunding platforms (Anglin, Short, et al., 2018). Having a history of successfully launched past campaigns is likely to be very helpful for the campaign owner to signal her quality and experience to both distant and nearby backers. Past success history in a crowdfunding platform

acts as a signal of experience (human capital) and reduces information asymmetry (Courtney et al., 2017). Since on platforms such as Kickstarter the information about past success or failure of a creator is publicly visible and is equally meaningful to all backers, it is an appropriate signal to test its interaction with geographic distance. Although this signal is equally understanable to backers regardless of their location, nearby backers will be less sensitive to this signal as they have other sources of information about the campaign. For example, local backers may know a local artist from her past local successful performances, and contribute to her crowdfudning campaign regardless of her history on Kickstarter. On the other hand, past crowdfunding success is highly valuable for geographically remote backers because they face higher information disadvantage compared to nearby backers. If this argument holds true I expect to see a positive interaction between average geographical distance and human capital signal as measured by past crowdfunding success history.

Hypothesis 2. Geographic distance between backers and the entrepreneur(s) moderates the relationship between human capital signal and the likelihood of success of crowdfunding campaigns, in a way that increases in geographic distance strengthen the association between human capital signal and the likelihood of success.

4.2.2. Geographic distance and importance of expert endorsement

An endorsement from the Kickstarter staff can be considered as endorsement by credible experts in the crowdfunding context. Endorser credibility refers to whether the recommending source has the relevant expertise and can be trusted to provide independent judgment (Goldsmith, Lafferty, & Newell, 2000; Ohanian, 1990; Winterich, Gangwar, & Grewal, 2018). Expert endorsements are effective in mitigating the risk that consumers face (Biswas, Biswas, & Das, 2006) and endorser credibility is known to affect purchase intention (Pornpitakpan, 2004; Winterich et al., 2018). Firms that receive endorsement by underwriters with high reputational capital can persuade more distant investors to acquire a company (Ragozzino & Reuer, 2011). As one of the most popular reward-based crowdfunding websites in the world, Kickstarter has both credibility and expertise in the field and thus a campaign's likelihood of success is elevated if it receives a "Project We Love" badge from Kickstarter staff (Anglin, Wolfe, Short, McKenny, & Pidduck, 2018; Mollick, 2014; Younkin & Kuppuswamy, 2018). Since only high-quality campaigns can earn this badge and this internal expert endorsement is visible on the campaign's webpage, it can be used by backers as a signal to differentiate between high versus low quality projects. External endorsements from media or celebrities may not be equally understandable to local and distant backers because their reputation may not be universal or have the same strength in different countries or areas. On the other hand, Kickstarter's staff endorsement is a signal that is equally understandable for

everybody who pledges in that website. Like the previously discussed signal of quality, I expect the value of internal expert endorsement to be higher for more informationally disadvantaged backers (i.e. backers who are geographically distant from the campaign owner). The argument about interaction of geographic distance and signals should hold true for internal expert endorsement as well. Since distant backers are less informed by other sources of information, more distant backers should be more reliant on internal expert endorsements by Kickstarter.

Hypothesis 3. Geographic distance between backers and the entrepreneur(s) moderates the relationship between internal expert endorsement and the likelihood of success of crowdfunding campaigns, in a way that increases in geographic distance strengthen the association between internal expert endorsement and the likelihood of success.

4.2.3. Geographic distance and importance of preparedness signal

Entrepreneur's preparedness is an important aspect that investors consider when making their decision to support a project or idea (X. Chen, Yao, & Kotha, 2009). Preparedness in crowdfunding can be seen by individuals in the quality of the project's textual description (Viotto da Cruz, 2018). The very first encounter of the crowdfunders with a project's webpage is the textual description of the project. The viewers can then use the webpage links to access other pages such as FAQ, creator biography, others' comments, etc. Having a well-prepared textual description is time consuming and can signal to the backers that the innovator has

devoted enough time and effort to create the project. Having a flawless text can signal quality and on the other hand a text that has spelling errors and typos can indicate unpreparedness (Courtney et al., 2017; Mollick, 2014). A project description without spelling error is a signal of high crowdfunding project quality (Crosetto & Regner, 2018; Viotto da Cruz, 2018). Accordingly, I used the textual preparedness as a quality signal. Text quality is a signal of project preparedness in crowdfunding studies and its association with success has been shown empirically (Mollick, 2014).

This signal (preparedness) is visible to all backers and is understandable to all of them regardless of their geographic location. Accordingly, I expect preparedness of textual description (as measured through spelling-errors) to show the same interaction with geographic distance as other signals. As for other signals of quality the importance of a well-prepared text should be valued highly by distant backers who have limited information and face higher uncertainty compared to nearby supporters.

Hypothesis 4. Geographic distance between backers and the entrepreneur(s) moderates the relationship between preparedness signal and the likelihood of success of crowdfunding campaigns, in a way that increases in geographic distance strengthen the association between preparedness signal and the likelihood of success.

4.2.4. Geographic distance and importance of positive psychological capital language

Positive psychological capital (PsyCap) is an organization and individual level construct which refers to existence of four elements namely, hope, optimism, resilience, and confidence in a person or in an organization (Anglin, Short, et al., 2018; McKenny, Short, & Payne, 2013).

Anglin, et al. (2018) suggested positive PsyCap language as a less costly signal of quality that is associated with success in crowdfunding. Similar to textual description quality, textual meaning is an equally visible and equally understandable to all distant and proximate supporters, and positive PsyCap can be inferred from the project textual description of a crowdfunding campaign.

PsyCap refers to having required confidence and energy to succeed at work, being optimistic about the present and the future, having hope and being sufficiently resilient to pursue goals and bounce back when faced by challenges (Luthans, Youssef, & Avolio, 2007).

Positivity is considered as an important factor in organizations and positive psychology literature suggests that this kind of human-based capital can improve a company's performance and thus can be a source of competitive advantage (Luthans & Youssef, 2004). Positive psychological capital reflected in the description of a crowdfunding project can signal backers that the entrepreneur or the team of entrepreneurs behind the campaign are confident about their work, optimistic about the project's future, hopeful and resilient to endure and would not

give up when faced with difficulties (Anglin, Short, et al., 2018). The presence of positivity in an organization is a signal to backers of this human-based competitive advantage (Youssef & Luthans, 2007). Accordingly, providing such signals in a crowdfunding campaign's description increases the likelihood of its success.

Positive psychological capital is considered a type of human-based capital, and a key resource for any firm (Ragozzino & Reuer, 2011). If past experinece is related to previous actual success history of campiagn owners, PsyCap is more about their mental preparedness. When reflected in a campaign's language and description, it has a positive association with the likelihood of a crowdfunding campaign's success. This effect grows as the geographic distance between backers and entrepreneur increases. Positive psychological capital signaled on a crowdfunding page is a more influential success factor for campaigns that collect funds from more distant backers, than for those that are receiving support from backers who are geographically closer.

Hypothesis 5. Geographic distance between backers and the entrepreneur(s) moderates the relationship between positive PsyCap language and the likelihood of success of crowdfunding campaigns, in a way that increases in geographic distance strengthen the association between positive PsyCap language and the likelihood of success.

Chapter 5

Study 1. Research method

5.1. Sampling and Data Collection

I collected data of the universe of all Kickstarter projects that started since its

between 2009-04-21 and 2018-07-16. I excluded projects that were cancelled by

the campaign owner or suspended by Kickstarter before maturing their deadline.

Following previous studies, I only considered those with goals of equal or above

$5,000 and below $1,000,000 (Mollick, 2014). I also removed projects that

collected more than 1000% of their target goals, as such campaigns have either

unrealistic goals or had very huge outside Kickstarter public relations activities.

To be able to access data about the location of backers I limited my sample to

projects with more than nine backers. After removing observations with missing

data (case-wise) 102,179 complete observations remained in my analysis and the

and totaling for 3.03 billion dollars of funds. It is worth mentioning that my study

is the first to convert all the monetary values to USD. I used the exchange rate that

Kickstarter uses to convert currencies and show all funds in the local currency of

the viewers' country. Campaign creators in my study are from 156 different

countries. Figure 2 shows a choropleth map of the distribution of projects by their

country of initiation and Figure 3 shows the increasing average distance between

backers and creators over the past ten years.
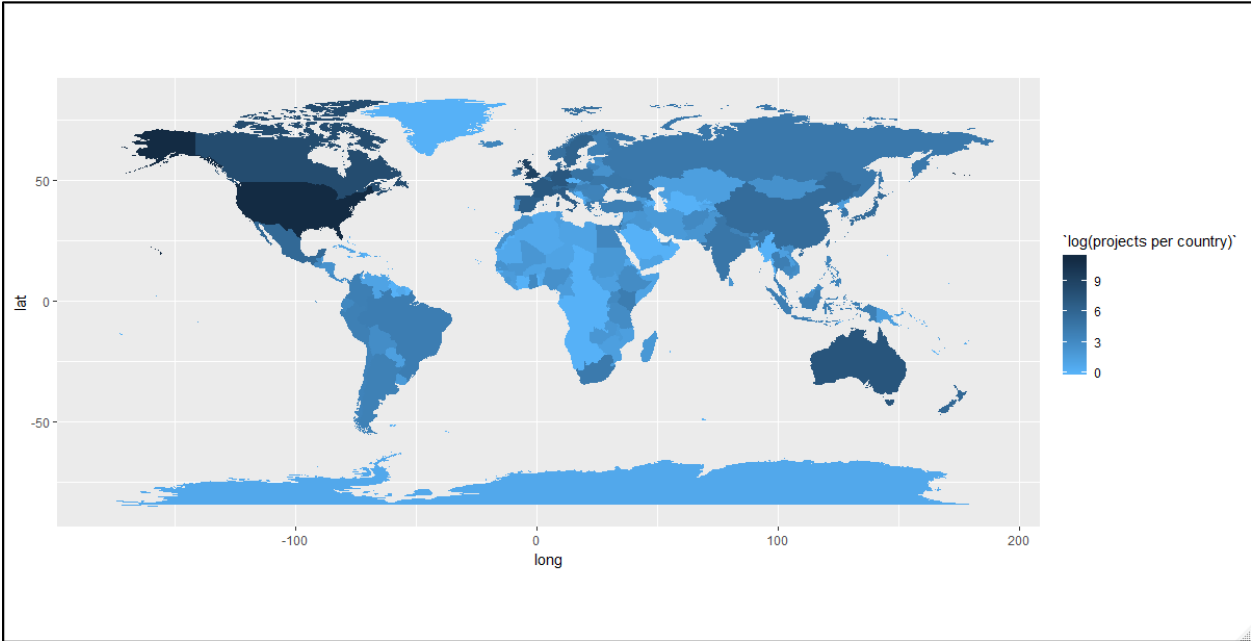
Figure 2. Study1. Choropleth of total crowdfunding projects per country
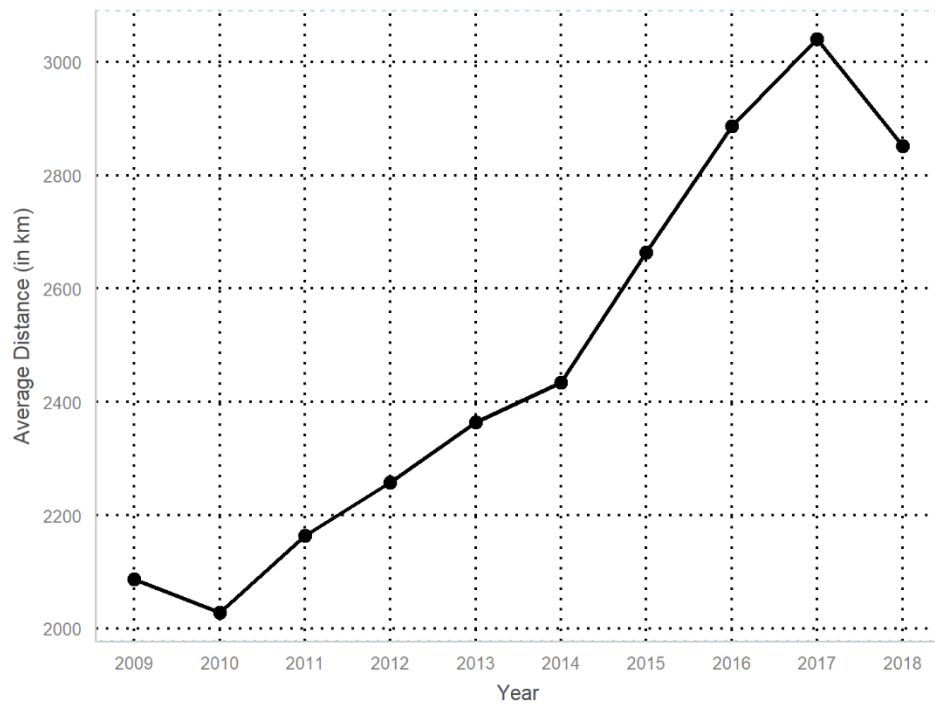
Figure 3. Study 1. Average distance between backers and campaign owners per year (data for year 2018 is until July, and not the whole year)

5.2. Measurements

5.2.1 Independent and control variables

Internal Expert Endorsement: For this measure, I used a dichotomous variable which is coded one for projects that have a Kickstarter "Project We Love" badge and zero for the rest. This measure was used as a signal of quality and preparedness in crowdfunding research (Anglin, Wolfe, et al., 2018; Mollick, 2014; Younkin & Kuppuswamy, 2018).

Duration: The total number of hours each project was live on Kickstarter (i.e. the period within which the project was collecting contributions). I used the number of hours instead of days because for many projects, the difference between start and end times were not integral multiples of complete days. For example, a project that is live for 30 days may have actually been online for 29 and 8 hours and as a result, I took this approach to gain a more accurate measure of project durations.

Goal: This variable represents the target goal of each campaign. As mentioned earlier, all goal levels were converted to USD from their original currency, based on the exchange rate used by Kickstarter at the time of project launch.

Video: This variable was coded as 1 for projects that prepared a video for their pitch and zero for the rest. This variable was used in previous studies (Chan & Parhankangas, 2017; Mollick, 2014) and I controlled for its effect in my analysis.

Word Count: Using Linguistic Inquiry Word Count (LWIC) 2015 I measured the total number of words in each campaign as a control variable (Pennebaker, Boyd, Jordan, & Blackburn, 2015). Word Count have been frequently used as a control variable by previous crowdfunding studies using the same software (Moss et al., 2015, 2018; Parhankangas & Renko, 2017; Younkin & Kuppuswamy, 2018).

Human Capital: This variable captures the total amount collected in previously successful campaigns launched by the same creator (Courtney et al., 2017). Due to technical difficulties of measuring this variable, to the best of my knowledge, only one previous study has used this measure (Courtney et al., 2017). My unit of analysis in this study is individual campaign. To measure this variable, for each of my observations (i.e. each campaign) I summed the total amount of successfully collected funds by the same creator before the launch time of that observation.

Distance: I used the weighted average of the distance between the location of the entrepreneur's city and the top 10 cities that had the greatest number of backers (weights were calculated with respect to the number of backers per city). For measuring distances, I used Google-Map's API to generate the longitude and latitude of the cities in my dataset and then measured the haversine circular distance between the cities using a geocoding package of R software (Kahle & Wickham, 2013).

$$GD_k = \frac{\sum_{j=1}^{j=10} N_{jk} * (HD_{jk})}{\sum_{j=1}^{j=10} N_{jk}}$$

In the formula above GD_k is the average geographical distance between campaign k and its backers. HD_{jk} is the haversine circular distance between campaign k's origination country and its top backing city j and N_{jk} is the number of backers from city j that backed the campaign k.

Positive PsyCap: Following a previous study in crowdfunding I used the dictionary developed by McKenny et al. (2013) to measure the positive psychological capital as a superordinate variable of four components including hope, optimism, confidence and resilience (Anglin, Short, et al., 2018). The list of words that are used to measure this variable are provided in appendix 3.

(un)Preparedness (Spell-error): Following past studies (Courtney et al., 2017; Mollick, 2014) I checked the existence of most common 100 spelling errors by Oxford Dictionary (Oxford Dictionary, 2019) in textual description of campaigns. This variable is measured as the percentage of spelling errors in description of each campaign.

Category: To account for the category-specific heterogeneity, I coded all 15 main categories of Kickstarter[1] into a categorical variable.

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[1] Kickstarter categories are: Fashion, Food, Film & Video, Crafts, Publishing, Design, Games, Technology, Photography, Music, Art, Comics, Theater, Journalism, and Dance.

Year: This categorical variable accounts for the year the project was launched on Kickstarter (my sample includes 10 years of data).

5.2.2 Dependent variable

Success: This dichotomous variable for the success or failure of a crowdfunding campaign was coded one if the campaign reached or surpassed the goal set by the campaign owners, and zero otherwise. This variable has been the most popular measure of success in the AON (all or nothing) crowdfunding context (Colombo, Franzoni, & Rossi-Lamastra, 2014; Greenberg & Mollick, 2016; Lagazio & Querci, 2018; Mollick, 2014; Parhankangas & Renko, 2017).

Table 2 summarizes the independent variables that are used in the model. It also shows a sample of previous papers that used the same ways of measuring the same constructs.

Table 2. Study 1. Variables & Measurement

Variable	Definition	Past studies	Journal
Success	Dichotomous. It is coded 1 if campaign reached its goal and zero otherwise.	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
Distance	Weighted average distance of the creator city and top 10 backer cities	This is the first study to measure it city by city	-
Spell-Error	Common English typos in the text	(Courtney et al., 2017; Viotto da Cruz, 2018)	*Marketing Science/ Journal of Business Venturing*
Endorsement	Receiving the staff pick badge from Kickstarter	(Younkin & Kuppuswamy, 2018)	*Management Science*
Human Capital	Total amount collected in successful campaigns in the past	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
PsyCap	Text analysis of four components including hope, optimism, confidence and resilience	(Anglin, Short, et al., 2018)	*Journal of Business Venturing*
Goal USD	Goal of the project in USD	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
Main Category	Category that the project was listed in	(Anglin, Short, et al., 2018)	*Journal of Business Venturing*
Duration	Total number of days/hours that project was live	(Colombo et al., 2014)	*Entrepreneurship Theory & Practice*
Word Count	Total number of words in description	(Anglin, Wolfe, et al., 2018)	*Journal of Business Venturing*
Video	Having a video pitch	(Josefy, Dean, Albert, & Fitza, 2017)	*Entrepreneurship Theory & Practice*

Chapter 6

Study 1. Analysis and Results

For the analysis of the results I used two methods. The first method is regular logistic regression and the second method is multi-level logistic regression. The results are robust and consistent regardless of the method used. In the following sections I first present the procedure and results of regular logit model. Next, I present the multi-level logistic regression method and the results.

The descriptive statistics and correlations matrix of my sample are provided in Tables 3 and 4 respectively (all data shown in descriptive statistics table are in their original scale non-transformed format). It is worth mentioning that in my analysis all continuous variables are log transformed to correct for skewness (Anglin, Short, et al., 2018) and all continuous variables included in the interactions are mean centered to reduce multicollinearity (Iacobucci, Schneider, Popovich, & Bakamitsos, 2016). To test for multicollinearity I used the generalized variance inflation factors (Fox, 2015; Fox & Monette, 1992) for generalized linear models and the estimates of GVIF^1/2df (analogous to VIF for regular linear models) are all below 3, suggesting that multicollinearity is not an issue in the analysis.

Table 3. Study 1. Descriptive statistics

Descriptive statistics					
Statistic	N	Mean	St. Dev.	Min	Max
Success	102,175	0.51	0.50	0	1
Goal (USD)	102,175	29,718.83	54,348.53	5,001	999,999
Expert Endorsement	102,175	0.22	0.41	0	1
Spelling-Error	102,175	0.003	0.03	0	2
Video	102,175	0.74	0.44	0	1
Duration (days)	102,175	34.76	10.72	1	92
Word Count	102,175	1,154.62	766.47	6	11,717
Human Capital	102,175	16,695.97	226,943.50	0	38,231,095
PsyCap	102,175	12.19	9.55	0.00	192.70
Distance (km)	102,175	2,589.69	2,468.31	0.00	18,300.39

*Duration is measured as number of hours but here it is presented as days for simplicity

Table 4. Study 1. Correlations Table

Correlations Matrix

	1	2	3	4	5	6	7	8	9
1.Success									
2.Goal	-0.17***								
3.Endorsement	0.25***	0.04***							
4.Spelling-Error	-0.03***	0.00	-0.01***						
5.Video	0.48***	-0.03***	0.13***	-0.02***					
6.Duration	-0.09***	0.07***	-0.05***	0.01*	-0.03***				
7.WordCount	0.09***	0.18***	0.14***	-0.01***	0.04***	0.00			
8.Human Capital	0.05***	0.04***	0.04***	0.00	0.02***	-0.04***	0.05***		
9.PsyCap	0.12***	0.15***	0.08***	-0.02***	0.09***	-0.04***	0.66***	0.04***	
10.Distance	-0.05***	0.09***	0.00	0.00	-0.01**	0.03***	0.11***	0.08***	0.10***

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

6.1. Method 1 - Logistic Regression

6.1.1. Method 1 Logistic regression

Considering that the dependent variable is a binary, and following other studies in crowdfunding (Courtney et al., 2017) I used logistic regression to test the suggested hypotheses.

Table 5 shows the results of the logistic regression. In model 1 I used the control variables and the main independent variables. In model 2 I added the distance variable in the model. Hypothesis 1 suggested that the average distance between backers and the entrepreneur is negatively associated with success. Results confirm the association predicted by Hypothesis 1, and distance is negatively associated with the likelihood of success (β = -0.146, p<0.01).

In model 3 I added the interaction of geographic distance and human capital. Hypothesis 2 proposed that as the average geographic distance between backers and creators increases, the effect of human capital signal on the likelihood of success of campaigns increases. Supporting hypothesis 2 the interaction is positive and statistically significant (human capital × geographic distance: β = 0.023, p<0.01).

Model 4 tests the hypothesis 3 regarding the interaction of endorsement and geographic distance and is supported by the results of the logistic regression (endorsement × geographic distance: β = 0.065, p<0.01). As predicted by hypothesis 3, the effect of endorsement on the likelihood of success of

crowdfunding campaigns increases as the spatial distance between backers and

creators increases.

In model 5, I add the interaction between geographic distance and

unpreparedness (measured using spelling errors). The results fail to support

hypothesis 4 as the interaction is not statistically significant ((un)preparedness ×

geographic distance: $\beta = 0.119$, p>0.1).

In model 6 I add the PsyCap variable which is a less costly signal of

quality (Anglin, Short, et al., 2018) and in model 7 I test its interaction with

geographic distance. Interestingly the less costly signal of quality has a positive

interaction with geographic distance (PsyCap × geographic distance: $\beta = 0.105$,

p<0.01) which supports hypothesis 5. It means that this less costly signal of

quality work the same way as the costly signals work in reducing information

asymmetry for distant backers.

To check for consistency in results in model 8 I added all the interactions

in one model. The results are consistent when all the interactions and main effects

are used simultaneously in the model.

Table 5. Study 1. Model1 Predictors of Success

	Logistic Regression							
	Dependent variable: Success							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Category	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Endorsement	1.881***	1.371***	1.376***	1.363***	1.371***	1.414***	1.415***	1.414***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.023)	(0.023)	(0.023)
Video	4.276***	3.911***	3.907***	3.911***	3.911***	3.862***	3.863***	3.857***
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Duration	-0.374***	-0.413***	-0.414***	-0.413***	-0.413***	-0.421***	-0.427***	-0.428***
	(0.026)	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)	(0.034)	(0.034)
Goal (USD)	-0.808***	-0.786***	-0.786***	-0.788***	-0.786***	-0.809***	-0.813***	-0.815***
	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Word Count	0.948***	0.569***	0.569***	0.569***	0.569***	-0.009	-0.017	-0.018
	(0.012)	(0.014)	(0.014)	(0.014)	(0.014)	(0.019)	(0.019)	(0.019)
(un)Preparedness	-3.413***	-2.253***	-2.267***	-2.258***	-2.234***	-2.125***	-2.165***	-2.169***
	(0.397)	(0.458)	(0.457)	(0.458)	(0.479)	(0.454)	(0.453)	(0.476)
Human Capital	0.154***	0.119***	0.105***	0.119***	0.119***	0.124***	0.124***	0.110***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Distance		-0.146***	-0.145***	-0.156***	-0.146***	-0.148***	-0.185***	-0.192***
		(0.008)	(0.008)	(0.009)	(0.008)	(0.008)	(0.009)	(0.010)
Human Capital × Dist.			0.023***					0.025***
			(0.003)					(0.003)
Endorsement × Dist.				0.065***				0.057***
				(0.019)				(0.019)
Unpreparedness × Dist.					0.119			0.088
					(0.460)			(0.444)
PsyCap						0.786***	0.791***	0.793***
						(0.017)	(0.017)	(0.017)
Distance × PsyCap							0.105***	0.105***
							(0.011)	(0.011)
Constant	-0.492	3.731***	3.733***	3.750***	3.730***	8.109***	8.228***	8.253***
	(0.332)	(0.438)	(0.437)	(0.438)	(0.438)	(0.448)	(0.450)	(0.449)
Observations	181,735	102,175	102,175	102,175	102,175	102,175	102,175	102,175
Log Likelihood		-57,306.58	-44,118.64	-44,080.81	-44,113.09	-44,118.58	-43,031.66	-42,978.14
Akaike Inf. Crit.		114,675.20	88,301.27	88,227.62	88,292.18	88,303.16	86,129.33	86,024.29

Note: *p<0.1; **p<0.05; ***p<0.01

6.1.2. Method 1.2. Heckman's two-step method

My variable for the geographic distance is only available for projects with more than nine backers. This may cause selection bias because projects that have more than nine backers may be systematically different from those that have less than nine backers. To account for this matter in my sample, I used Heckman's selection model procedure (Heckman, 1976). Procedure for Heckman's two-step model is as follows. At the first stage which is the selection model a probit model is used to estimate the likelihood of a campaign reaching nine backers. From the selection model stage, I calculate an Inverse Mills Ratio (IMR) which I then use to control for the selection bias in the second stage which is the outcome model.

In this method the first step is a probit model with dependent variable being a dichotomous which is one if the campaign has more than nine backers and zero otherwise. In this first step I have 181,747 observations (i.e. campaigns) that includes all projects regardless of achieving 9 backers or not. This model includes all the independent variables that may affect a project reaching more than nine backers. Lacking better criteria, and following previous studies (Courtney et al., 2017; Nahata, 2008) I employed category level exclusion criteria using two categories: Arts and Games. These two variables are dichotomous showing whether a campaign belongs to Arts category or to Games category. Gaming category has a very active community of online users around the world (Courtney et al., 2017), so it is reasonable to assume that it is easier for campaigns in this category to at least reach ten backers (more than nine backers). On the other hand,

Arts category is very niche, and each campaign has its own very selective

audience so it must be rather difficult for this category to reach the certain number

of nine backers. Also, I don't have any reasons to believe either of these

categories has any effect on the success likelihood of a crowdfunding campaign.

The correlation of the two category variables with success dummy and the binary

variable for reaching more than nine backers supports the idea of using them as

exclusion criteria. Games is positively correlated with reaching more than nine

backers ($r = .08$, $p<.01$), and Arts is negatively correlated with reaching more than

nine backers ($r = -.03$, $p<.01$). Also, none of these two dichotomous category

variables is correlated with success ($r_{games-success} = .00$, $P>.1$ and $r_{arts-success} = .00$,

$P>.1$). Table 6 shows the results of the two stage Heckman procedure.

Table 6. Study 1. Heckman's two-stage model

	Logistic Regression (Heckman procedure)							
	Stage 1 Probit	Stage 2 Logit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
IMR		0.381***	0.354***	0.334***	0.382***	0.406***	0.353***	0.288***
		(0.077)	(0.077)	(0.077)	(0.077)	(0.078)	(0.078)	(0.078)
Endorsement	1.579***	1.666***	1.657***	1.627***	1.666***	1.727***	1.704***	1.664***
	(0.022)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Video	0.909***	3.204***	3.194***	3.192***	3.204***	3.164***	3.151***	3.130***
	(0.007)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)
Duration	-0.033***	-0.495***	-0.494***	-0.494***	-0.495***	-0.507***	-0.510***	-0.507***
	(0.011)	(0.031)	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Goal (USD)	-0.207***	-0.993***	-0.991***	-0.992***	-0.993***	-1.022***	-1.022***	-1.020***
	(0.004)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)	(0.013)
Word Count	0.576***	0.673***	0.665***	0.660***	0.674***	0.120***	0.097***	0.078***
	(0.006)	(0.024)	(0.024)	(0.024)	(0.024)	(0.027)	(0.027)	(0.027)
(un)Preparedness	-1.657***	-2.744***	-2.728***	-2.711***	-2.704***	-2.621***	-2.620***	-2.544***
	(0.133)	(0.428)	(0.427)	(0.429)	(0.454)	(0.423)	(0.423)	(0.456)
Human Capital	0.135***	0.154***	0.145***	0.152***	0.154***	0.159***	0.157***	0.146***
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Arts	-0.164***							
	(0.018)							
Games	0.549***							
	(0.012)							
Distance		-0.231***	-0.230***	-0.252***	-0.230***	-0.238***	-0.274***	-0.292***
		(0.007)	(0.007)	(0.008)	(0.007)	(0.007)	(0.009)	(0.009)
Human Capital × Dist.			0.014***					0.016***
			(0.003)					(0.003)
Endorsement × Dist.				0.149***				0.136***
				(0.018)				(0.019)
Unpreparedness × Dist.					0.19			0.148
					(0.421)			(0.409)
PsyCap						0.765***	0.772***	0.773***
						(0.016)	(0.017)	(0.017)
Distance × PsyCap							0.107***	0.105***
							(0.011)	(0.012)

	Logistic Regression (Heckman procedure)							
Constant	-2.207***	6.077***	6.124***	6.183***	6.075***	10.267***	10.480***	10.611***
	(0.141)	(0.395)	(0.395)	(0.396)	(0.395)	(0.405)	(0.407)	(0.408)
Observations	181,735	102,175	102,175	102,175	102,175	102,175	102,175	102,175
Log Likelihood	-84,465.35	-47,316.11	-47,301.77	-47,286.62	-47,315.94	-46,183.49	-46,124.14	-46,082.11
Akaike Inf. Crit.	168,968.70	94,670.23	94,643.54	94,613.24	94,671.89	92,406.97	92,290.29	92,212.23

Note: *p<0.1; **p<0.05; ***p<0.01

Model 1 in Table 6 is the stage 1 probit model (selection model) which estimates

the likelihood of reaching more than nine backers (dependent is a binary variable

which is coded one if project reached more than nine backers and zero otherwise).

As shown in the Table 6, the two category variables are significantly associated

with success in reaching more than 9 backers. The Games category dichotomous

variable is positively associated ($\beta = 0.549$, $p<0.01$) and the Arts category

dichotomous variable is negatively associated ($\beta = -0.164$, $p<0.01$) with success in

reaching more than 9 backers. In addition to that the Inverse Mills ratio is

statistically significant in all step-two models (i.e. model 2 to model 8) suggesting

the presence of selection bias and supporting the benefit of using the Heckman's

two stage model to account for the selection bias.

In model 2 I added the distance variable in the model and as predicted by

Hypothesis 1, distance is negatively associated with the likelihood of success ($\beta =$

-0.231, $p<0.01$). Figure 4 below shows this relationship.
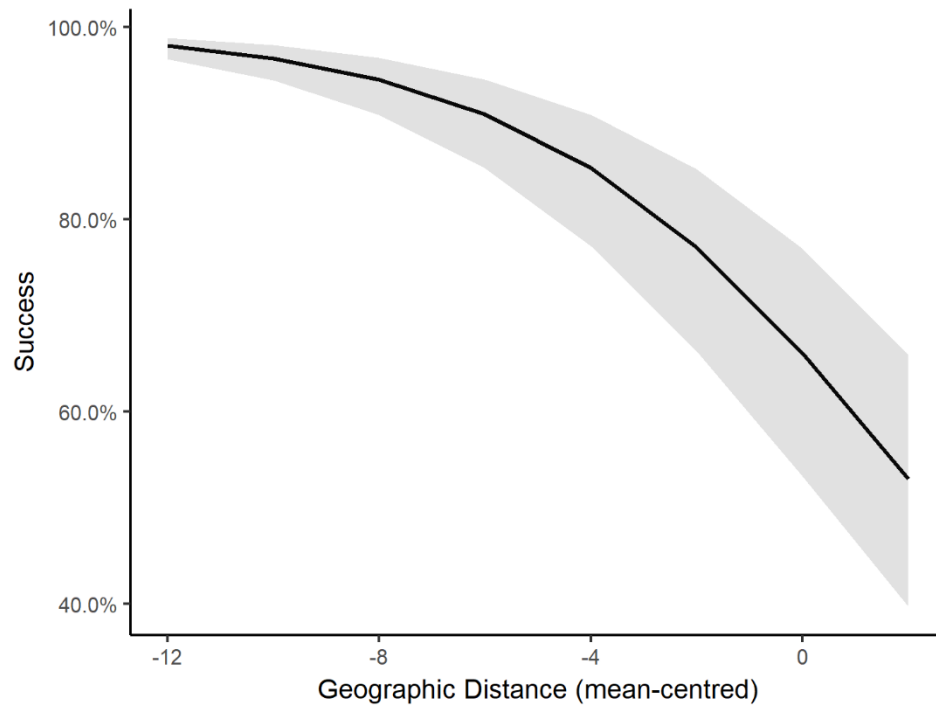
Figure 4. Study 1. Main Effect of Geographic Distance

In model 3 the interaction of geographic distance and human capital is
positive and statistically significant (human capital × geographic distance: β =
0.014, p<0.01), supporting hypothesis 2. In Figure 5, this interaction effect is
depicted.
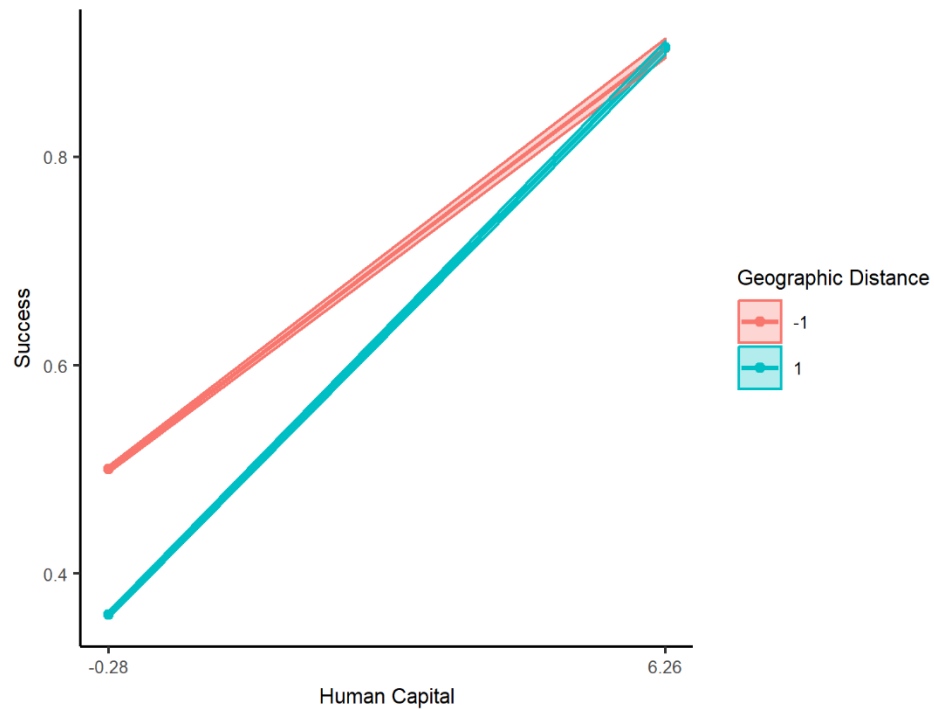
Figure 5. Study 1. Geographic Distance × Human Capital

*(Geographic Distance is at one standard deviation above and below its mean and
PsyCap is at its min and max levels- all continuous variables are log transformed and
mean-centered)*

Model 4 tests the hypothesis 3 regarding the interaction of endorsement

and geographic distance and is supported by the results of the logistic regression

(endorsement × geographic distance: $\beta = 0.149$, p<0.01). This interaction is

depicted in Figure 6.
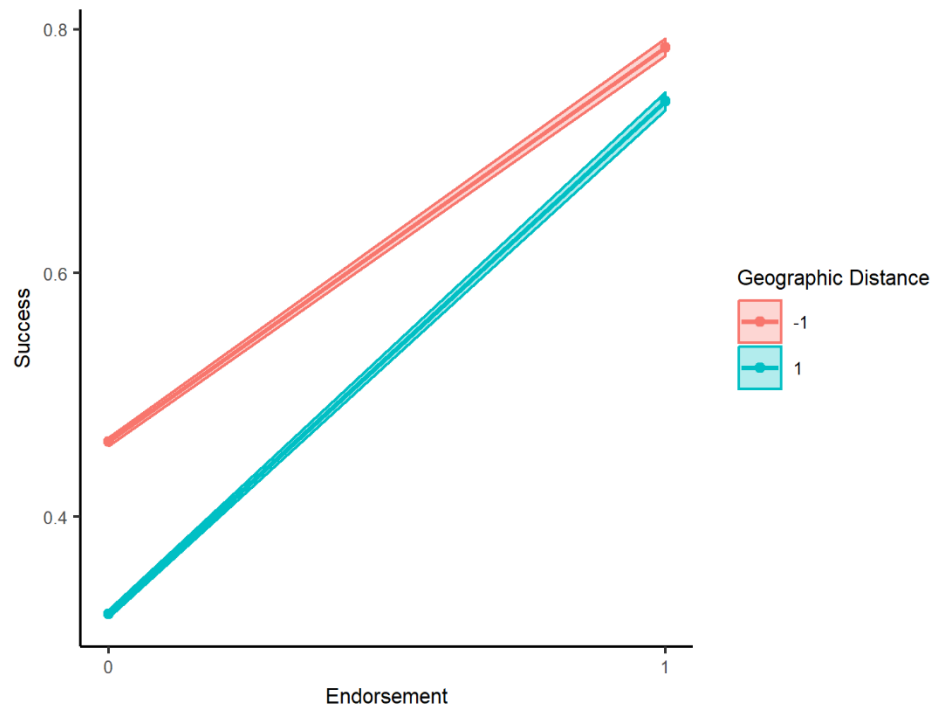
Figure 6. Study 1. Geographic Distance × Endorsement

*(Geographic Distance is at one standard deviation above and below its mean and
PsyCap is at its min and max levels- all continuous variables are log transformed and
mean-centered)*

In model 5, the interaction between geographic distance and
unpreparedness (measured using spelling errors) is added and the results fail to
support hypothesis 4. The interaction is not statistically significant
((un)preparedness × geographic distance: $\beta = 0.190$, $p>0.1$). Figure 7 shows this
interaction.
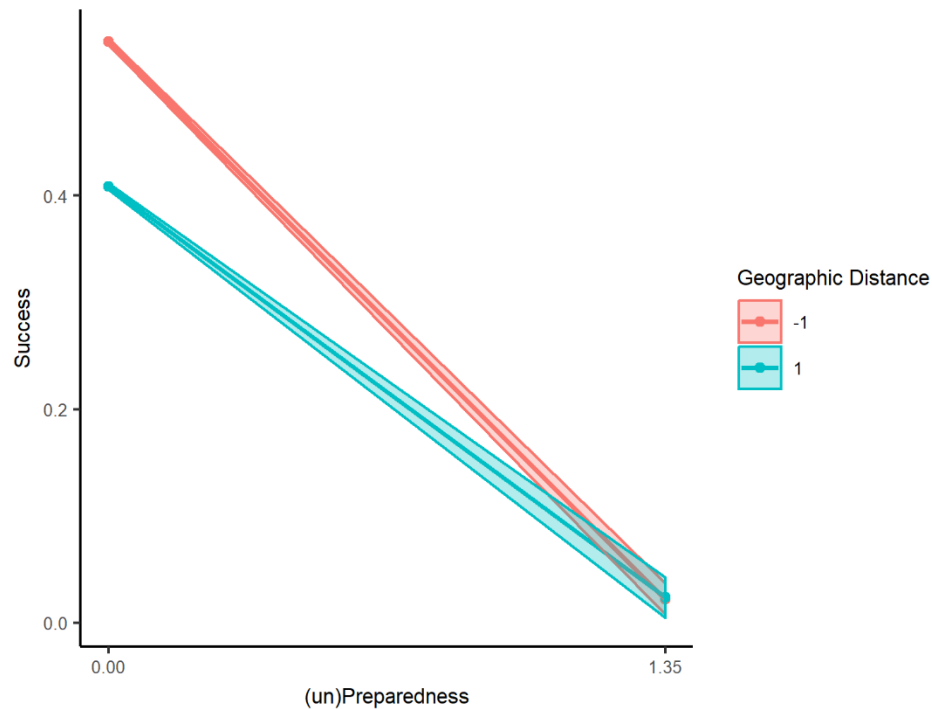
Figure 7. Study 1. Geographic Distance × Unpreparedness

*(Geographic Distance is at one standard deviation above and below its mean and
PsyCap is at its min and max levels- all continuous variables are log transformed and
mean-centered)*

In model 6 the PsyCap variable which is a less costly signal of quality

(Anglin, Short, et al., 2018) is added and in model 7 its interaction with

geographic distance is tested. This less costly signal of quality has a positive

interaction with geographic distance (PsyCap × geographic distance: $\beta = 0.107$,

p<0.01) which supports hypothesis 5. This interaction is illustrated in Figure 8.

Figure 8. Study 1.Geographic Distance × PsyCap

*(Geographic Distance is at one standard deviation above and below its mean and
PsyCap is at its min and max levels- all continuous variables are log transformed and
mean-centered)*

Finally, in model 8 all main variables and interactions are used in the same

model and the results remain consistent.

6.2. Method 2 - Multi-Level Logistic Regression

Since campaigns in our sample are from 15 categories and are from 10

different years (2009-2108), as suggested by previous crowdfunding studies I also

used multi-level logistic regression to test the empirical model (Anglin, Wolfe, et

al., 2018; Davis, Hmieleski, Webb, & Coombs, 2017). In my model all

independent and control variables form level 1. All variables are nested in level 2

which is product categories (Kickstarter has 15 different product categories) and

all product categories are nested in level 3 which is the year in which each project was launched (Anglin, Wolfe, et al., 2018).

My statistical results are provided in Table 7. In model 1, I included all control and independent variables except for geographic distance and PsyCap. In Model 2 I add the geographic distance variable. In the models 3, 4, 5 I check the interaction of geographic distance with quality signals. In model 6 I add the PsyCap as my only less costly signal and in model 7 I test the interaction of PsyCap and distance.

Table 7. Study 1. Multilevel Logistic Regression Results

	Multilevel Logistic Regression							
	Dependent variable: Success							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Endorsement	1.362***	1.381***	1.386***	1.373***	1.381***	1.426***	1.427***	1.425***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Video	3.923***	3.915***	3.911***	3.914***	3.915***	3.866***	3.867***	3.861***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Duration	-0.429***	-0.408***	-0.409***	-0.408***	-0.408***	-0.387***	-0.393***	-0.394***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Goal (USD)	-0.794***	-0.790***	-0.790***	-0.792***	-0.790***	-0.818***	-0.822***	-0.824***
	(0.011)	(0.011)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)
Word Count	0.559***	0.568***	0.568***	0.568***	0.568***	0.001	-0.007	-0.009
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.019)	(0.019)	(0.019)
(un)Preparedness	-2.250***	-2.245***	-2.257***	-2.250***	-2.229***	-2.088***	-2.128***	-2.132***
	(0.414)	(0.406)	(0.415)	(0.413)	(0.412)	(0.417)	(0.416)	(0.418)
Human Capital	0.114***	0.120***	0.106***	0.120***	0.120***	0.124***	0.124***	0.109***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Distance		-0.148***	-0.134***	-0.158***	-0.148***	-0.148***	-0.151***	-0.145***
		(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Human Capital × Dist.			0.024***					0.026***
			(0.003)					(0.003)
Endorsement × Dist.				0.069***				0.062***
				(0.020)				(0.020)
unpreparedness × Dist.					0.101			0.074
					(0.344)			(0.347)
PsyCap						0.777***	0.782***	0.785***
						(0.017)	(0.017)	(0.017)
PsyCap × Dist.							0.104***	0.104***
							(0.010)	(0.010)
Constant	3.671***	3.418***	3.421***	3.439***	3.418***	7.508***	7.616***	7.649***
	(0.321)	(0.314)	(0.319)	(0.316)	(0.315)	(0.336)	(0.334)	(0.336)
Observations	102,175	102,175	102,175	102,175	102,175	102,175	102,175	102,175
Log Likelihood	-44,352.160	-44,171.000	-44,131.080	-44,164.830	-44,170.960	-43,088.950	-43,036.360	-42,986.250
Akaike Inf. Crit.	88,724.320	88,364.000	88,286.160	88,353.660	88,365.920	86,201.900	86,098.710	86,004.500
Bayesian Inf. Crit.	88,819.670	88,468.880	88,400.570	88,468.080	88,480.330	86,316.310	86,222.660	86,157.050

Note: *p<0.1; **p<0.05; ***p<0.01

All my quality signal measures including past success (human capital, $\beta =$ 0.114, p<0.01) and internal expert endorsement (endorsement, $\beta = 1.362$, p<0.01), are positively associated with crowdfunding likelihood of success and both of the associations are statistically significant. It is important to mention that my proxy for preparedness or text quality is the spelling error which actually shows error or unpreparedness and thus the negative association ((un)preparedness, $\beta = -2.250$, p<0.01) is because of my coding method and is in the expected direction.

Hypothesis 1 proposed that geographic distance between funders and founders is negatively associated with the likelihood of success in crowdfunding. By adding geographic distance in model 2, I find that the geographic distance is negatively associated with crowdfunding performance ($\beta = -.148$, p<0.01). Accordingly, my results in model 2 support hypothesis 1 with regards to the negative association between geographic distance and likelihood of success. A depiction of the association between crowdfunding success probability and geographic distance is provided in Figure 9 below.
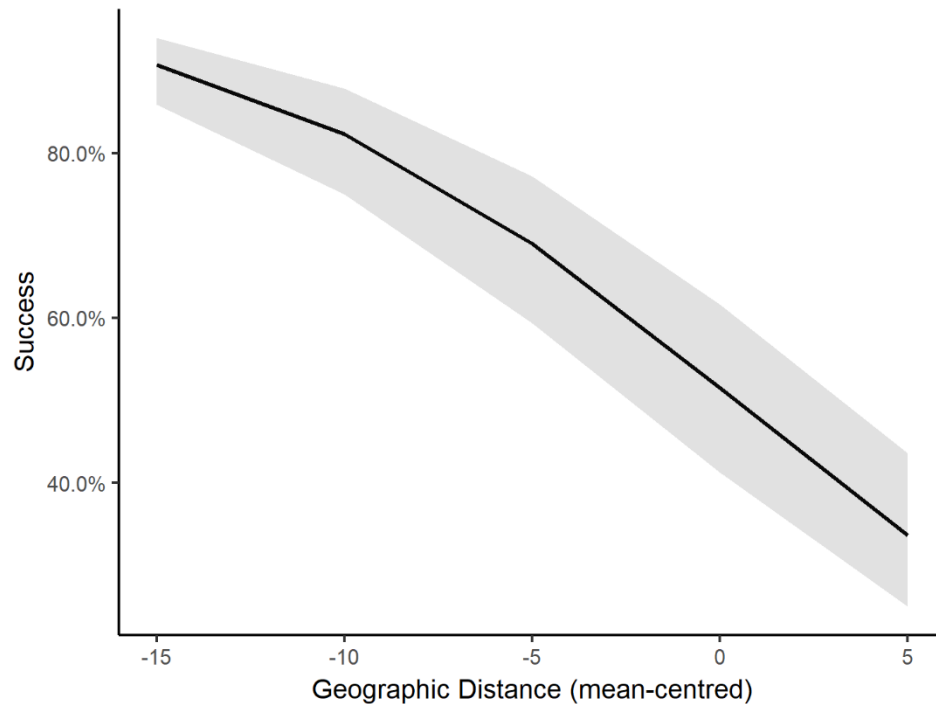
Figure 9. Study 1. Main effect of geographic distance on the likelihood of success of crowdfunding campaigns

Hypothesis 2 proposed that the positive association between human capital (i.e. measured by the number of previously successful campaigns by the same founder) and likelihood of success is stronger for campaigns that are collecting funds from distant backers than campaigns that are receiving funds from nearby backers. Based on hypothesis 2, I expect to see a positive coefficient for the interaction between human capital and geographic distance. In model 3 I test this interaction of human capital with geographic distance and supporting hypothesis 2 the interaction is significant and positive (human capital × geographic distance: β = 0.024, p<0.01). This finding supports my hypothesis and the idea that human

capital signal (i.e. past success in crowdfunding) is more valuable for success of

campaigns that are collecting funds from more remote backers.

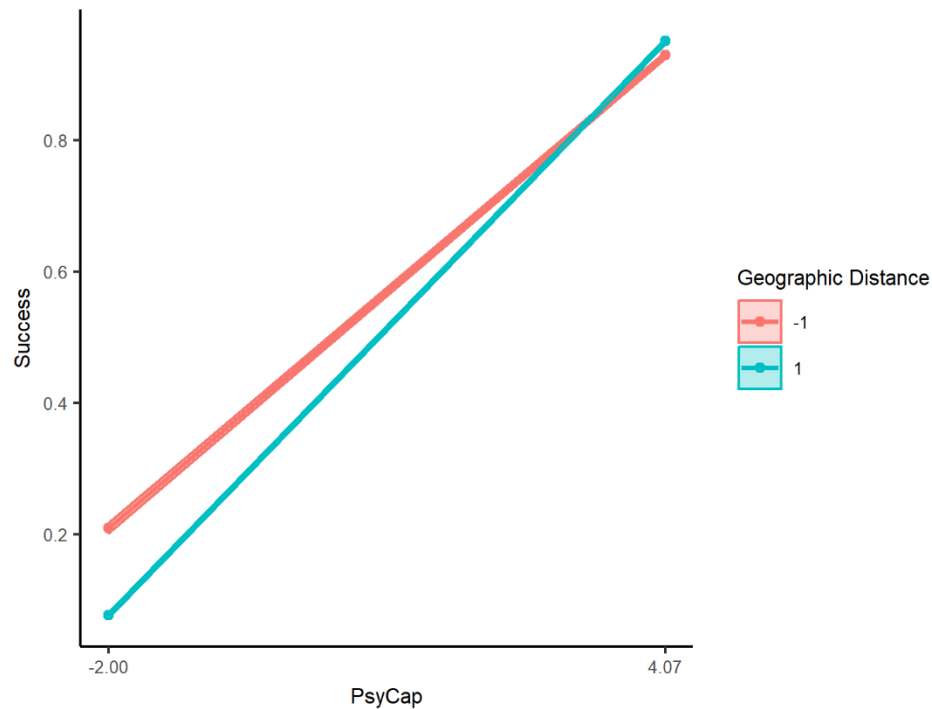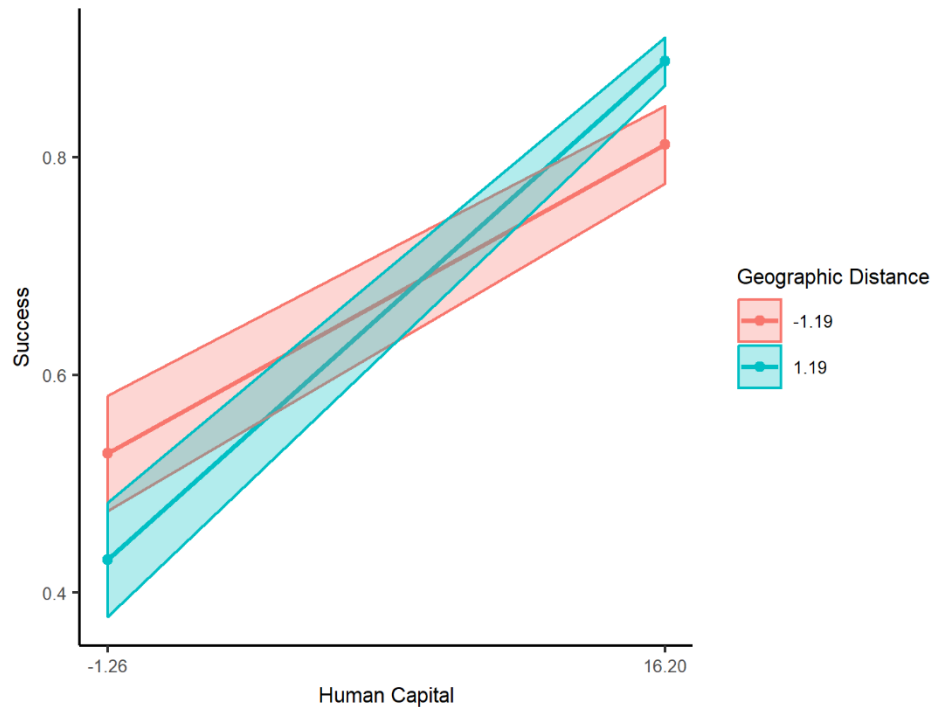*Figure 10. Study 1. Geographic Distance × Human Capital (Geographic Distance is at
one standard deviation above and below its mean- all continuous variables are log
transformed and mean-centered)*

Hypothesis 3 proposed that internal expert endorsement which is another

form of quality signal should be more valuable for more distant backers. In model

4, I tested the moderating effect of geographic distance on influence of internal

expert endorsement, and I found a statistically significant and positive interaction

term (endorsement × geographic distance: $\beta = 0.069$, $p<0.01$). This finding

supports my hypothesis 3.
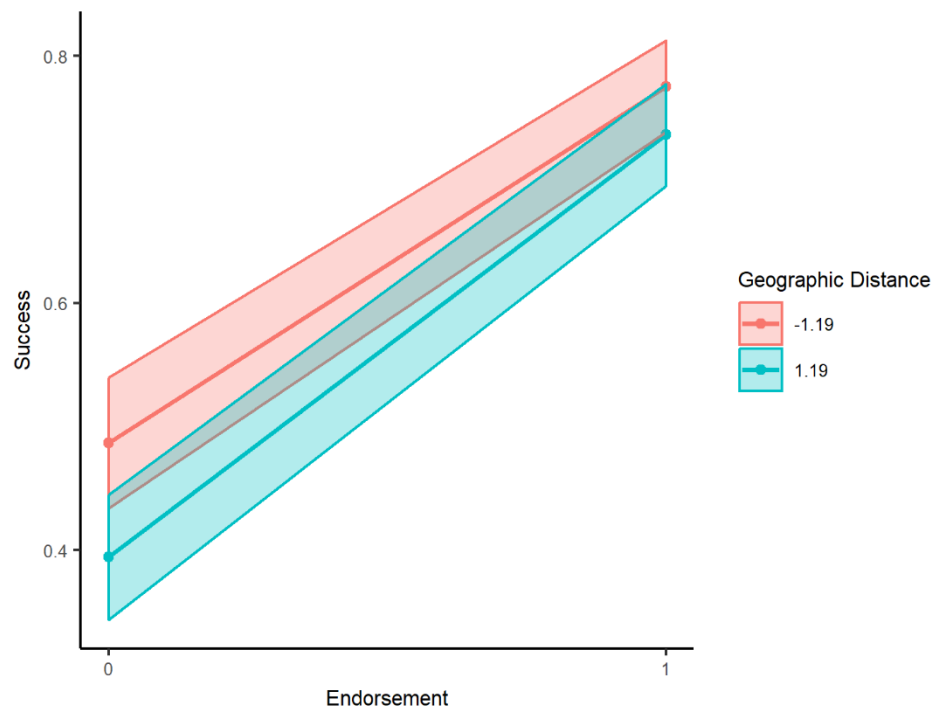
Figure 11. Study 1. Geographic Distance × Endorsement (Geographic Distance is at one standard deviation above and below its mean- all continuous variables are log transformed and mean-centered)

Hypothesis 4 proposed a similar interaction between preparedness signal and geographic distance. I tested this hypothesis in model 5. It is important to mention that as I used spelling error as a proxy, I am testing the association between unpreparedness and likelihood of success. Accordingly, I expect to see a negative interaction effect between geographic distance and unpreparedness. The unpreparedness measure is negatively associated with the likelihood of success. Interaction between unpreparedness and expert endorsement is not statistically significant ((un)preparedness × geographic distance: $\beta = 0.101$, p>0.1). My results fail to support hypothesis 4 regarding interaction of geographic distance and

spelling error measure (i.e. reverse of preparedness). It can be related to the

difficulty of finding such errors. Since it is very difficult for ordinary people to

spot the error in spelling of few words among a full document, this variable is not

noticed enough.
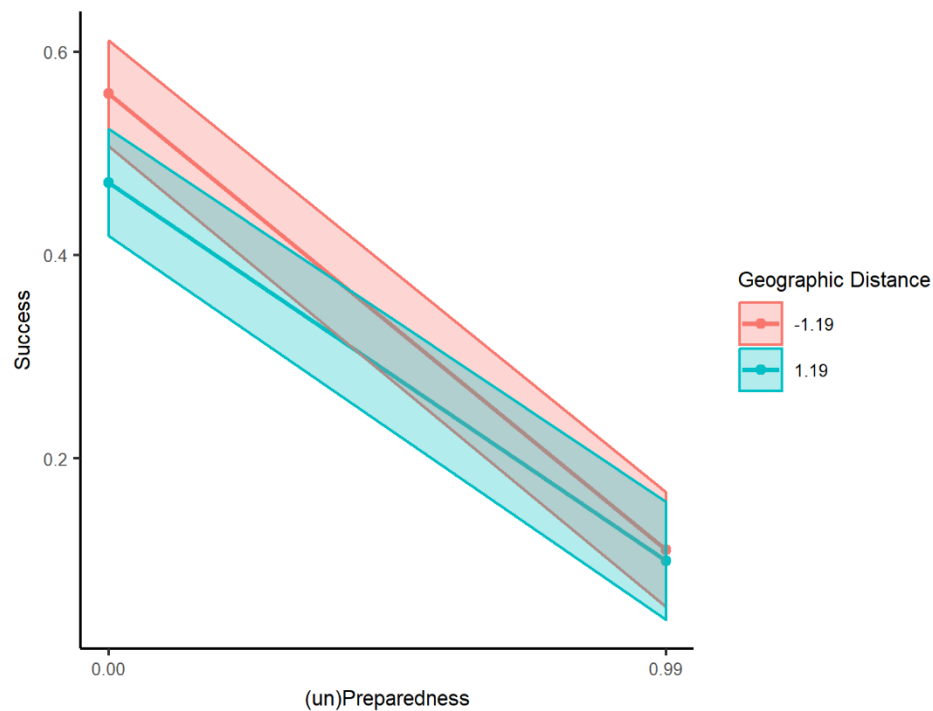
*Figure 12. Study 1. Geographic Distance × Unpreparedness (Geographic Distance is at
one standard deviation above and below its mean and Unpreparedness is at its min and
max levels- all continuous variables are log transformed and mean-centered)*

Hypothesis 5 proposed a positive interaction between positive

psychological capital language and geographic distance. In model 7 I tested this

interaction and my result support the hypothesis 5 (PsyCap × geographic distance:

$\beta = 0.104$, p<0.01). This finding is very interesting because it shows that less

costly signal (Anglin, Short, et al., 2018) act the same way as traditional salient

signals of quality do. This is significant because it supports the importance and

informativeness of rhetorical signals (Steigenberger & Wilhelm, 2018). That the

value of a rhetorical signal increases for projects that are collecting funds from

distant backers, supports the recent research that emphasizes the informational

worth of such signals (Anglin, Short, et al., 2018; Steigenberger & Wilhelm,

2018). This effect is shown in Figure 13.
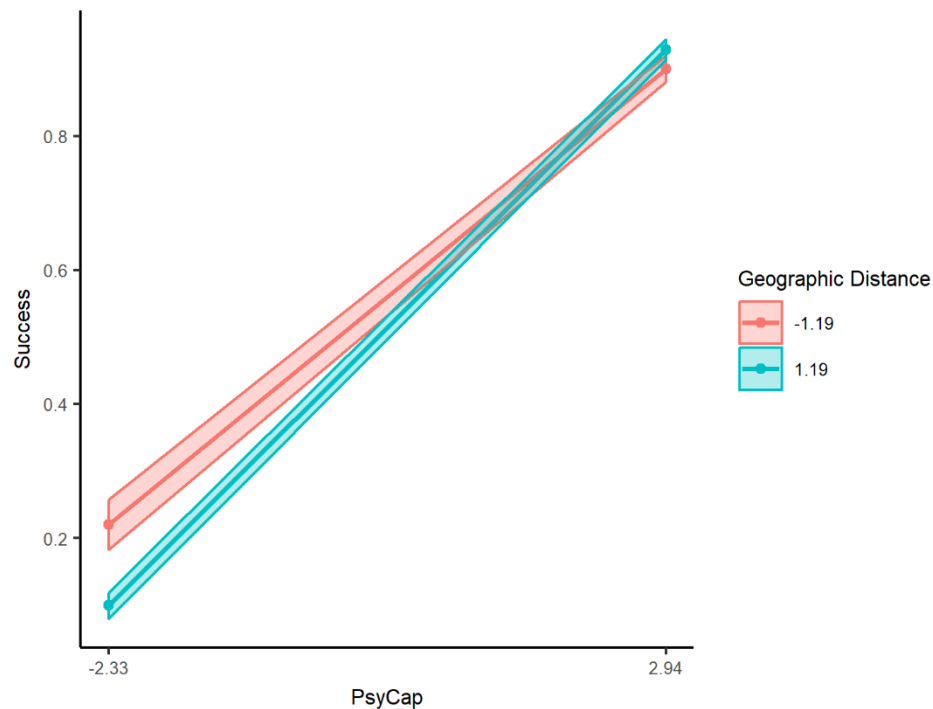
*Figure 13. Study 1. Geographic Distance × PsyCap (Geographic Distance is at one
standard deviation above and below its mean and Unpreparedness is at its min and max
levels- all continuous variables are log transformed and mean-centered)*

Chapter 7

Study 1. Robustness Tests

7.1. Robustness 1: Cultural Distance

Since cultural distance may also be a variable affecting success or failure

of crowdfunding campaigns I controlled for the effect of cultural distance as the

first robustness test.

Similar to previous studies (Johnson & Tellis, 2008; Mitra & Golder,

2002; Samaha, Beck, & Palmatier, 2014) using Hofstede's cultural dimensions

(Hofstede, 2001), I calculated a composite index of the Euclidean distances of the

six dimensions of culture (i.e., uncertainty avoidance, power distance,

individualism, masculinity/femininity, indulgence, and long term orientation) for

each pair of creating country and backer country (Johnson & Tellis, 2008; Mitra &

Golder, 2002; Samaha et al., 2014). Finally, since I have ten backer countries for

each campaign, an algebraic weighted average of all cultural distances of each of

the ten backer countries and the creator country (with respect to the number of

backers per country) was measured and used as the cultural distance index.

$$CD_k = \frac{\sum_{j=1}^{j=10} N_{jk} * (\sum_{i=1}^{i=6}(I_{ij} - I_{ik})^2)}{\sum_{j=1}^{j=10} N_{jk}}$$

In the formula above CD_k (k denotes each campaign/observation) is the

measured cultural distance between the campaign origination country and its

backers. Each of the 6 dimensions of Hofstede's index are denoted by i and each

of the 10 backing countries for campaign k are denoted by j. N_{jk} is the number of

backers from country j that contributed to the campaign k.

The results of the model including cultural distance is provided in Table 8.

As shown in Table 8 all the main effects and interactions stay consistent even after

adding cultural distance to the model.

Table 8. Study 1. Controlling for the effect of cultural distance

	Logistic Regression Including Cultural Distance (Heckman procedure)							
	Stage 1 Probit	Stage 2 Logit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
IMR		0.437***	0.407***	0.383***	0.437***	0.465***	0.409***	0.337***
		(0.077)	(0.077)	(0.078)	(0.077)	(0.078)	(0.078)	(0.079)
Cultural Distance		0.090***	0.090***	0.092***	0.090***	0.097***	0.097***	0.100***
		(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Endorsement	1.579***	1.669***	1.659***	1.625***	1.669***	1.730***	1.706***	1.660***
	(0.022)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Video	0.909***	3.224***	3.212***	3.210***	3.224***	3.181***	3.168***	3.146***
	(0.007)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)
Duration	-0.033***	-0.518***	-0.517***	-0.517***	-0.518***	-0.532***	-0.535***	-0.531***
	(0.011)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Goal (USD)	-0.207***	-1.005***	-1.003***	-1.004***	-1.005***	-1.036***	-1.035***	-1.034***
	(0.004)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)	(0.014)
Word Count	0.576***	0.662***	0.653***	0.646***	0.662***	0.103***	0.078***	0.056**
	(0.006)	(0.024)	(0.024)	(0.024)	(0.024)	(0.027)	(0.027)	(0.027)
(un)Preparedness	-1.657***	-2.907***	-2.889***	-2.872***	-2.862***	-2.808***	-2.807***	-2.723***
	(0.133)	(0.436)	(0.436)	(0.438)	(0.464)	(0.433)	(0.432)	(0.468)
Human Capital	0.362***	0.422***	0.397***	0.417***	0.422***	0.438***	0.433***	0.401***
	(0.007)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)
Arts	-0.164***							
	(0.018)							
Games	0.549***							
	(0.012)							
Distance		-0.370***	-0.370***	-0.401***	-0.369***	-0.384***	-0.429***	-0.457***
		(0.010)	(0.010)	(0.011)	(0.010)	(0.011)	(0.012)	(0.013)
Human Capital × Dist.			0.047***					0.055***
			(0.008)					(0.008)
Endorsement × Dist.				0.200***				0.184***
				(0.022)				(0.023)
Unpreparedness × Dist.					0.250			0.198
					(0.513)			(0.500)
PsyCap						0.773***	0.780***	0.781***
						(0.017)	(0.017)	(0.017)

Logistic Regression Including Cultural Distance (Heckman procedure)								
Distance × PsyCap							0.131***	0.128***
							(0.014)	(0.014)
Constant	-2.207***	6.173***	6.225***	6.296***	6.171***	10.422***	10.648***	10.799***
	(0.141)	(0.396)	(0.396)	(0.397)	(0.396)	(0.408)	(0.410)	(0.412)
Observations	181,735	101,569	101,569	101,569	101,569	101,569	101,569	101,569
Log Likelihood	-84,465.35	-46,854.00	-46,837.83	-46,817.60	-46,853.79	-45,712.84	-45,650.79	-45,600.40
Akaike Inf. Crit.	168,968.700	93,747.990	93,717.660	93,677.190	93,749.590	91,467.670	91,345.580	91,250.790

Note: *p<0.1; **p<0.05; ***p<0.01, Number of observations is different from previous models because Hofstede's cultural dimensions are not available for all countries.

7.2. Robustness 2: US vs. Non-US observations

Since a big part of my sample is made of campaigns that are based in the

United States (i.e. the creators are in the United States), and to assure that the

results are not driven by US campaigns I tested the hypotheses for two subsets of

US Based campaigns and Non-US based campaigns separately. Table 9 shows the

result for US-Based campaigns and Table 10 shows the results for Non-US

campaigns.

According to the findings in Tables 9 and 10, the results are the same for

US and Non-Us campaigns and are the same as the previous models that included

total campaigns regardless of their country of origination. This further adds to the

robustness of my findings and shows that the effects of robust.

Table 9. Study 1. Results for US based observations

	Logistic Regression Including Cultural Distance (Heckman procedure)							
	Stage 1 Probit	Stage 2 Logit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
IMR		0.459***	0.411***	0.386***	0.457***	0.460***	0.417***	0.312***
		(0.088)	(0.088)	(0.089)	(0.088)	(0.089)	(0.089)	(0.090)
Cultural Distance		0.196***	0.197***	0.201***	0.196***	0.194***	0.194***	0.200***
		(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Endorsement	1.682***	1.679***	1.663***	1.619***	1.678***	1.732***	1.714***	1.647***
	(0.029)	(0.047)	(0.047)	(0.047)	(0.047)	(0.048)	(0.048)	(0.047)
Video	0.910***	3.237***	3.219***	3.218***	3.236***	3.197***	3.186***	3.154***
	(0.009)	(0.040)	(0.040)	(0.040)	(0.040)	(0.041)	(0.041)	(0.040)
Duration	-0.043***	-0.486***	-0.484***	-0.485***	-0.486***	-0.508***	-0.509***	-0.506***
	(0.013)	(0.036)	(0.036)	(0.036)	(0.036)	(0.037)	(0.037)	(0.037)
Goal (USD)	-0.217***	-1.016***	-1.013***	-1.015***	-1.016***	-1.037***	-1.038***	-1.035***
	(0.005)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Word Count	0.596***	0.678***	0.664***	0.657***	0.678***	0.085***	0.067**	0.035
	(0.008)	(0.028)	(0.028)	(0.028)	(0.028)	(0.031)	(0.032)	(0.032)
(un)Preparedness	-1.863***	-2.448***	-2.397***	-2.373***	-2.581***	-2.368***	-2.365***	-2.396***
	(0.170)	(0.483)	(0.483)	(0.483)	(0.578)	(0.487)	(0.485)	(0.586)
Human Capital	0.376***	0.416***	0.379***	0.409***	0.415***	0.431***	0.427***	0.382***
	(0.008)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)
Arts	-0.122***							
	(0.021)							
Games	0.529***							
	(0.015)							
Distance		-0.589***	-0.593***	-0.632***	-0.591***	-0.583***	-0.619***	-0.663***
		(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.015)	(0.017)
Human Capital × Dist.			0.069***					0.055***
			(0.010)					(0.008)
Endorsement × Dist.				0.279***				0.184***
				(0.029)				(0.023)
Unpreparedness × Dist.					-0.551			0.198
					(0.731)			(0.500)
PsyCap						0.797***	0.799***	0.800***
						(0.019)	(0.020)	(0.020)

				Logistic Regression Including Cultural Distance (Heckman procedure)				
Distance × PsyCap							0.109***	0.104***
							(0.017)	(0.017)
Constant	-2.146***	5.637***	5.719***	5.806***	5.639***	10.139***	10.302***	10.517***
	(0.157)	(0.429)	(0.430)	(0.432)	(0.429)	(0.444)	(0.447)	(0.450)
Observations	134,669	77,107	77,107	77,107	77,107	77,107	77,107	77,107
Log Likelihood	-61,889.23	-34,963.35	-34,939.03	-34,921.78	-34,962.82	-34,082.84	-34,057.65	-33,994.57
Akaike Inf. Crit.	123,816.50	69,966.70	69,920.07	69,885.57	69,967.63	68,207.67	68,159.30	68,039.13

Note: *p<0.1; **p<0.05; ***p<0.01

Below is Table 10, which provides the results for the Non-US based campaigns. The results are consistent with the US-based results and the findings of both subsets are consistent with the results for all data combined.

The findings with regards to different methods and different specifications and sampling are summarized in Table 11. Table 11 shows that the findings stay consistent regardless of estimation method, model specification and sample selection.

Table 10. Study 1. Results for Non-US based observations

	Logistic Regression Including Cultural Distance (Heckman procedure)							
	Stage 1 Probit	Stage 2 Logit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
IMR		0.456***	0.446***	0.424***	0.457***	0.551***	0.460***	0.429***
		(0.160)	(0.159)	(0.160)	(0.159)	(0.160)	(0.162)	(0.162)
Cultural Distance		0.024*	0.025*	0.026*	0.024*	0.030**	0.033**	0.035**
		(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Endorsement	1.424***	1.632***	1.629***	1.602***	1.633***	1.713***	1.672***	1.647***
	(0.036)	(0.084)	(0.084)	(0.084)	(0.084)	(0.084)	(0.085)	(0.085)
Video	0.892***	3.089***	3.082***	3.082***	3.090***	3.063***	3.047***	3.034***
	(0.015)	(0.066)	(0.066)	(0.066)	(0.066)	(0.067)	(0.067)	(0.067)
Duration	0.004	-0.604***	-0.603***	-0.602***	-0.603***	-0.597***	-0.608***	-0.603***
	(0.022)	(0.066)	(0.066)	(0.066)	(0.066)	(0.067)	(0.067)	(0.068)
Goal (USD)	-0.185***	-1.020***	-1.019***	-1.020***	-1.020***	-1.062***	-1.062***	-1.062***
	(0.007)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)	(0.026)	(0.026)
Word Count	0.547***	0.728***	0.725***	0.718***	0.728***	0.316***	0.278***	0.269***
	(0.012)	(0.049)	(0.049)	(0.049)	(0.049)	(0.054)	(0.054)	(0.054)
(un)Preparedness	-1.033***	-2.840***	-2.854***	-2.837***	-2.812***	-2.813***	-2.816***	-2.779***
	(0.208)	(0.854)	(0.853)	(0.857)	(0.852)	(0.841)	(0.843)	(0.852)
Human Capital	0.309***	0.420***	0.404***	0.417***	0.420***	0.438***	0.429***	0.410***
	(0.015)	(0.023)	(0.024)	(0.023)	(0.023)	(0.023)	(0.024)	(0.024)
Arts	-0.269***							
	(0.034)							
Games	0.598***							
	(0.023)							
Distance		-0.163***	-0.161***	-0.182***	-0.162***	-0.188***	-0.248***	-0.262***
		(0.017)	(0.017)	(0.019)	(0.017)	(0.018)	(0.022)
Human Capital × Dist.			0.028*					0.055***
			(0.016)					(0.008)
Endorsement × Dist.				0.115***				0.184***
				(0.035)				(0.023)
Unpreparedness × Dist.					0.793			0.198
					(0.643)			(0.500)
PsyCap						0.610***	0.629***	0.630***
						(0.032)	(0.033)	(0.033)

Logistic Regression Including Cultural Distance (Heckman procedure)							
Distance × PsyCap							0.166***	0.165***
							(0.024)	(0.025)
Constant	-2.975***	7.353***	7.369***	7.430***	7.343***	10.539***	11.078***	11.137***
	(0.411)	(1.797)	(1.804)	(1.844)	(1.798)	(1.938)	(2.041)	(2.098)
Observations	47,060	24,462	24,462	24,462	24,462	24,462	24,462	24,462
Log Likelihood	-22,383.22	-11,464.58	-11,463.03	-11,459.62	-11,463.72	-11,279.89	-11,237.98	-11,231.59
Akaike Inf. Crit.	44,804.440	22,969.150	22,968.070	22,961.250	22,969.450	22,601.780	22,519.950	22,513.180

Note: *p<0.1; **p<0.05; ***p<0.01

Table 11. Study 1. Predicted effects & findings

Hypothesis	Predicted Effect	Findings (regular Logit)	Findings (multilevel logit)	Robustness 1	Robustness 2
H1: Distance	-	-	-	-	-
H2: Human Capital × Distance	+	+	+	+	+
H3: Endorsement × Distance	+	+	+	+	+
H4: Preparedness × Distance	+	n.s.	n.s.	n.s.	n.s.
H5: PsyCap × Distance	+	+	+	+	+

7.3. Robustness 3: Between Countries

In this section I show the negative effect of geographic distance on number of transactions between countries. For this robustness test I counted the number of backers from each country to the other. For this reason, I created a list of all pairs of countries in the dataset and used the number of transactions between the two as the dependent variable. For example, for countries A and B, I created two pairs AB and BA. For the first pair (AB), I counted the number of backers from country A that supported projects in country B. For the other pair (BA), I counted the number of backers from country B that supported projects in country A. Since this measure is for countries (and not cities), following studies in international trade I considered the distance between capitals of the two countries as my measure of spatial distance. For within country contributions (i.e. AA or BB) I assumed that each country is a circular plane and thus the average distance between any two points in the circle are equal to the radius of the circle (Blum & Goldfarb, 2006).

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In this model I checked the effect of geographic distance between countries on the number of crowdfunding transactions between them. Following studies in international trade and since the dependent is discrete (i.e. number of transactions) I need to use Poisson maximum likelihood regression. Here since the number of zeros in the dependent variable are huge, I used pseudo Poisson maximum likelihood estimation (PPML) to test the hypothesis regarding the negative effect of geographic distance between countries on the number of transactions between them (Burtch et al., 2014; Santos Silva & Tenreyro, 2006).

It is also important to mention that in this analysis using an existing database (Mayer & Zignago, 2011) I also controlled for existence of a common language between countries, and contiguity (sharing a border). I also controlled for unobservable heterogeneity that may exist among countries by adding the fixed effects of both backer and creator country to the model. The results are provided in Table 12. The findings strongly suggest that the geographic distance between countries reduces the number crowdfunding transactions between them, which further supports the idea suggested by hypothesis 1.

In Table 12, model 1 includes all country pairs and bilateral crowdfunding transactions between them (regardless of the trade being zero or more). The PPML results for this model show that the distance between countries negatively affects the crowdfunding transactions between them ($\beta = -0.30$, $p<0.01$). In model 2, I removed the within country transactions (for example contributions from Canadian backers to Canadian creators). The results in model 2 show that even

after removing the within country contributions still spatial distance negatively

affects crowdfunding transactions. The effect of spatial distance is negative and

statistically significant (β = -0.20, p<0.01).

In models 3 and 4, I removed the observations with zero transactions (i.e.

country pairs that had no crowdfunding contribution to each other). Model 3

includes both within and between country transactions (excluding country pairs

with zero transactions). Model 3 also supports the idea that spatial distance

reduces crowdfunding transactions (β = -0.29, p<0.01). In model 4 I again

removed the within country transactions after excluding country pairs with zero

transactions. The results stay the same and again shows that spatial distance

impedes crowdfunding trades between countries (β = -0.20, p<0.01). As supported

by all 4 modifications of the PPML test, this robustness test is itself robust to

different ways of running the test.

Table 12. Study 1. Crowdfunding transactions among countries (robustness check for effect of geographic distance)

	PPML Results			
	Model 1	Model 2 (No internal trade)	Model 3 No zero	Model 4 No zero (No internal trade)
(Intercept)	2.56 (1.69)	0.12 (1.02)	2.87 (1.60)	0.34 (0.95)
Distance	-0.30*** (0.03)	-0.20*** (0.02)	-0.29*** (0.03)	-0.20*** (0.02)
Cultural Distance	-0.50*** (0.03)	-0.01 (0.03)	-0.50*** (0.03)	-0.01 (0.03)
Intra-country Distance	0.64** (0.29)	0.57*** (0.18)	0.58 (0.28)	0.53*** (0.17)
Contiguity	-0.28*** (0.10)	0.03 (0.05)	-0.28*** (0.10)	0.04 (0.05)
Common Language	0.01 (0.07)	0.28*** (0.05)	0.01 (0.07)	0.27*** (0.05)
Creator Country	Controlled	Controlled	Controlled	Controlled
Backer Country	Controlled	Controlled	Controlled	Controlled
Observations	4818	4752	3173	3108

Note: *p<0.1; **p<0.05; ***p<0.01

Chapter 8

Study 1. Discussion, limitations and future research

8.1. Discussion

Two key specifications of crowdfunding transactions are that they happen
between geographically distant parties (Agrawal et al., 2015), and that there is a
problem of information asymmetry between backers and creators (Agrawal et al.,
2014; Ahlers et al., 2015). My study investigated crowdfunding from these two
aspects and the important interaction between these two elements. In my study I
also investigated and suggested traditional signals (Kirmani & Rao, 2000) and
less costly signals of quality (Anglin, Short, et al., 2018; Steigenberger &
Wilhelm, 2018) as possible remedies to this informational gap.

In the absence of proper remedies to the problem of adverse selection,
some otherwise advantageous transactions between buyers and sellers might not
take place and one remedy to this problem is providing quality signals (Milgrom
& Stokey, 1982; Ragozzino & Reuer, 2011). In my estimation, the average
geographic distance between backers and creators is around 2,589 km and has
been increasing over the past years (a plot of yearly average geographic distance
between backers and creators is provided in Figure 6). This physical distance
between entrepreneurs and backers is very high compared to the average distance
between investors and entrepreneurs in traditional funding sources such as VCs
(Stuart & Sorenson, 2003). The main way that crowdfunding entrepreneurs can
reduce information asymmetry issue is through providing quality signals

(Courtney et al., 2017). Since the distance between backers and creators has

increased due to advancements in technology, it is very important for

crowdfunding campaign owners to understand the interaction of geographic

distance and quality signals. My study addressed this question by investigating the

moderating role of geographic distance on the importance of quality signals.

Findings of this study have both practical and theoretical value by showing the

importance of signals for the success of projects that plan to get funds from

distant international backers.

From a theoretical point of view, my research adds to the signaling theory

literature and crowdfunding research by showing that the value and influence of

signals increase with geographic distance between trade parties. Previous

crowdfunding research have investigated the importance of costly quality signals

(Courtney et al., 2017), less costly and rhetorical signals (Anglin, Short, et al.,

2018; Steigenberger & Wilhelm, 2018) and the interactions between different

types of signals (Anglin, Short, et al., 2018; Steigenberger & Wilhelm, 2018), but

I add to the literature by proposing hypotheses and empirically testing the

interaction between geographic distance and different quality signals including

human capital, and endorsement, and less costly quality signals such as PsyCap. It

is very interesting that firstly geographic distance creates information gap even in

virtual settings. Second, this study's finding that traditional signals can be

effective in reducing the geographically related information gap in virtual settings

is of important value for the literature. Third, this study shows that less costly

signals of quality that have been neglected hugely by scholars can indeed be

informative and are valuable to backers who are in information disadvantage. This

further supports this new and burgeoning literature that at least in settings where

the stakes are not very high such less costly signals are very valuable and perform

the same way that costly signals do.

From practical point of view, my study provides influential suggestions

that help entrepreneurs increase their chances of success in modern fundraising

settings in which the distance between entrepreneurs and backers is very large.

Crowdfunding by definition takes place over the Internet (Mollick, 2014;

Schwienbacher & Larralde, 2010) and is believed to reduce geographic hurdles

for early stage entrepreneurs seeking funds. It is supposed to remove geographic

biases and democratize capital (Mollick & Robb, 2016). Previous findings suggest

that crowdfunding eases geographic constraints, but not totally (Mollick & Robb,

2016). My research shows that in the era that Internet is removing the

transactional barriers of trade between distant areas, there is still a need to reduce

informational barriers between transaction parties. In this study, I have shown that

not only signals are very effective ways of success in crowdfunding, but also

importantly and interestingly this positive effect of quality signals is elevated for

projects that are collecting funds from more geographically remote backers.

Entrepreneurs and innovators will benefit from this study by understanding the

value of quality signals even in virtual settings where the physical distance is

assumed to be nonrelevant. My study interestingly shows that in these virtual

settings geographic distance is still creating informational barrier that needs to be overcome using quality signals. Interestingly my study shows that less costly signals of quality can be used by innovators to mitigate the information gap for distant backers the same way that traditional quality signals work. It is of huge value for a new entrepreneur/innovator who does not have a history on for example Kickstarter to know that she can use the textual description of her page to signal other aspects that are valuable to customers and thus make up for the lack of other very costly quality signals. It is of clear value to new entrepreneurs to know that the wording of their narrative can act as a signal of quality and reduce the geographically created information gap. As shown in my results positive PsyCap as a less costly quality signal can be as effective as having a history of previously successful campaigns. Entrepreneurs can benefit from this finding and put more time, effort and focus on their narrative to influence backers from more distant locations.

8.2. Limitations & future research

Although my study is comprehensive with regards to product categories (I covered all 15 categories listed by Kickstarter), it is limited to the reward-based type of crowdfunding. I expect the strength of associations identified in this research to be even higher in settings, such as equity-based (Ahlers et al., 2015) or real-estate crowdfunding (Vogel & Moll, 2014) where financial stakes are higher. With equity or royalty crowdfunding, backers have pecuniary expectations from their investment and the information asymmetry issue is much higher than

reward-based crowdfunding because the goal is not just to make a product but to create a profit generating company (Agrawal et al., 2014). Investors in such equity-based settings will probably analyze the crowdfunding campaign description more thoroughly compared to other contexts, such as charity-based or reward-based online fundraising and their behavior may be more sophisticated. I expect the interaction of geography to be more salient in those pecuniary based crowdfunding systems because the stakes are much higher.

With the advances in communications technology asking for investment and contribution from people who are far from the innovators has become very viable and simple but building trust is an important challenge to be addressed and investigated by researchers. My empirical findings can direct future studies to test the decision-making process of individuals with regards to investment opportunities in nearby versus distant locations. Experimental studies that benefit from high internal validity can test the exact mechanism behind the behavior of individuals with regards to the value of signals that they receive from geographically distant or close investment offerings.

Chapter 9

Study 2

The Effects of Quality Signals and Project Narrative on

Crowdfunding Success

9.1 Introduction

Crowdfunding as a nascent model (Lambrecht et al., 2014) has become a popular

way to collect funds and access the potential market for new products (Dai &

Zhang, 2019). Many successful projects, ranging from arts to technology, have

benefited from this form of funding. Reward-based crowdfunding provides a

fairly risk-free means for entrepreneurs and startups to not only collect funds, but

to also generate awareness and test the potential market for new products (Stanko

& Henard, 2017). Film projects such as Oscar award winners Inocente (Blagdon,

2013; Walker, 2013) and Period End of Sentence (Magistretti, 2019), along with

technological projects such as Pebble and Oculus Rift (Chan & Parhankangas,

2017), have successfully collected funding through Kickstarter, the popular

reward-based crowdfunding platform. Success stories such as these, along with

the high rate of growth in this field, requires further investigation into the factors

that impact the success of crowdfunding campaigns.

One important element of all such campaigns is the inherent risk of

investment. Project creators need to build trust and communicate the quality and

worth of their projects. The textual project description is the main communication

method between creators and backers. Kickstarter's handbook suggests that

owners use their campaign page to tell their story, plans and schedule, the required

budget, and why they are passionate about their project[2]. Projects may also use a

video pitch (Mollick, 2014), but not all have the finances or instruments to create

one.

Marketing literature inquires for utilization of unstructured data using

methods such as text analysis in studying marketing phenomena (Balducci &

Marinova, 2018). Text analysis is extremely applicable and relevant to a wide

range of research inquiries in marketing (Chapman, 2020). Text can help a

researcher better understand multiple aspects of its author, who may be an

individual or an organization, as it signals information about them (Berger et al.,

2020). Text analysis can also be used by marketing strategy scholars to examine

both communications between consumers, and corporate to consumer

relationships (Berger et al., 2020). In this study, I investigate the importance of

textual descriptions to the success of crowdfunding campaigns, along with the

moderating role of endorsements, preparedness, and experience (human capital)

on that relationship. I show the positive and negative association between risk

rhetoric, reward rhetoric and crowdfunding success, respectively. I also provide

evidence of the positive and negative impact of punctuation and informal

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[2] From "Creator Handbook" on the Kickstarter website, accessed on May 3, 2019. From:
https://www.kickstarter.com/help/handbook/your_story?ref=handbook_index

language, representing preparedness or unpreparedness (quality) signals. I then show that preparedness, endorsement and human capital (past experience) signals moderate the association between risk/reward rhetoric, and the likelihood of a campaign's success. It is important to mention that I am using a quantitative approach to text analysis to generate numerical variables from text for the purpose of using the numerical variables in statistical tests (Tang & Guo, 2013). Text analysis can be run on user generated and firm generated data (Balducci & Marinova, 2018), and since the unit of analysis in this study is campaign level, the focus of text analysis in this study is not on user (backer) generated data but is on entrepreneur generated data. All text analysis in this paper is computer assisted text analysis based on pre-existing dictionaries (Balducci & Marinova, 2018) using Linguistic Inquiry and Word Count (LIWC) software (Pennebaker et al., 2015). LIWC was used for text analysis in this study because it has very robust built-in dictionaries that measure informality, punctuation, and risk/reward orientation of the text. LIWC has been successfully tested and used in other studies in marketing and crowdfunding (Lin & Viswanathan, 2015; Moss et al., 2015; Netzer et al., 2019; Yazdani, Gopinath, & Carson, 2018; Younkin & Kuppuswamy, 2018) which adds to the validity of its measurements. Table 13 summarizes the relevant findings of previous studies and the contributions of the current study.

Table 13- Study 2. Past relevant studies

Empirical Study	Study Focus	Context	Traditional Signals	Less Costly Signals	Narrative Quality	Relevant Finding
(Pollack, Rutherford, & Nagy, 2012)	What elements in an entrepreneur affect their chances for access to funds?	TV pitch (Dragons Den)	Yes	No	Yes	Preparedness is positively associated with cognitive legitimacy and cognitive legitimacy is positively associated with the amount of funds collected.
(Moss et al., 2015)	The effect of rhetorical signals of quality on success of P2P lending requests.	P2P Lending	No	Yes	No	Entrepreneurial orientation as a rhetorical signal of quality increases chance of microlending success.
(Allison et al., 2017)	How do peripheral cues such as personal dream, group identification, and positive tone affect success?	Reward-based crowdfunding	Yes	No	No	The effect of peripheral cues such as personal dream, group identification increases in lower elaboration likelihood conditions.
(Courtney et al., 2017)	Importance of quality signals, and their interaction with backer endorsements on success of crowdfunding campaigns.	Reward-based crowdfunding	Yes	No	No	Third party endorsement (backer comments) validates the signals that are provided by the campaign owners an increase their chances of success.
(Parhankangas & Renko, 2017)	How linguistic style affects crowdfunding performance?	Reward-based crowdfunding	Yes	No	No	The importance of linguistic style depends on category membership. It is more effective for social entrepreneurs (emerging category) than for established categories.
(Anglin, Short, et al., 2018)	The effect of costless signals of quality on crowdfunding success	Reward-based crowdfunding	Yes	Yes	No	Positive psychological capital as a costless signal of quality increases the likelihood of crowdfunding success.
(Steigenberger & Wilhelm, 2018)	How do substantial and rhetorical signal interact?	Reward-based crowdfunding	Yes	Yes	No	The effect of rhetorical signals increases in signal portfolios that include substantial signals.
This study	Is Internet removing geographic barriers for crowdfunding? How does the effect of costly and less costly signals change with spatial distance?	Reward-based crowdfunding	Yes	Yes	Yes	The quality of narrative is considered as a less costly signal of quality. Similar to traditional costly signals, it interacts with narrative meaning and reduces the negative effect of risk rhetoric and increases the positive effect of reward rhetoric.

From a theoretical point of view, my study adds to the understanding of the interesting interaction between signals of quality (both costly and less costly), and how textual description influences customers to secure financial support, and a demand market for innovative projects. I show how the use of punctuation, and the formality or informality of language can affect a campaign's likelihood of success, regardless of the direction and meaning of the text. I also show how the quality of the text can mitigate the negative effect of risk rhetoric. Significantly, this effect (i.e. text meaning) is attenuated in the presence of a well-punctuated and less informal description (i.e. text quality). I also show that the same moderating effect is true for costly signals, namely endorsement and human capital. I argue that the risk rhetoric from an experienced, high-quality and more prepared creator will be less damaging to success than the same rhetoric from a less-prepared, low-experienced and low-quality campaign owner. At the same time, the reward rhetoric will be more effective if it comes from a high-quality rather than a low-quality campaign owner.

From the practical point of view, my study creates clear and informative conclusions that can be adapted to optimize many textual documents generated by entrepreneurs and even some textual documents generated by firms. It specifically can help innovators sway more prosumers to invest in their novel ideas. Textual description as a verbal, written unstructured data (UD) is a multifaceted source of information, which can be scrutinized to attain original and innovative conceptual and practical insights beyond what can be gleaned from structured data (Balducci

& Marinova, 2018). In this study I use textual analysis to measure variables that capture multiple aspects of a project. I then demonstrate how text quality, along with its meaning, can be associated with the success or failure of a crowdfunding campaign. In addition, I show how quality signals, including preparedness, endorsement, and human capital, can mitigate the risk conveyed through a project narrative. The remainder of this study is organized as follows: I first provide a theoretical background on the importance of signals and propose my hypotheses and conceptual framework. Next, I explain my data and measurements, followed by a presentation of my analysis and robustness tests. I finish with a discussion on my findings and the limitations of my research.

Chapter 10

Study 2. Theoretical Background & Hypotheses Development

10.1. Signaling Theory

Signaling theory has contributed significantly to explaining transactions in crowdfunding context (Courtney et al., 2017). Unlike the arm-in-arm nature of transactions between Venture Capitals (VCs) and their investees, the relationship between contributors and innovators in crowdfunding settings is mostly at arm's length. Contributors provide their financial support, and in return receive nothing but the promise of an early version of the crowdfunded new product (or any other kind of reward or perk). A high level of trust between the backers and the campaign owners is required for this transaction to happen. Quality signals are

effective ways of reducing information asymmetry between two sides of a

transaction (Kirmani & Rao, 2000), and thus could be a good solution for

innovators to create trust and confidence in their audience.

Text is an important source of insight in marketing research as it can

reflect the qualities of its producer (Berger et al., 2020). In the following sections

I explain how the meaning of a narrative can affect its outcomes. I also discuss

quality signals that can be used by innovators with the aim of attracting potential

backers to contribute funds to crowdfunding campaigns.

10.2. Risk rhetoric and reward rhetoric

Mitigating risk is one of the main considerations for VCs, angel and

crowdfunding investors when supporting entrepreneurial endeavours (Drover,

Busenitz, Matusik, Anglin, & Dushnitsky, 2017). A project with a high level of

focus on risk in the textual description will communicate the same meaning to

backers. It will be less likely to receive support from investors and contributors,

who would view it as high-risk project with an unclear future. Backers are more

likely to favour and contribute to crowdfunding projects that are perceived to be

less risky and more attainable (Chan & Parhankangas, 2017). The use of risk

rhetoric has also been shown to be negatively associated with customer

engagement on Twitter, as it may indicate a company's lack of competence and

capability (Leek, Houghton, & Canning, 2017).

Putting all the evidence together, it makes sense to assume that when a project creator's description is more risk-focused, the same meaning is primed in the minds of the audience, and thus disadvantages it against its competitors. On the other hand, when a project is more focused on rewards, its audience is primed positively, and the chance of success is increased. Accordingly, I propose that a project's use of risk and reward rhetoric will negatively and positively affect its success respectively:

H1a: Risk rhetoric is negatively associated with the likelihood of success for a crowdfunding campaign.

H1b: Reward rhetoric is positively associated with the likelihood of success for a crowdfunding campaign.

10.3. Preparedness and unpreparedness of narrative

Investors regard an entrepreneur's preparedness an important aspect when they consider making a decision to support a project or an idea (X. Chen et al., 2009; Courtney et al., 2017).

Content preparedness is an important element of success in crowdfunding. Textual description acts as a business plan that the campaign owner provides to backers, and the quality of the plan displays the cognitive preparedness of its author (X. Chen et al., 2009). Textual description in crowdfunding is the business plan that the campaign owner provides to the backers and the quality of a business plan displays the cognitive preparedness of the entrepreneur who wrote it (X. Chen et

al., 2009). Quality of a business plan shows whether the campaign owner is sufficiently prepared to accomplish the job if they receive the required financial support (X. Chen et al., 2009). Accordingly, the quality of textual description in crowdfunding acts much like a business plan used by those seeking conventional funding; it demonstrates the project's potential for success. Previous crowdfunding studies have considered factors related to the quality of textual description as measures of preparedness. For example, spelling errors are assumed to be negatively associated with preparedness and quality, and thus reduce the likelihood of a successful crowdfunding campaign (Courtney et al., 2017; Mollick, 2014).

Campaign narratives are influential means of conveying quality, preparedness, credibility, professionalism, and legitimacy (Macht & Weatherston, 2015). The presentation content preparedness is an important element of success in crowdfunding. Preparedness is the degree to which project owners devote time and effort to ensure that their campaign is in line with standards of successful campaigns (Mollick, 2014).

In the context of a funding pitch, preparedness is often a well-delivered script, with appropriate and interesting content that can increase the propensity for resource acquisition (Pollack et al., 2012). An entrepreneur's preparedness behavior can increase perceived legitimacy, and thus increase the chance of success for new ventures (Pollack et al., 2012) including crowdfunding

campaigns. In their pitches, entrepreneurs have to demonstrate they are reliable

and credible in delivering their proposed distinctive product (Pollack et al., 2012).

As an example, a study of televised pitches ("Dragon's Den") showed the

importance of narrative preparedness for success in acquiring funds (Pollack et

al., 2012). The more time and effort investors require to understand the pitch, the

less likely they see it as legitimate, and worthy of investment (Pollack et al.,

2012). I argue that the same association between preparedness and performance is

true for the success of crowdfunding campaigns. Preparedness and perceived

effort are important in affecting how backers make decisions (Chan &

Parhankangas, 2017). In addition, I propose that preparedness and other quality

signals (endorsement and human capital) moderate the association between the

risk or reward focus of the text, and crowdfunding success.

The use of punctuation and formality of language are important features

of a textual description that can reflect the professionalism of the writer (Yazdani

et al., 2018). Preparedness is an important signal of quality in crowdfunding

(Mollick, 2014). Using informal language can signal a lack of such important

qualities and may negatively affect the fluency of the text (Ransbotham, Lurie, &

Liu, 2019). Low-ranked product reviewers have been found to use less

punctuation and more informal language, compared to top-ranked product

reviewers (Yazdani et al., 2018). The use of punctuation signals the

professionalism and preparedness of a product or campaign description. A more

formal and punctuated text signals that time and effort was devoted to generating

the description, while low punctuation and high informal language signal an

inconsiderately- and perfunctorily-created campaign. I expect preparedness to be

positively associated with success, and at the same time I expect unpreparedness

to be negatively associated with success.

H2a: Preparedness (the use of punctuation) is positively associated with

the likelihood of success of a crowdfunding campaign.

H2b: Unpreparedness (the use of informal language) is negatively

associated with the likelihood of success of a crowdfunding campaign.

10.4. Endorsement & risk/reward rhetoric

Quality signals to backers are effective tools to mitigate the perception of

investment risk that reduce uncertainty about a project, and help entrepreneurs in

their pursuit of external capital (Plummer, Allison, & Connelly, 2016).

Endorsements from experts have been studied as an important signal of quality for

fund-seeking ventures, and can reflect the quality of a project (Courtney et al.,

2017; Kang, Jiang, & Tan, 2017). They add more credibility to creators' promises

and thus should increase the impact of reward rhetoric. Believable endorsements

help backers feel they are able to make informed judgments about a venture, and

can effectively enhance fundraising activity (Plummer et al., 2016). Third party

endorsement has been considered a signal of quality in crowdfunding that can

even enhance the effect of other signals (Short, Ketchen, McKenny, Allison, &

Ireland, 2017). They also act as an effective way of reducing bias among

crowdfunding supporters (Younkin & Kuppuswamy, 2018).

Reward promises from a campaign with a third-party endorsement thus appear more credible to backers than promises from the same campaign without such endorsements (or those from low-quality creators). A high-quality creator is better equipped to surpass challenges and risks, and eventually deliver what is promised. These creators are enhanced with capabilities that help them overcome risks and challenges. However, low-quality creators lack such capabilities, and are more prone to fail in risky situations. Risk rhetoric is more detrimental when it comes from a low-quality creator. Rewards from low-quality campaigns can be considered as puffery, while the same rewards from a high-quality campaign are seen as believable and attainable promises.

Accordingly, I expect endorsement as a quality signal to moderate the association between risk/reward rhetoric and crowdfunding success:

H3a: Expert endorsement moderates the relationship between risk rhetoric and the likelihood of success of crowdfunding campaigns, in a way that endorsement attenuates the negative association between risk rhetoric, and the likelihood of success of crowdfunding campaigns.

H3b: Expert endorsement moderates the relationship between reward rhetoric and the likelihood of success of crowdfunding campaigns, in a way that endorsement enhances the positive association between reward rhetoric and the likelihood of success of crowdfunding campaigns.

10.5. Human Capital & risk/reward rhetoric

Past entrepreneurial and start-up experience is an important type of human capital (Davidsson & Honig, 2003). Human capital (i.e. past successful experience) is a key signal of quality in crowdfunding (Courtney et al., 2017). A creator with a history of successful campaigns will be seen as a more credible innovator by backers than a creator who lacks such experience. Past studies have emphasized the need for incorporating and investigating the effect of founder experience on shaping backer perceptions (Chan & Parhankangas, 2017). Entrepreneurs with past start-up experience are more successful at collecting funds, and are able to be more selective in keeping ownership of their company (Kotha & George, 2012). The same mechanism is true in crowdfunding; past experience with crowdfunding plays a powerful role in the success of future campaigns (Short et al., 2017; Skirnevskiy, Bendig, & Brettel, 2017). A track record of previously-created campaigns increases the likelihood of crowdfunding success (Skirnevskiy et al., 2017). Most platforms such as Kickstarter clearly display a user's history of previous campaigns. Since this information is visible, it can be evaluated by backers to determine uncertainty about a creator's credibility.

Therefore, I argue that like other signals of quality, past success functions as a measure of human capital, and can strengthen the credibility of promises made by campaign owners. At the same time, the negative effect of risk rhetoric can be disparaged by the influence of credible signals. Backers can determine that

the experienced owner has completed previous projects, and overcome potential obstacles. Thus, I posit that:

H4a: Human capital (past successful experience) signal moderates the relationship between risk rhetoric and the likelihood of success of crowdfunding campaigns, in a way that human capital signal attenuates the negative association between risk rhetoric and the likelihood of success of crowdfunding campaigns.

H4b: Human capital (past successful experience) signal moderates the relationship between reward rhetoric and the likelihood of success of crowdfunding campaigns, in a way that human capital signal enhances the positive association between reward rhetoric and the likelihood of success of crowdfunding campaigns.

10.6. Preparedness & risk/reward rhetoric

As discussed earlier, the preparedness of a description can be an important signal to backers that reflects time, effort, and professionalism behind a campaign. Based on this argument, and similar to the moderating effect of endorsement and human capital, I expect to see the same moderating effect for preparedness on risk and reward rhetoric. Preparedness can therefore be expected to reduce the negative effect of risk, because it shows the commitment, effort, and professionalism of the campaign's creator. Promises of rewards will be more trustworthy from more prepared campaigns, compared to reward promises from those less prepared.

H5a(i): Preparedness signal moderates the relationship between risk rhetoric and crowdfunding performance, in a way that the preparedness signal attenuates the negative association between risk rhetoric and performance.

H5b(i): Preparedness signal moderates the relationship between reward rhetoric and crowdfunding performance, in a way that preparedness signal enhances the positive association between reward rhetoric and performance.

H5a(ii): Unpreparedness signal moderates the relationship between risk rhetoric and crowdfunding performance, in a way that the unpreparedness signals amplify the negative association between risk rhetoric and performance.

H5b(ii): Unpreparedness signal moderates the relationship between reward rhetoric and crowdfunding performance, in a way that unpreparedness signal attenuates the positive association between reward rhetoric and performance.

Figure 14 shows the conceptual framework suggested by the proposed hypotheses.
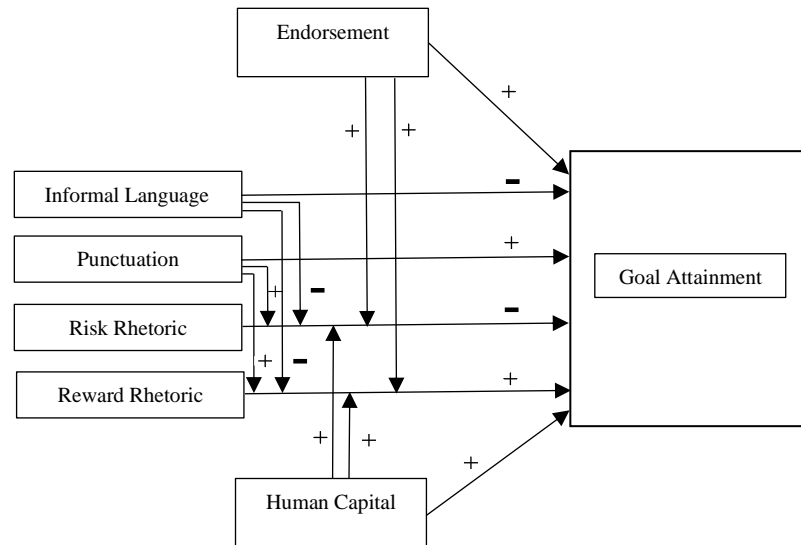
Figure 14. Study 2. Conceptual Framework

Chapter 11

Study 2. Methodology

11.1. Sampling frame

For the purpose of this study, R software and a proprietary software for web-scraping were used to collect data from Kickstarter, one of the biggest and most popular crowdfunding websites that has more than 16 million users (Kickstarter Stats, 2019). My data consist of the universe of projects that started between 2009-04-21 and 2018-07-16. The projects are from all categories on the platform. In keeping with previous studies, I disregarded projects with goals below $5,000 and above $1,000,000 (Mollick, 2014). I also disregarded those that were still live at the time of data collection as they had not completed their funding duration. I also disregarded projects that collected 10 times or more of their funding goals, as these either had huge publicity outside of Kickstarter, or set superficially low goals at the time of initiation. After applying these restrictions, 187,769 projects remained that met the above criteria for my analysis. Table 14 summarizes the restrictions that are considered for sample selection.

Table 14. Study 2. Restrictions applied to observations

Applied Restriction	Observations	Change	Change Percentage
Total	378,742	-	-
Above $5000	190,858	187,884	49.61%
Below $1000,000	189,538	1,320	0.69%
Below 1000% of the goal	188,082	1,456	0.77%
Missing related variables	188,012	70	0.04%
Extreme Punctuations[3]	187,769	243	0.13%

Kickstarter uses an All-Or-Nothing (AON) mechanism, which means that projects within their funding duration either reach or exceed their goal and receive all pledged money. If they fail to achieve their goal, they receive nothing, and the funds are returned to contributors. Each Kickstarter project receives a unique webpage and can have a textual description to explain the proposed product and related risks or challenges (Strickler, Chen, and Adler, 2012). I analyzed the textual description of the projects to measure multiple aspects of the campaign narrative, including risk/reward rhetoric, the use of informal language and punctuation.

11.2. Measurements

Dependent variable: A dichotomous variable coded as one for campaigns that have achieved or surpassed their goal, and zero for campaigns that have not. This

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[3] Although this restriction has no effect on the results and findings, I manually checked webpages that had extensive use of punctuation (more than one punctuation per word) and eliminated them from analysis. Further robustness checks are provided in the analysis section.

is the most common measure of success in AON crowdfunding (Anglin, Short, Ketchen, Allison, & McKenny, 2019; Calic & Mosakowski, 2016).

Independent Variables: In my model I included the following independent variables. Variables were measured either through textual unstructured data or structured data. The measurement of each variable is explained below in detail.

Unpreparedness (Informal Language): I measured this variable using LIWC internal dictionary for informal language. This variable has been used in previous studies of marketing literature (Yazdani et al., 2018). It measures the degree to which informal language is used in a text (Yazdani et al., 2018) that may affect its fluency (Ransbotham et al., 2019).

Preparedness (Punctuation): Similarly to unpreparedness, this variable has been used in previous marketing studies (Yazdani et al., 2018). I followed the approach of previous research and used the LIWC internal dictionary to capture the use of punctuation as one of the structural composition elements (Pennebaker et al., 2015). Punctuation accompanying spelling and grammar is a part of writing skills (Biber, 1988).

Risk Rhetoric: Using the LIWC internal dictionary, I captured language that focused on risk (Pennebaker et al., 2015). This same method has been used effectively in previous studies (Leek et al., 2017).

Reward Rhetoric: Using an LIWC internal dictionary I captured the words in each description that had a reward focus (Pennebaker et al., 2015).

Endorsement: This dichotomous variable shows whether or not the projects were publicly suggested by the Kickstarter platform staff in the form of a "staff pick" badge (Skirnevskiy et al., 2017). This variable is based on the opinions of experts in the crowdfunding field and is considered as an endorsement (Younkin & Kuppuswamy, 2018). It is a very common feature that affects crowdfunding performance (Anglin, Short, et al., 2018; Anglin, Wolfe, et al., 2018).

Human Capital (Past Success): For this metric, I used the total amount of previously collected funds by the same creator on Kickstarter from all her successful campaigns. This demonstrates the experience of the campaign owner and can be an effective signal of capability (Courtney et al., 2017).

Control Variables: Following precedents set in previous studies, I controlled for multiple covariates, including the project size (its goal in USD), the type of project, its duration, the total number of words in the project's description, and whether or not it had a video pitch.

Table 15. Study 2. Variables and Measurements

Variable	Definition	Past studies	Journal
Success	Dichotomous. It is coded as 1 if campaign reached its goal and zero if not	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
Informal Language	Degree to which informal language is used	(Ransbotham et al., 2019; Yazdani et al., 2018)	*Marketing Science*
Punctuation	Degree to which punctuation is used	(Yazdani et al., 2018)	*Marketing Science*
Risk/Reward Rhetoric	Degree to which words related to risk/reward are used	(Leek et al., 2017)	*Industrial Marketing Management*
Endorsement	Receiving the staff pick badge from Kickstarter	(Younkin & Kuppuswamy, 2018)	*Management Science*
Past Success	Amount of successfully collected funds in past	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
Goal USD	Goal of the project in USD	(Courtney et al., 2017)	*Entrepreneurship Theory & Practice*
Main Category	Category that the project was listed in	(Anglin, Short, et al., 2018)	*Journal of Business Venturing*
Duration	Total number of days/hours that project was live	(Colombo et al., 2014)	*Entrepreneurship Theory & Practice*
Word Count	Total number of words in the project description	(Anglin, Wolfe, et al., 2018)	*Journal of Business Venturing*
Video	Whether or not it has a video pitch	(Josefy et al., 2017)	*Entrepreneurship Theory & Practice*
Language Skills	TOEFL score of the creator's country	(Ku & Zussman, 2010)	*Journal of Economic Behavior and Organization*

Chapter 12

Study 2. Analysis and Results

Since the dependent variable is dichotomous, I used logistic regression to test my

hypotheses. Descriptive statistics are provided in Table 16. As shown, I had

187,769 projects in my final analysis. The correlations matrix is shown in Table

17. All correlations are below 0.7 with maximum correlation being 0.48,

suggesting that collinearity is not a concern. All continuous variables are log

transformed to correct for skewness (Anglin, Short, et al., 2018) and all

continuous variables included in the interactions are mean centered to reduce

multicollinearity (Iacobucci et al., 2016).

As an additional test for multicollinearity, I used the generalized variance

inflation factor (Fox, 2015; Fox & Monette, 1992), which is developed for

generalized linear models (GLM), and the estimates of GVIF^1/2df are all below

3 in all models (maximum GVIF^1/2df is 1.331064), suggesting that

multicollinearity is not an issue in my analysis.

Table 16. Study 2. Descriptive statistics

Descriptive Statistics					
Statistic	N	Mean	St. Dev.	Min	Max
Success	187,769	0.3	0.4	0	1
Endorsement	187,769	0.1	0.3	0	1
Video	187,769	0.6	0.5	0	1
Duration	187,769	35.7	12.0	1.0	98.0
Goal USD (in $1000)	187,769	36.3	70.6	5.0	1,000.0
Human Capital (in $1000)	187,769	9.1	166.3	0	38,231
Word Count	187,769	911.5	745.5	7	33,787
TOEFL	187,610	90.2	3.3	59.0	101.0
Risk Rhetoric	187,769	0.6	0.8	0.0	30.3
Reward Rhetoric	187,769	1.8	0.9	0	18
Informal Language	187,769	0.5	0.6	0.0	41.7
Punctuation	187,769	17.1	6.5	1.1	99.8

Table 17. Study 2. Correlations matrix

	1	2	3	4	5	6	7	8	9	10	11
Correlations Matrix											
1. Success											
2. Endorsement	0.37***										
3. Video	0.48***	0.21***									
4. Duration	-0.10***	-0.06***	-0.05***								
5. Goal (USD)	-0.14***	-0.01***	-0.03***	0.08***							
6. Human capital	0.07***	0.05***	0.03***	-0.03***	0.02***						
7. Word count	0.26***	0.21***	0.21***	-0.02***	0.06***	0.06***					
8. Language skills	-0.04***	0.00	-0.04***	-0.04***	0.02***	-0.01***	0.00				
9. Risk rhetoric	-0.17***	-0.11***	-0.14***	-0.01***	0.05***	-0.01***	-0.27***	0.04***			
10. Reward rhetoric	0.09***	0.02***	0.01*	0.03***	-0.06***	0.02***	0.03***	-0.07***	-0.14***		
11. Unpreparedness	-0.04***	-0.02***	-0.03***	0.01***	0.01*	-0.01*	-0.01**	0.05***	0.02***	-0.05***	
12. Preparedness	0.12***	0.06***	0.03***	0.02***	-0.03***	0.00	0.03***	-0.07***	0.20***	0.04***	0.14***

12.1. Method – Logistic Regression

The results of my logistic regression are shown in Table 18. In the first

model, I tested the hypotheses using regular logistic regression. I inserted all

variables except for narrative related measures. In the second model I inserted the

variables measured from the textual description of the projects. As predicted in

H1a, risk rhetoric is negatively associated with crowdfunding success (β = -0.568,

p<0.01). Results also support **H1b** regarding the positive association between

reward rhetoric and likelihood of success for crowdfunding campaigns (β = 0.588,

p<0.01).

The main effects of these two variables are shown in Figures 15 and 16. Figure 15

depicts the association between risk rhetoric and the likelihood of a crowdfunding

campaign's success. It shows that as the use of risk rhetoric increases, the chance

of success decreases (**H1a**). Figure 16 shows the positive association between

reward rhetoric and the likelihood of crowdfunding success. It shows that reward

rhetoric increases the chance of success (**H1b**).
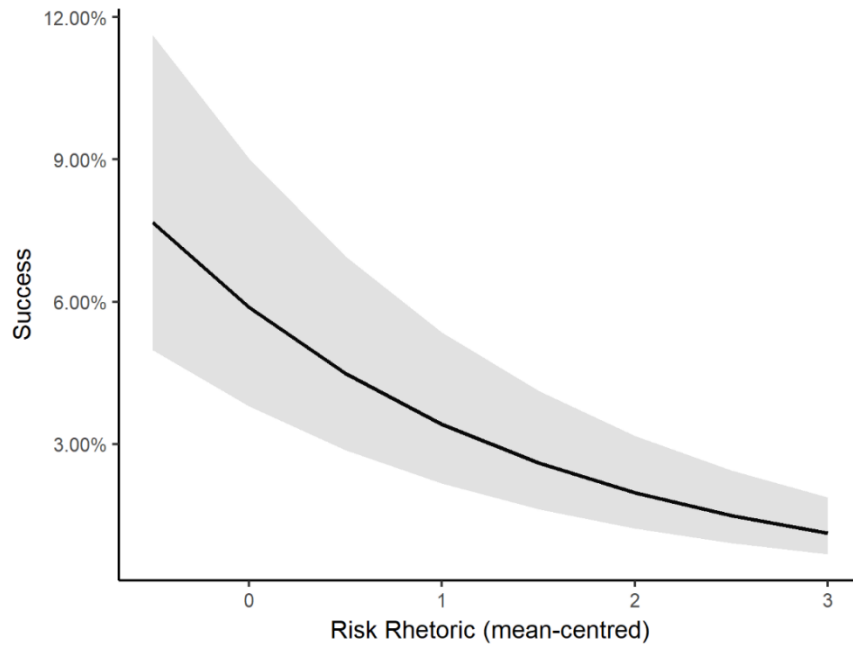
Figure 15. Study 2. The main effect of risk rhetoric
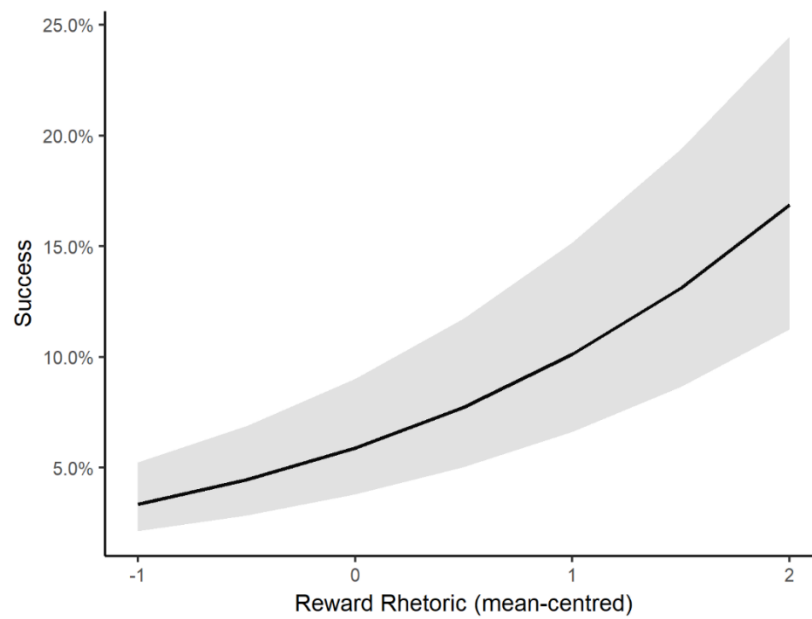
Figure 16. Study 2. The main effect of reward rhetoric

With regards to preparedness and unpreparedness signals, **H2a** is supported as preparedness (i.e. use of punctuation) is positively related to likelihood of success ($\beta = 1.088$, $p<0.01$). At the same time the reverse measure of preparedness (i.e. use of informal language), which I named unpreparedness, is negatively related the likelihood of success of crowdfunding campaigns ($\beta = -0.558$, $p<0.01$), supporting **H2b**.

As shown in Figure 17, the chances of success increase with the use of punctuation in a campaign's description. As illustrated in Figure 18, the use of informal language reduces the likelihood of success of crowdfunding campaigns.
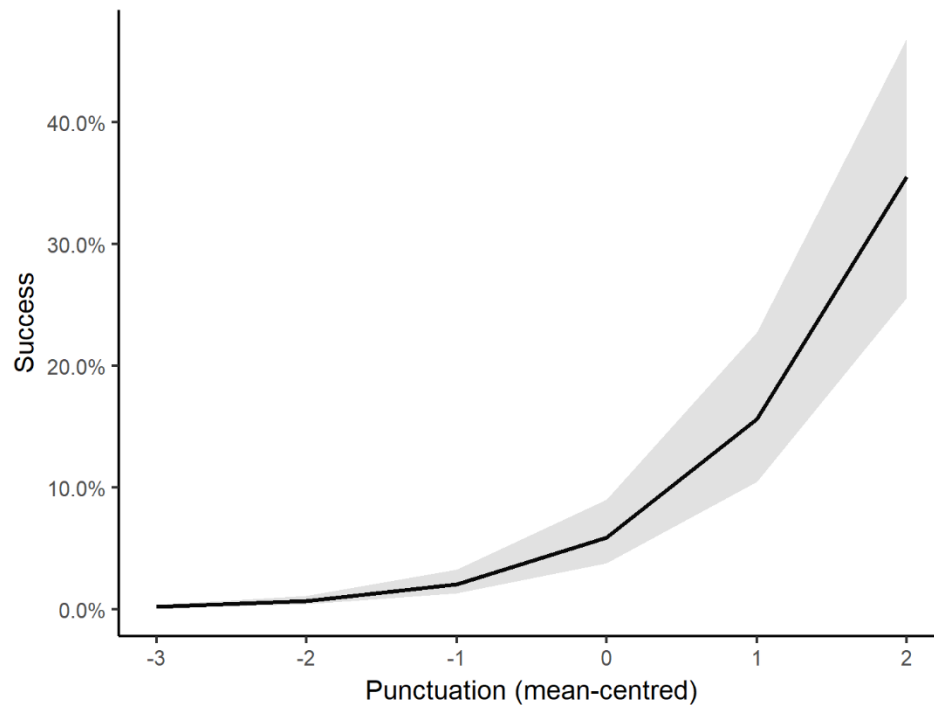
Figure 17. Study 2. The main effect of punctuation
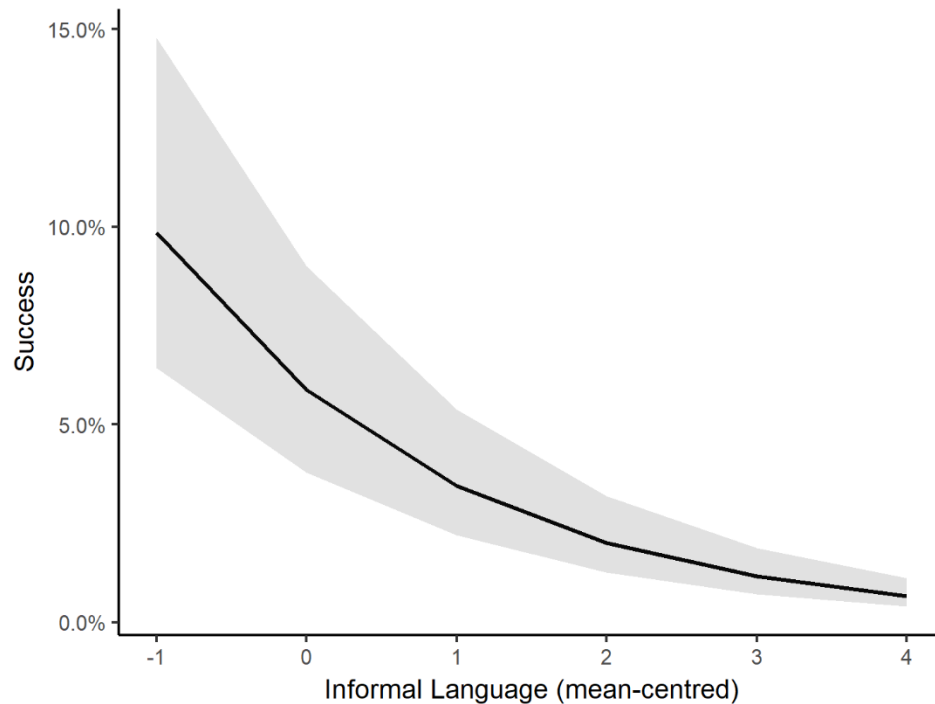
Figure 18. Study 2. The main effect of informal language

As shown in models 3-10, I then tested the interaction effects one by one. In model 11, I tested all interaction effects together in one model. In model 3 the interaction between endorsement and risk rhetoric is positive and statistically significant (endorsement × risk rhetoric, β = 0.354, p<0.01). This finding supports **H3a** and shows that endorsement as a signal of quality mitigates the negative effect of risk rhetoric that is conveyed in project narratives. In model 4, I tested the moderating role of endorsement on the association between reward rhetoric and the likelihood of success. **H3b** predicted a positive interaction between reward rhetoric and endorsement, however my results did not find any statistical

significance, and the coefficient is negative (endorsement × reward rhetoric, β = -0.088, p>.1). Thus, my results fail to support **H3b**. These results are shown in Figures 19 and 20.
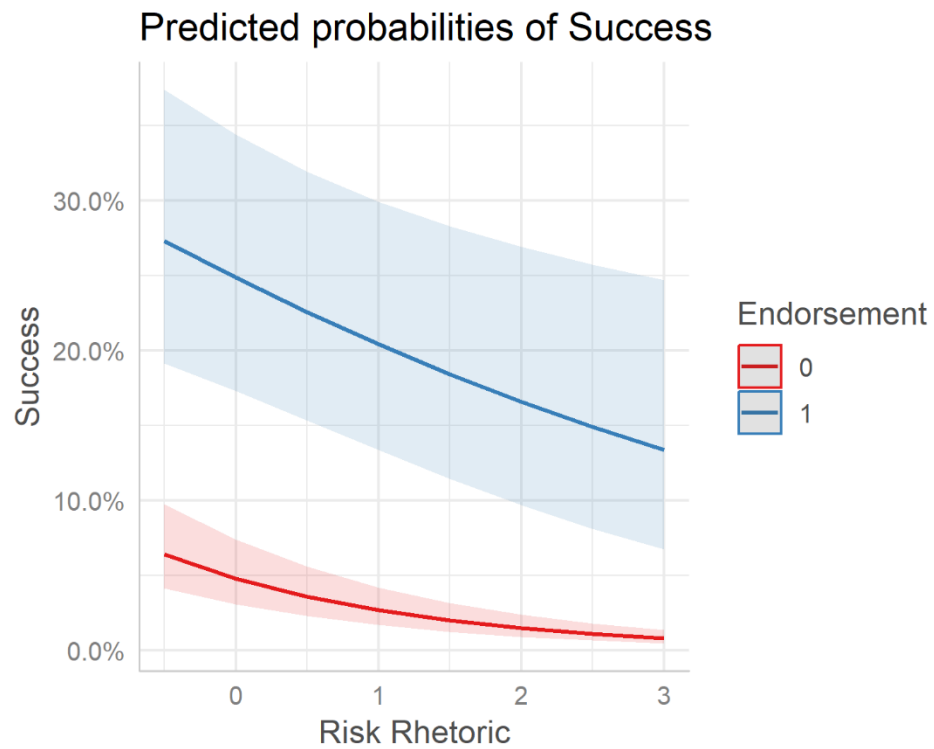
Figure 19. Study 2. Endorsement × risk
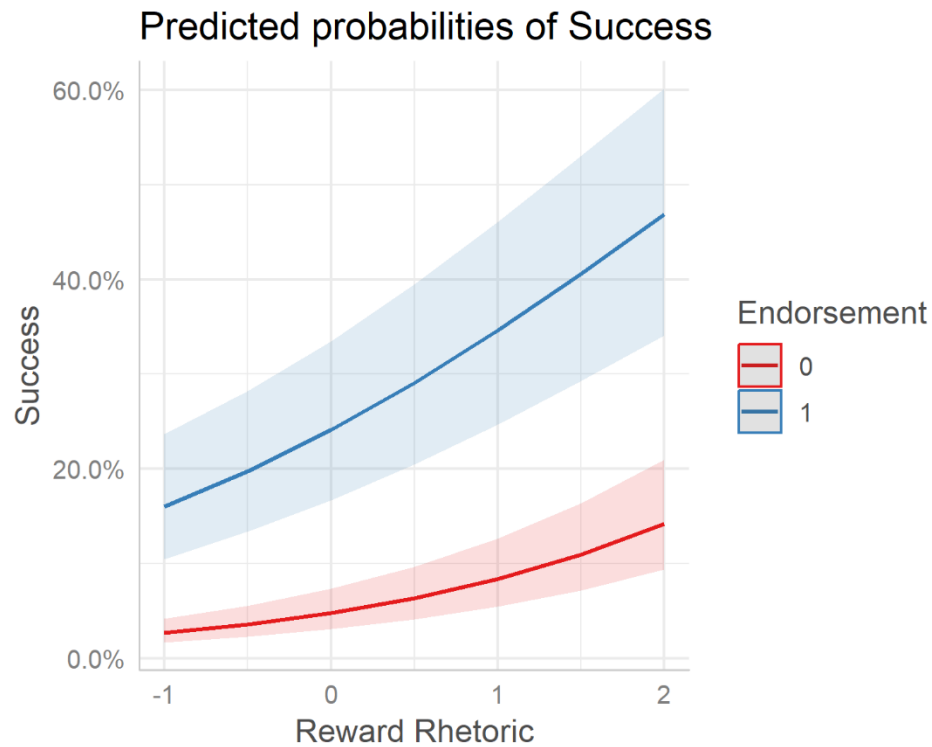
Figure 20. Study 2. Endorsement × reward

Models 5 and 6 test the interaction of human capital signal, and risk and reward rhetoric respectively. As predicted by **H4a**, signal of human capital mitigates the negative effect of risk rhetoric (human capital × risk rhetoric, $\beta = 0.091$, $p<0.05$) and enhances the positive effect of reward rhetoric (human capital × reward rhetoric, $\beta = 0.050$, $p<0.1$). Both **H4a** and **H4b** are supported by my results. These interactions are illustrated in Figures 21 and 22, respectively.
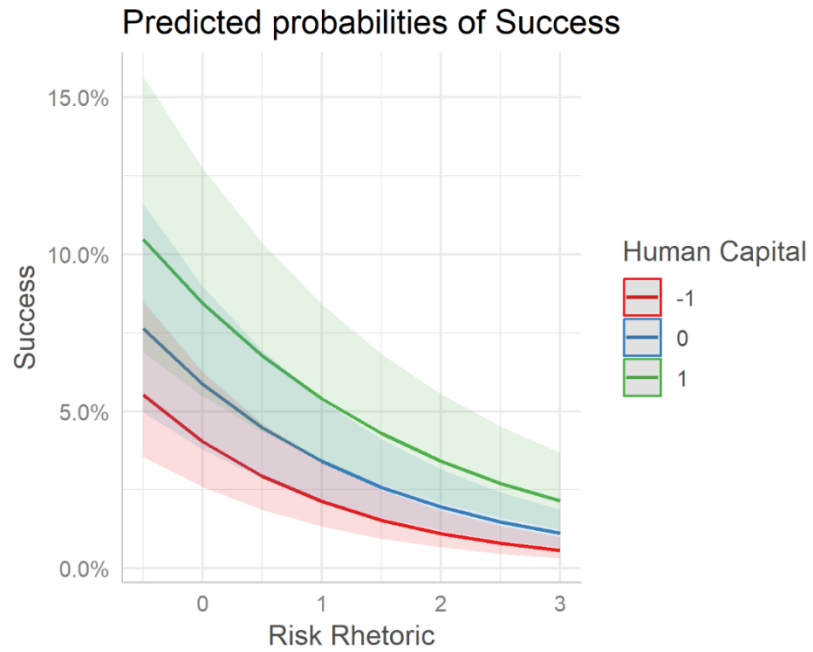
Figure 21. Study 2. Human Capital × risk
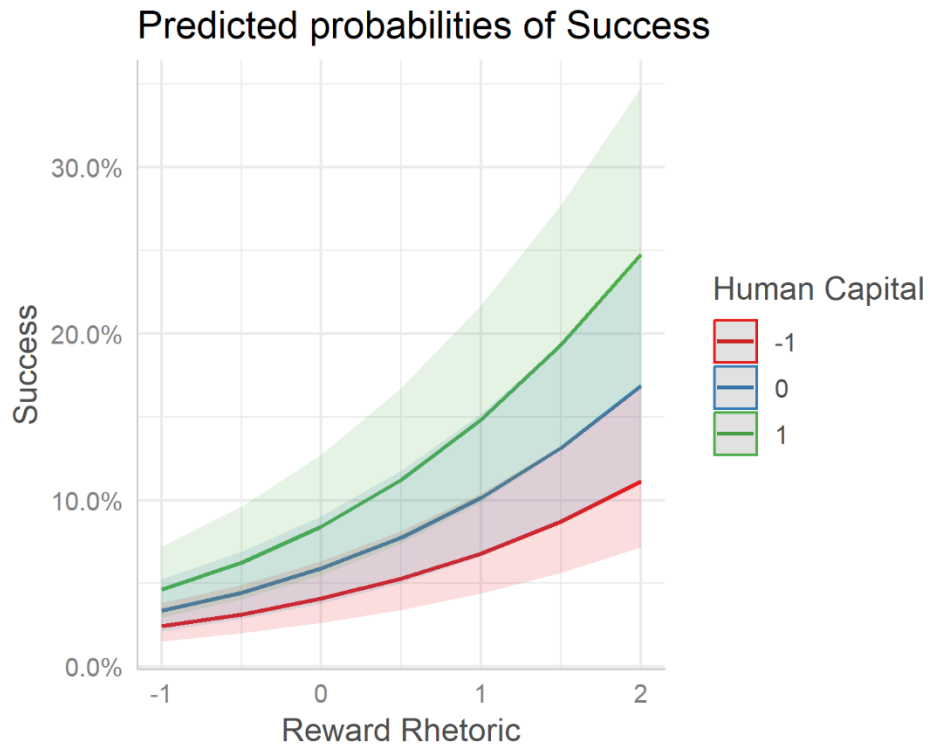
Figure 22. Study 2. Human Capital × reward

Models 7 and 8 test the effect of preparedness on the meaning of the

narrative. The results show that **H5a(i)** and **H5b(i)** hold true, and that the quality

(preparedness measured by punctuation level) of the text mitigates the risk

rhetoric and enhances the positive association of reward rhetoric on the likelihood

of success (punctuation × risk rhetoric, $\beta = 0.623$, $p<0.01$, & punctuation × reward

rhetoric, $\beta = 0.571$, $p<0.01$). This interesting finding shows that the

professionalism of a textual description can reduce the negative effect of risk

rhetoric and make reward claims appear more credible. This is shown in Figures

23 and 24.
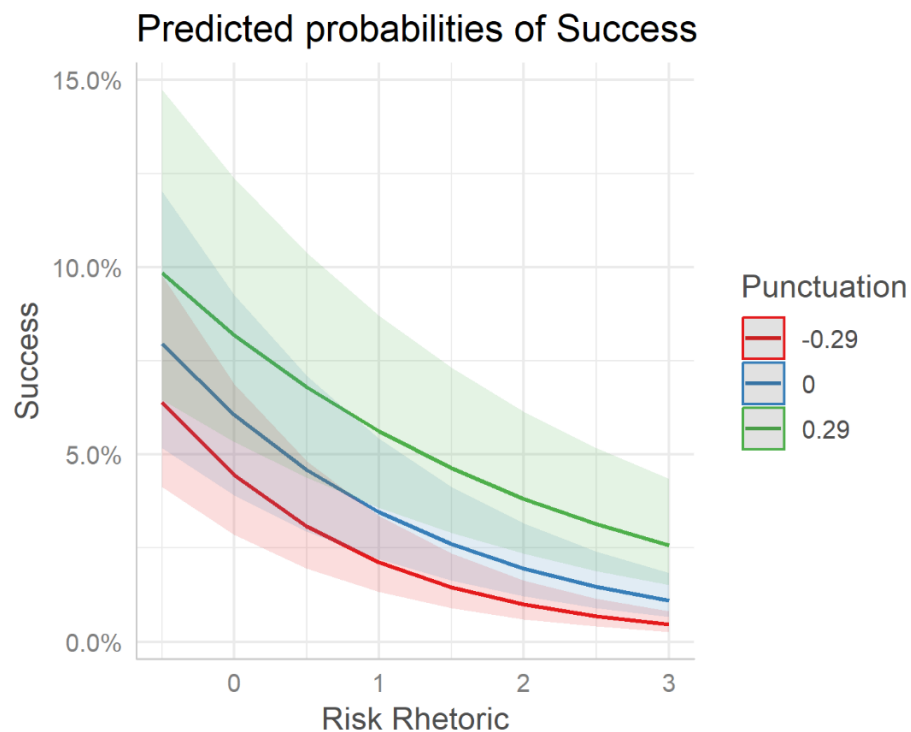
Figure 23. Study 2. Preparedness × risk
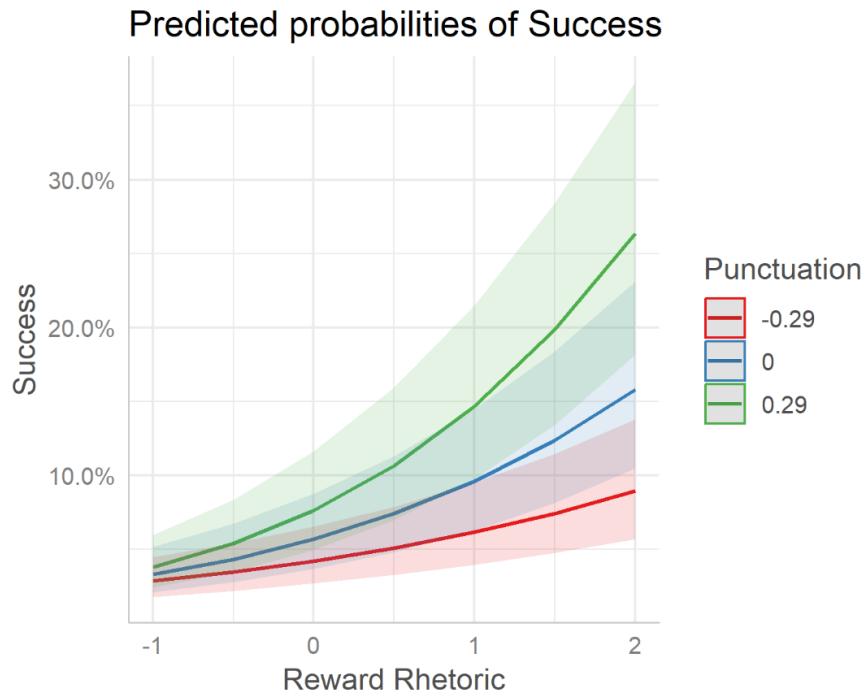
Figure 24. Study 2. Preparedness × reward

Models 9 and 10 test **H5a(ii)** and **H5b(ii)** using a reverse signal of

preparedness (i.e. the informality of the language used). Here the moderator

measures informal language, indicating unpreparedness. I expected to see a

negative interaction between this variable and reward rhetoric. According to my

hypotheses, unpreparedness ought to amplify the negative effect of risk rhetoric.

Interestingly, the results show that unpreparedness reduces the credibility of

reward promises and intensifies the negative effect of risk rhetoric (Informal

language × risk rhetoric, $\beta = -0.178$, $p<0.1$, & Informal language × reward

rhetoric, $\beta = -0.152$, $p<0.1$) which further supports **H5a** and **H5b**. Figures 25 and

26 depict these interactions.
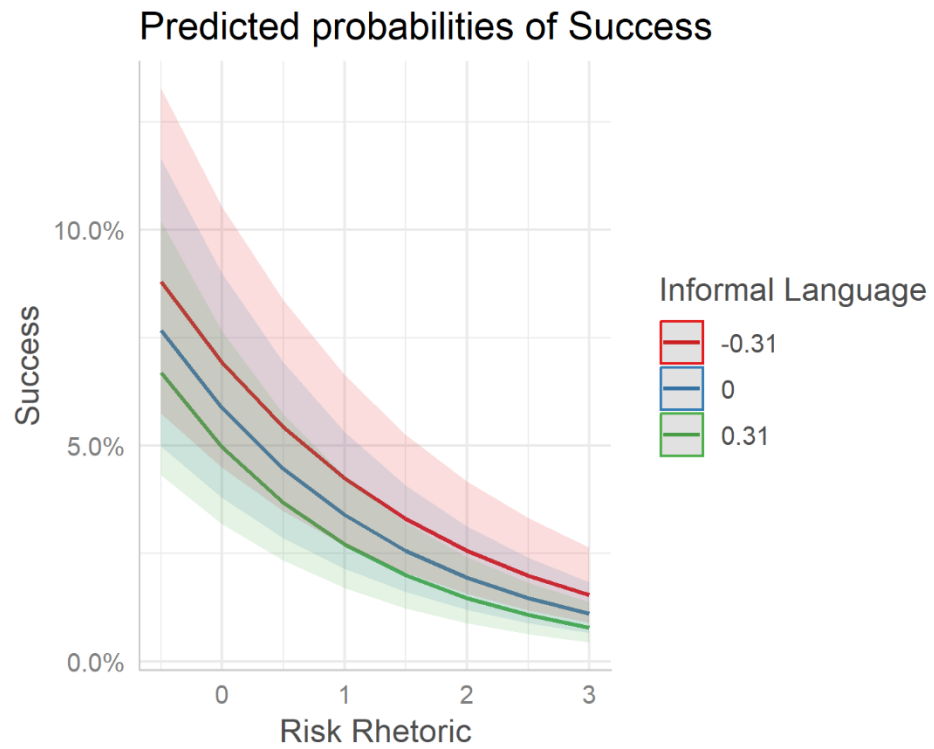
Figure 25. Study 2. Unpreparedness × risk
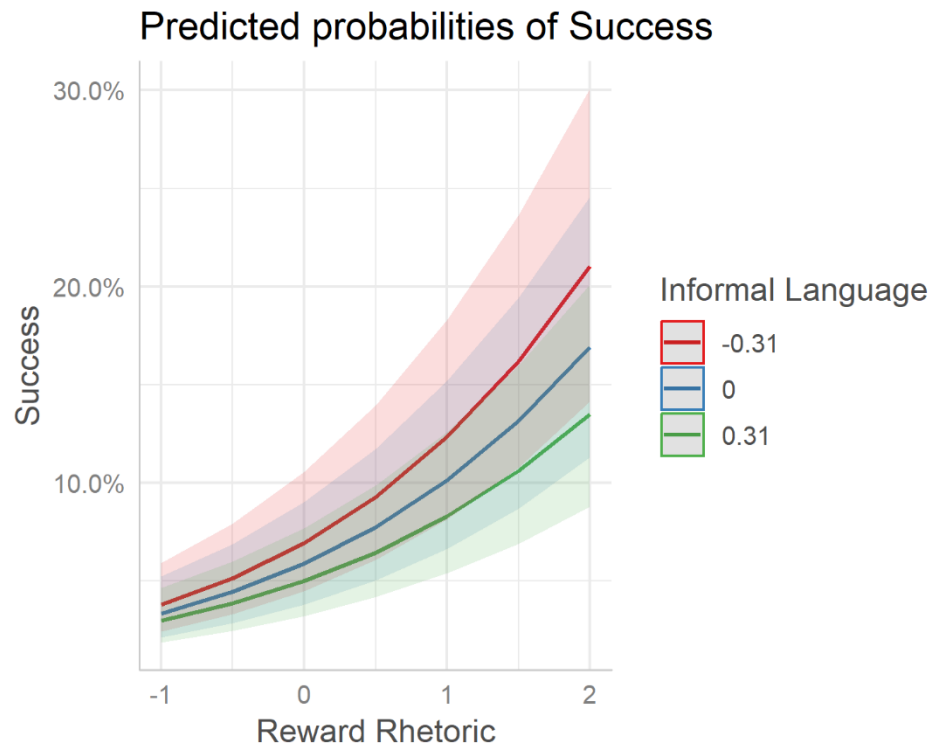
Figure 26. Study 2. Unpreparedness × risk

In model 11, I test all the interactions simultaneously and the results stay
consistent. A summary of the findings with regards to each hypothesis is provided
in Table 22. All hypotheses are supported as predicted, except for one, the
interaction between endorsement and reward rhetoric. Thus, the results remain
consistent when testing all interactions in the same model.

Table 18. Study 2. Logistic regression results

	Logit Model										
	Dependent variable: Success										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Main Category	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Endorsement	1.895***	1.848***	1.882***	1.849***	1.847***	1.848***	1.847***	1.847***	1.848***	1.848***	1.880***
	(0.022)	(0.022)	(0.024)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)
Video	4.284***	4.231***	4.231***	4.231***	4.229***	4.233***	4.230***	4.233***	4.231***	4.231***	4.232***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Duration	-0.376***	-0.355***	-0.355***	-0.355***	-0.356***	-0.355***	-0.355***	-0.354***	-0.355***	-0.356***	-0.356***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Goal (USD)	-0.810***	-0.806***	-0.806***	-0.806***	-0.806***	-0.806***	-0.807***	-0.806***	-0.806***	-0.806***	-0.807***
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Human capital	0.413***	0.387***	0.387***	0.387***	0.392***	0.385***	0.387***	0.387***	0.387***	0.387***	0.389***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Word count	0.956***	0.906***	0.906***	0.906***	0.906***	0.906***	0.911***	0.905***	0.906***	0.907***	0.911***
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Unpreparedness (informal L.)		-0.558***	-0.558***	-0.558***	-0.558***	-0.558***	-0.559***	-0.558***	-0.569***	-0.559***	-0.581***
		(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.030)	(0.029)	(0.029)
Preparedness (punctuation)		1.088***	1.089***	1.088***	1.088***	1.087***	1.118***	1.086***	1.088***	1.088***	1.125***
		(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Risk rhetoric		-0.568***	-0.609***	-0.568***	-0.569***	-0.568***	-0.585***	-0.568***	-0.575***	-0.566***	-0.632***
		(0.036)	(0.038)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.038)
Reward rhetoric		0.588***	0.589***	0.599***	0.588***	0.589***	0.593***	0.567***	0.589***	0.590***	0.576***
		(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.027)
Endorsement × risk		0.354***									0.329***
		(0.100)									(0.101)
Endorsement × reward				-0.088							-0.055
				(0.078)							(0.078)
Human Capital × risk					0.091**						0.092**
					(0.037)						(0.037)
Human Capital × reward						0.050*					0.052*
						(0.029)					(0.029)
Preparedness × risk							0.623***				0.771***
							(0.093)				(0.099)
Preparedness × reward								0.571***			0.674***
								(0.090)			(0.088)
Unpreparedness × risk									-0.178*		-0.299***
									(0.107)		(0.105)
Unpreparedness × reward										-0.152*	-0.238***
										(0.079)	(0.078)
Constant	-0.545*	-0.927***	-0.908***	-0.921***	-0.924***	-0.929***	-0.923***	-0.956***	-0.929***	-0.928***	-0.935***

	Logit Model										
	(0.325)	(0.324)	(0.323)	(0.324)	(0.324)	(0.325)	(0.323)	(0.325)	(0.324)	(0.324)	(0.323)
Observations	187,769	187,769	187,769	187,769	187,769	187,769	187,769	187,769	187,769	187,769	187,769
Log Likelihood	-58,451.320	-57,290.340	-57,284.180	-57,289.680	-57,286.570	-57,288.570	-57,272.910	-57,270.070	-57,289.020	-57,288.460	-57,227.450
Akaike Inf. Crit.	116,962.600	114,648.700	114,638.400	114,649.400	114,643.100	114,647.100	114,615.800	114,610.100	114,648.000	114,646.900	114,538.900

Note: [*]p<0.1; [**]p<0.05; [***]p<0.01, Robust standard errors in parentheses.

Chapter 13

Study 2. Robustness Tests

13.1. Robustness 1: Language Skills

It is possible that creators from countries with higher levels of English language skills may be able to generate better descriptions for their projects, and thus be more successful than others. To address this factor, I controlled for the level of English language skills, as measured by national TOEFL scores (Ku & Zussman, 2010). These scores are reported based on passport data, and not the location where the exam was taken, so it accurately reflects the English familiarity levels of nationals from each country.

My findings do not change after controlling for this variable, and results remain consistent. In addition, I also controlled for the average TOEFL written skills score of each country, and again the results remained unchanged. These results are provided in Table 19.

Table 19. Study 2. Robustness 1 (Language Skills)

	Logit Model										
	Dependent variable: Success										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Main Category	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Endorsement	1.896***	1.848***	1.882***	1.849***	1.847***	1.848***	1.847***	1.847***	1.848***	1.848***	1.880***
	(0.022)	(0.022)	(0.024)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)
Video	4.284***	4.233***	4.233***	4.233***	4.231***	4.235***	4.232***	4.235***	4.233***	4.233***	4.233***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Duration	-0.377***	-0.355***	-0.355***	-0.355***	-0.356***	-0.355***	-0.354***	-0.354***	-0.355***	-0.355***	-0.355***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Goal (USD)	-0.810***	-0.806***	-0.806***	-0.806***	-0.805***	-0.805***	-0.806***	-0.806***	-0.806***	-0.806***	-0.807***
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Human capital	0.412***	0.387***	0.387***	0.387***	0.392***	0.385***	0.387***	0.387***	0.387***	0.387***	0.389***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Word count	0.957***	0.906***	0.905***	0.906***	0.906***	0.906***	0.911***	0.905***	0.906***	0.907***	0.911***
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Language skills	-0.719***	-0.112	-0.121	-0.107	-0.110	-0.111	-0.107	-0.108	-0.116	-0.126	-0.131
	(0.211)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)	(0.216)
Unpreparedness (informal L.)		-0.556***	-0.556***	-0.556***	-0.556***	-0.556***	-0.557***	-0.556***	-0.567***	-0.557***	-0.580***
		(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.030)	(0.029)	(0.029)
Preparedness (punctuation)		1.086***	1.087***	1.086***	1.086***	1.085***	1.116***	1.084***	1.086***	1.086***	1.123***
		(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Risk rhetoric		-0.569***	-0.609***	-0.569***	-0.570***	-0.569***	-0.586***	-0.569***	-0.575***	-0.567***	-0.633***
		(0.036)	(0.038)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.038)
Reward rhetoric		0.591***	0.591***	0.600***	0.591***	0.591***	0.595***	0.569***	0.591***	0.593***	0.578***
		(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.027)
Endorsement × risk			0.351***								0.327***
			(0.100)								(0.102)
Endorsement × reward				-0.081							-0.049
				(0.078)							(0.078)
human capital × risk					0.090**						0.092**
					(0.037)						(0.037)
human capital × reward						0.049*					0.052*
						(0.029)					(0.029)
preparedness × risk							0.624***				0.772***
							(0.093)				(0.099)
preparedness × reward								0.571***			0.675***
								(0.090)			(0.088)
unpreparedness × risk									-0.180*		-0.302***
									(0.107)		(0.105)
unpreparedness × reward										-0.156**	-0.242***

	Logit Model										
										(0.079)	(0.079)
Constant	2.686***	-0.437	-0.377	-0.452	-0.444	-0.444	-0.456	-0.482	-0.420	-0.373	-0.358
	(1.004)	(1.028)	(1.028)	(1.028)	(1.028)	(1.027)	(1.029)	(1.027)	(1.028)	(1.028)	(1.027)
Observations	187,610	187,610	187,610	187,610	187,610	187,610	187,610	187,610	187,610	187,610	187,610
Log Likelihood	-58,376.450	-57,222.100	-57,216.070	-57,221.530	-57,218.390	-57,220.370	-57,204.620	-57,201.830	-57,220.740	-57,220.130	-57,159.250
Akaike Inf. Crit.	116,814.900	114,514.200	114,504.100	114,515.100	114,508.800	114,512.700	114,481.200	114,475.700	114,513.500	114,512.300	114,404.500
Note:	*p<0.1; **p<0.05; ***p<0.01										

13.2. Robustness 2: Punctuation level (outliers)

Due to the high variation in punctuation level, and as an additional

robustness test, I limited the analysis to projects with punctuation levels of

between three standard deviations below and above the mean to rule out the effect

of any possible outlier influence (Aguinis, Gottfredson, & Joo, 2013). This

method is an effective quantitative approach to exclude outliers (Kulich,

Trojanowski, Ryan, Alexander Haslam, & Renneboog, 2011). Table 20 shows that

my results are completely robust with regards to the inclusion or removal of

outliers, and rules out their influence on my findings. In Table 22, the summary of

my findings can be compared against my robustness test results. As evident from

Table 20 and Table 22, my findings are robust and not driven by extreme

observations (Aguinis et al., 2013).

Table 20. Study 2. Robustness 2 (Outliers)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	— Logit Model										
	Dependent variable: Success										
Main Category	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Endorsement	1.893***	1.840***	1.877***	1.841***	1.840***	1.840***	1.840***	1.840***	1.840***	1.841***	1.877***
	(0.022)	(0.022)	(0.024)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)
Video	4.286***	4.228***	4.228***	4.228***	4.226***	4.230***	4.227***	4.230***	4.229***	4.229***	4.227***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Duration	-0.377***	-0.352***	-0.353***	-0.353***	-0.353***	-0.352***	-0.352***	-0.352***	-0.353***	-0.353***	-0.353***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Goal (USD)	-0.812***	-0.808***	-0.808***	-0.808***	-0.807***	-0.807***	-0.808***	-0.808***	-0.808***	-0.808***	-0.809***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Human capital	0.411***	0.384***	0.384***	0.384***	0.389***	0.382***	0.384***	0.384***	0.384***	0.384***	0.386***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Word count	0.959***	0.913***	0.912***	0.913***	0.913***	0.913***	0.917***	0.912***	0.913***	0.914***	0.917***
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Language skills	-0.722***	-0.008	-0.017	-0.003	-0.006	-0.007	0.001	-0.005	-0.012	-0.026	-0.029
	(0.212)	(0.218)	(0.218)	(0.218)	(0.218)	(0.218)	(0.218)	(0.217)	(0.218)	(0.218)	(0.218)
Unpreparedness (informal L.)		-0.587***	-0.587***	-0.587***	-0.587***	-0.587***	-0.589***	-0.588***	-0.600***	-0.588***	-0.615***
		(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.030)	(0.029)	(0.030)
Preparedness (punctuation)		1.317***	1.318***	1.317***	1.316***	1.316***	1.357***	1.309***	1.317***	1.317***	1.359***
		(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.033)	(0.032)	(0.032)	(0.032)	(0.033)
Risk rhetoric		-0.568***	-0.610***	-0.568***	-0.569***	-0.568***	-0.578***	-0.568***	-0.576***	-0.565***	-0.631***
		(0.036)	(0.038)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.037)	(0.036)	(0.039)
Reward rhetoric		0.576***	0.576***	0.586***	0.576***	0.576***	0.579***	0.561***	0.577***	0.578***	0.570***
		(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.027)
Endorsement × risk		0.375***									0.367***
		(0.101)									(0.103)
Endorsement × reward				-0.089							-0.047
				(0.079)							(0.079)
Human capital × risk					0.087**						0.088**
					(0.037)						(0.037)
Human capital × reward						0.045					0.047
						(0.029)					(0.029)
Preparedness × risk							0.767***				0.921***
							(0.120)				(0.123)
Preparedness × reward								0.528***			0.648***
								(0.097)			(0.098)
unpreparedness × risk									-0.207*		-0.353***
									(0.108)		(0.109)
unpreparedness × reward										-0.192**	-0.264***

	Logit Model										
										(0.079)	(0.080)
Constant	2.697***	-0.984	-0.921	-1.000	-0.990	-0.992	-1.008	-1.025	-0.966	-0.904	-0.884
	(1.009)	(1.035)	(1.035)	(1.036)	(1.035)	(1.035)	(1.036)	(1.034)	(1.035)	(1.035)	(1.034)
Observations	185,441	185,441	185,441	185,441	185,441	185,441	185,441	185,441	185,441	185,441	185,441
Log Likelihood	-57,880.810	-56,604.190	-56,597.430	-56,603.540	-56,600.800	-56,602.770	-56,585.830	-56,590.390	-56,602.480	-56,601.290	-56,546.190
Akaike Inf. Crit.	115,823.600	113,278.400	113,266.900	113,279.100	113,273.600	113,277.500	113,243.700	113,252.800	113,277.000	113,274.600	113,178.400
Note:	*p<0.1; **p<0.05; ***p<0.01										

13.3. Robustness 3: cancelled and suspended projects

Kickstarter suspends some campaigns on its platform. Projects that look
fraudulent for any reason will be suspended, and the collected funds returned to
the backers. This may happen before or after the campaign's completion. Owners
can also cancel their campaign for any reason during or after the duration of fund
collection. Such projects may not be homogenous with other observations, as
most cancellations or suspensions happen before the campaign ends.

As another robustness check, I removed projects from my sample that
were canceled by their creators or suspended by Kickstarter. The results of this
robustness check are provided in Table 21, and are aligned with previous findings,
with the exception of **H5a(ii)**, which is no longer statistically significant. All other
findings remain consistent.

Table 21. Study 2. Robustness 3 (removing canceled and suspended campaigns)

					Logit Model						
					Dependent variable: Success						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Main Category	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Endorsement	1.867***	1.817***	1.851***	1.818***	1.816***	1.818***	1.817***	1.816***	1.817***	1.818***	1.849***
	(0.023)	(0.023)	(0.026)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.026)
Video	4.215***	4.164***	4.164***	4.164***	4.162***	4.166***	4.163***	4.166***	4.164***	4.164***	4.165***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Duration	-0.370***	-0.350***	-0.351***	-0.351***	-0.351***	-0.350***	-0.350***	-0.349***	-0.350***	-0.351***	-0.350***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Goal (USD)	-0.795***	-0.791***	-0.791***	-0.791***	-0.790***	-0.790***	-0.791***	-0.791***	-0.791***	-0.791***	-0.792***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Human capital	0.481***	0.454***	0.454***	0.454***	0.460***	0.451***	0.454***	0.453***	0.454***	0.454***	0.455***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Word count	0.991***	0.938***	0.938***	0.938***	0.938***	0.938***	0.943***	0.937***	0.938***	0.939***	0.943***
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Language skills	-0.623***	0.016	0.007	0.022	0.018	0.018	0.023	0.016	0.012	-0.002	-0.008
	(0.221)	(0.227)	(0.227)	(0.228)	(0.227)	(0.227)	(0.228)	(0.227)	(0.227)	(0.227)	(0.227)
Unpreparedness (informal L.)		-0.551***	-0.551***	-0.550***	-0.550***	-0.550***	-0.552***	-0.551***	-0.560***	-0.552***	-0.573***
		(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.031)	(0.030)	(0.031)
Preparedness (punctuation)		1.148***	1.149***	1.149***	1.148***	1.147***	1.181***	1.146***	1.149***	1.149***	1.188***
		(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Risk rhetoric		-0.574***	-0.613***	-0.574***	-0.569***	-0.574***	-0.590***	-0.575***	-0.580***	-0.572***	-0.630***
		(0.038)	(0.040)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.040)
Reward rhetoric		0.633***	0.633***	0.646***	0.632***	0.636***	0.636***	0.609***	0.633***	0.635***	0.625***
		(0.027)	(0.028)	(0.029)	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)	(0.027)	(0.029)
Endorsement × risk		0.346***									0.323***
		(0.106)									(0.108)
Endorsement × reward				-0.118							-0.081
				(0.083)							(0.084)
Human capital × risk					0.098**						0.099**
					(0.044)						(0.044)
Human capital × reward						0.076**					0.079**
						(0.034)					(0.033)
Preparedness × risk							0.691***				0.837***
							(0.103)				(0.109)
Preparedness × reward								0.646***			0.754***
								(0.095)			(0.095)
unpreparedness × risk									-0.151		-0.283***
									(0.110)		(0.110)
unpreparedness × reward										-0.178**	-0.270***
										(0.082)	(0.082)

	Logit Model										
Constant	2.254**	-1.015	-0.954	-1.035	-1.021	-1.028	-1.044	-1.056	-1.000	-0.936	-0.923
	(1.056)	(1.080)	(1.081)	(1.081)	(1.081)	(1.080)	(1.081)	(1.079)	(1.080)	(1.081)	(1.080)
Observations	161,910	161,910	161,910	161,910	161,910	161,910	161,910	161,910	161,910	161,910	161,910
Log Likelihood	-52,803.380	-51,655.730	-51,650.430	-51,654.670	-51,652.590	-51,652.580	-51,637.450	-51,632.610	-51,654.860	-51,653.390	-51,589.150
Akaike Inf. Crit.	105,668.800	103,381.500	103,372.900	103,381.300	103,377.200	103,377.200	103,346.900	103,337.200	103,381.700	103,378.800	103,264.300
Note:	*p<0.1; **p<0.05; ***p<0.01										

Table 22. Study 2. Predicted effects & findings

Hypothesis	Predicted Effect	Findings	Robustness 1	Robustness 2	Robustness 3
H1a: risk rhetoric	-	-	-	-	-
H1b: reward rhetoric	+	+	+	+	+
H2a: preparedness	+	+	+	+	+
H2b: unpreparedness	-	-	-	-	-
H3a: endorsement × risk rhetoric	+	+	+	+	+
H3b: endorsement × reward rhetoric	+	n.s.	n.s.	n.s.	n.s.
H4a: human capital × risk rhetoric	+	+	+	+	+
H4b: human capital × reward rhetoric	+	+	+	n.s.	+
H5a(i): preparedness × risk rhetoric	+	+	+	+	+
H5b(i): preparedness × reward rhetoric	+	+	+	+	+
H5a(ii): unpreparedness × risk rhetoric	-	-	-	-	n.s.
H5b(ii): unpreparedness × reward rhetoric	-	-	-	-	-

Chapter 14

Study 2. Discussion, limitations, and future research

14.1. Discussion

My study contributes to the literature by showing the importance of textual description not just as a means of persuasive communication, but also as a signal of quality. Also, my study adds to the literature by showing that signals of quality (costly and less costly) can affect the meaning of the narrative.

The marketing literature suggests using text analysis to measure different aspects of firm-generated data to develop insights (Balducci & Marinova, 2018). Unstructured data provides a unique and rich opportunity to measure marketing constructs. I benefited from this capability of text analysis to measure risk and reward direction of text. I also measured the preparedness of entrepreneurs seeking funding by analyzing their project description. I tested the direct effect of these variables and then demonstrated the interesting interaction of these variables with traditional quality signals such as endorsement, and past experience (Courtney et al., 2017; Kirmani & Rao, 2000).

I measured the importance of text and its focus on risk or reward, and also provided hypotheses and findings with regards to the interaction between textual signals and language regarding risk versus reward. First, I showed the importance of a project's description, including the meaning and preparedness of the text. I showed that risk rhetoric reduces a project's chance of success, and reward rhetoric increases its performance. More interestingly, I showed that the

preparedness of the text is also associated with performance in entrepreneurial fundraising for new products.

This paper contributes to the relevant literature by demonstrating that signals of quality (experience, endorsement, and preparedness) positively moderate the effect of risk rhetoric on crowdfunding performance. Signals of quality also have an impact on how text is perceived, and therefore they too can affect the effect of the meaning of a text (i.e. focus on risk or reward) on performance. When reducing the effect of risk rhetoric on crowdfunding performance, my research strongly suggests that endorsement, preparedness, and experience can all reduce the effect of risk that is conveyed by a project's description.

The findings of my study are interesting and counter intuitive. Findings are counter intuitive because if one considers the quality of textual description through persuasiveness lens (Allison et al., 2017), then it must increase the negative effect of risk rhetoric. A more persuasive text must persuade the backers when she talks about risk. Interestingly, my study's suggested view of the textual description as a preparedness signal (Pollack et al., 2012) predicts the opposite of what persuasive lens suggests. Empirical findings support my suggested view and show that quality of the text (better punctuation and less informal) acts as a quality signal and reduces the negative effect of risk rhetoric.

Message verbiage is an important element of crowdfunding (Zemack-Rugar & Klucarova-Travani, 2018), and in my study I have shown its direct

effect, and also provided evidence of its effectiveness in the presence of

endorsement, preparedness, and human capital signals. The meaning of the text

can therefore be perceived differently, based on the presence or absence of quality

signals.

The results of my study also contribute to the emerging literature on

rhetorical and less costly signals of quality (Anglin, Short, et al., 2018; Moss et

al., 2015; Steigenberger & Wilhelm, 2018). In my study I have suggested the

quality of textual description (more punctuation and less informal language) as a

less costly signal of quality and I have shown that it affects risk and reward

rhetoric the same way that the traditional costly signals of quality (such as human

capital and endorsement) do. My study validates the view that in crowdfunding

setting where investors are unsophisticated, and noise is high, less costly signals

of quality become important sources of information (Anglin, Short, et al., 2018)

and influence the investors behavior.

From a practical point of view, entrepreneurs and innovators can benefit from my

study's findings and increase their chances of success by increasing the quality of

their narratives. Creating a high quality video is a costly activity, that may not be

achievable by the all crowdfunding entrepreneurs, but the use of punctuation, and

more formal language are very achievable quality aspects that all crowdfunding

entrepreneurs can benefit from. It is also beneficial for more risky projects to

know that they can mitigate the effect of the inherent risk by providing rhetorical

as well as costly quality signals.

14.2. Limitations & future research

This study is limited to textual analysis, but research shows that a project's video pitch is an important factor, as this medium conveys a great deal of information (Chan & Parhankangas, 2017) with a narrative that can be as important as the textual description. So far research in the field have very limitedly investigated the content of video (Parhankangas & Renko, 2017). Researchers have mainly used video as a control variable or a signal of quality. An extension to my research would be to investigate the quality of video pitches and their narrative content on the success of crowdfunding campaigns. Future research can use machine learning techniques of voice to text conversion (Izrailevsky & Bell, 2018) in order to transcribe videos and then run quality analyses based on language formality for example. Video quality could also be measured using machine learning techniques and then an interesting idea is to extend the current research and to test the interaction of the quality of video and the narrative direction and also their interaction with other factors (costly and less costly quality signals). Video quality could also indicate preparedness, which can be used to test the importance of this signal and its effect on reducing a campaign's perceived risk. Acknowledging the limitations of this study, I suggest that future research would benefit from advances in machine learning (Wedel & Kannan, 2016) to increase the quality and variety of measurable variables for unstructured data.

Appendices

The words that were used to measure Positive Psychological Capital.

Appendix 1 – Frequency of projects on Kickstarter by category

Projects by Category		
Main Category	Frequency	Percent
Art	26,932	%7.11
Comics	11,749	%3.1
Crafts	9,175	%2.42
Dance	3,864	%1.02
Design	31,266	%8.26
Fashion	23,145	%6.11
Film &Video	59,430	%15.69
Food	23,747	%6.27
Games	35,271	%9.31
Journalism	4,900	%1.29
Music	54,538	%14.4
Photography	10,783	%2.85
Publishing	41,552	%10.97
Technology	32,763	%8.65
Theater	9,627	%2.54

Appendix 2- Frequency of projects by creator country

Projects by Creator Country		
Country	Frequency	Percent
United States	284,494	% 75.15
United Kingdom	33,951	% 8.97
Canada	15,308	% 4.04
Australia	7,081	% 1.87
Germany	4,492	% 1.19
France	3,386	% 0.89
Italy	3,342	% 0.88
Netherlands	2,777	% 0.73
Spain	2,681	% 0.71
Mexico	2,213	% 0.58
Sweden	1,899	% 0.5
New Zealand	1,394	% 0.37
Denmark	1,183	% 0.31
Ireland	913	% 0.24
Hong Kong	841	% 0.22
Switzerland	781	% 0.21
Norway	716	% 0.19
Japan	676	% 0.18
Singapore	666	% 0.18
Austria	636	% 0.17
Belgium	626	% 0.17
China	563	% 0.15
India	366	% 0.1

Appendix 3- Words that are associated with positive PsyCap (McKenny et al., 2013)

Confidence	Hope	Optimism	Resilience
"ability"	"accomplishments"	"aspire"	"adamant"
"accomplish"	"achievements"	"aspirer"	"adamantly"
"accomplished"	"approach"	"aspires"	"assiduous"
"accomplishes"	"aspiration"	"aspiring"	"assiduously"
"accomplishing"	"aspire"	"aspiringly"	"assiduousness"
"accomplishments"	"aspired"	"assurance"	"backbone"
"achievements"	"aspirer"	"assured"	"bandwidth"
"achieving"	"aspires"	"assuredly"	"bears up"
"adept"	"aspiring"	"assuredness"	"bounce"
"adeptly"	"aspiringly"	"assuring"	"bounced"
"adeptness"	"assurance"	"auspicious"	"bounces"
"adroitly"	"assurances"	"auspiciously"	"bouncing"
"adroitness"	"assure"	"auspiciousness"	"buoyant"
"all-in"	"assured"	"bank on"	"commitment"
"aplomb"	"assuredly"	"beamish"	"commitments"
"arrogance"	"assuredness"	"believe"	"committed"
"arrogant"	"assuring"	"believed"	"consistent"
"arrogantly"	"assuringly"	"believes"	"determination"
"assurance"	"assuringness"	"believing"	"determined"
"assured"	"belief"	"bullish"	"determinedly"
"assuredly"	"believe"	"bullishly"	"determinedness"
"assuredness"	"believed"	"bullishness"	"devoted"
"backbone"	"believes"	"confidence"	"devotedly"
"bandwidth"	"believing"	"confident"	"devotedness"
"belief"	"breakthrough"	"confidently"	"devotion"
"capable"	"certain"	"encourage"	"die trying"
"capableness"	"certainly"	"encouraged"	"died trying"
"capably"	"certainty"	"encourages"	"dies trying"
"certain"	"committed"	"encouraging"	"disciplined"
"certainly"	"concept"	"encouragingly"	"dogged"
"certainness"	"confidence"	"ensuring"	"doggedly"
"certainty"	"confident"	"expectancy"	"doggedness"
"certitude"	"confidently"	"expectant"	"drudge"
"cocksurely"	"convinced"	"expectation"	"drudged"
"cocksureness"	"dare say"	"expectations"	"drudges"
"cocky"	"deduce"	"expected"	"endurance"
"commitment"	"deduced"	"expecting"	"endure"
"commitments"	"deduces"	"faith"	"endured"
"committed"	"deducing"	"good omen"	"endures"
"compelling"	"desire"	"hearten"	"enduring"
"competence"	"desired"	"heartened"	"grit"
"competency"	"desires"	"heartener"	"hammer away"
"competent"	"desiring"	"heartening"	"hammered away"
"competently"	"doubt not"	"hearteningly"	"hammering away"
"confidence"	"energy"	"heartens"	"hammers away"
"confident"	"engage"	"hope"	"held fast"
"confidently"	"engagement"	"hoped"	"held good"

Confidence	Hope	Optimism	Resilience
"conviction"	"expectancy"	"hopeful"	"held up"
"effective"	"faith"	"hopefully"	"hold fast"
"effectively"	"foresaw"	"hopefulness"	"holding fast"
"effectiveness"	"foresee"	"hoper"	"holding up"
"effectual"	"foreseeing"	"hopes"	"holds fast"
"effectually"	"foreseen"	"hoping"	"holds good"
"effectualness"	"foresees"	"ideal"	"immovability"
"efficacious"	"goal"	"idealist"	"immovable"
"efficaciously"	"goals"	"idealistic"	"immovably"
"efficaciousness"	"hearten"	"idealistically"	"indefatigable"
"efficacy"	"heartened"	"ideally"	"indefatigableness"
"equanimity"	"heartening"	"looking up"	"indefatigably"
"equanimous"	"hearteningly"	"looks up"	"indestructibility"
"equanimously"	"heartens"	"optimism"	"indestructible"
"expertise"	"hope"	"optimist"	"indestructibleness"
"expertly"	"hoped"	"optimistic"	"indestructibly"
"fortitude"	"hopeful"	"optimistical"	"intransigence"
"fortitudinous"	"hopefully"	"optimistically"	"intransigency"
"forward"	"hopefulness"	"outlook"	"intransigent"
"forwardness"	"hoper"	"positive"	"keep at"
"know-how"	"hopes"	"positively"	"keep going"
"knowledgability"	"hoping"	"positiveness"	"keep on"
"knowledgeable"	"idea"	"positivity"	"keeping at"
"knowledgably"	"innovation"	"promising"	"keeping going"
"masterful"	"innovative"	"propitious"	"keeping on"
"masterfully"	"ongoing"	"propitiously"	"keeps at"
"masterfulness"	"opportunity"	"propitiousness"	"keeps going"
"masterly"	"promise"	"reassure"	"keeps on"
"mastery"	"promising"	"reassured"	"kept at"
"overconfidence"	"propitious"	"reassures"	"kept going"
"overconfident"	"propitiously"	"reassuring"	"kept on"
"overconfidently"	"propitiousness"	"roseate"	"labored"
"persuasion"	"solution"	"rosy"	"laboring"
"power"	"solutions"	"sanguine"	"never-tiring"
"powerful"	"upbeat"	"sanguinely"	"never-wearying"
"powerfully"	"wishes"	"sanguineness"	"perdure"
"powerfulness"	"wishing"	"sanguinity"	"perdured"
"prevailed"	"yearn"	"sunniness"	"perduring"
"prevailing"	"yearn for"	"sunny"	"perseverance"
"prevails"	"yearning"		"persevere"
"prevalence"	"yearning for"		"persevered"
"prevalent"	"yearns for"		"persevering"
"reassurance"			"persist"
"reassure"			"persisted"
"reassured"			"persistence"
"reassures"			"persistent"
"reassuring"			"persisting"
"self-assurance"			"pertinacious"
"self-assured"			"pertinaciously"
"self-assuring"			"pertinacity"
"self-confidence"			"rebound"

Confidence	Hope	Optimism	Resilience
"self-confident"			"rebounded"
"self-dependence"			"rebounding"
"self-dependent"			"rebounds"
"self-reliance"			"relentlessness"
"self-reliant"			"remain"
"stamina"			"remained"
"steadily"			"remaining"
"steadiness"			"remains"
"steady"			"resilience"
"strength"			"resiliency"
"strong"			"resilient"
"stronger"			"resolute"
"strongish"			"resolutely"
"strongly"			"resoluteness"
"strongness"			"resolve"
"superior"			"resolved"
"superiority"			"resolves"
"sure"			"resolving"
"surely"			"robust"
"sureness"			"sedulity"
"unblinking"			"sedulous"
"unblinkingly"			"sedulously"
"undoubtedly"			"sedulousness"
"undoubting"			"snap back"
"unflappability"			"snapped back"
"unflappable"			"snapping back"
"unflinching"			"snaps back"
"unflinchingly"			"spring back"
"unhesitating"			"springing back"
"unhesitatingly"			"springs"
"unwavering"			"springs back"
"unwaveringly"			"sprung back"
			"stalwart"
			"stalwartly"
			"stalwartness"
			"stand fast"
			"stand firm"
			"standing fast"
			"standing firm"
			"stands fast"
			"stands firm"
			"stay"
			"steadfast"
			"steadfastly"
			"steadfastness"
			"stood fast"
			"stood firm"
			"strove"
			"survive"
			"surviving"
			"surviving"

Confidence	Hope	Optimism	Resilience
			"tenacious"
			"tenaciously"
			"tenaciousness"
			"tenacity"
			"tough"
			"uncompromising"
			"uncompromisingly"
			"uncompromisingness"
			"unfaltering"
			"unfalteringly"
			"unflagging"
			"unrelenting"
			"unrelentingly"
			"unrelentingness"
			"unshakable"
			"unshakablely"
			"unshakeable"
			"unshaken"
			"unshaking"
			"unswervable"
			"unswerved"
			"unswerving"
			"unswervingly"
			"unswervingness"
			"untiring"
			"unwavered"
			"unwavering"
			"unweariedness"
			"unyielding"
			"unyieldingly"
			"unyieldingness"
			"upheld"
			"uphold"
			"upholding"
			"upholds"
			"zeal"
			"zealous"
			"zealously"
			"zealousness"

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