Affiliation Rhetoric and Digital Orientation in Crowdfunding Appeals

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ABSTRACT

This research examines how crowdfunding campaigns' external affiliations and digital orientation contribute to crowdfunding success. We propose that reputable external affiliations and a digital orientation bring legitimacy to campaigns, which in turn significantly improves crowdfunding success. To test our hypotheses, we employ computer-aided text analysis on 4,058 crowdfunding campaigns using validated dictionaries. Our results show that crowdfunding success is significantly impacted by prestigious affiliations, numerous common affiliations, and digital orientation. Moreover, we find that affiliations interact with prestige and digital orientation to boost crowdfunding success. This study contributes to the literature on reputation, legitimacy, and digital orientation in the context of entrepreneurship, particularly crowdfunding.

Keywords: Affiliations, digital orientation, legitimacy, signaling, crowdfunding

1. Introduction

Crowdfunding is a social context wherein entrepreneurs can unconventionally raise money from numerous people in highly dispersed crowds (Yasar et al., 2022). Crowdfunding campaigns, like other forms of entrepreneurial pitches, suffer from liability of newness challenges (Frydrych et al., 2014; Kim et al., 2016) resulting from high uncertainty (Ahlers et al., 2015; Courtney et al., 2017). Due to information asymmetry and uncertainty, it is challenging for backers to differentiate between campaigns that will deliver rewards and those which may not. To distinguish among campaigns, funders look for representations and perceptions of legitimacy and trustworthiness (Colombo et al., 2015). In these situations, legitimizing factors include a perceived connection to external entities (Ahlers et al., 2015; Choi, 2017) and meeting the crowd's expectations regarding what is appropriate. Three primary sources capable of producing legitimacy through reputable external associations are government, schools, and organizations (c.f., Baum & Oliver, 1991; Choi, 2017; DiMaggio & Powell, 1983; Gulati & Higgins, 2003; Zimmerman & Zeitz, 2002).

Previous funding research on affiliations has often focused on social networks (Mollick, 2014), internal or external social capital (e.g., Facebook friends and activity with others campaigns; Colombo et al., 2015), or social support through media mentions (Deephouse, 1996; 2000; Pollock & Rindova, 2003). Indeed, both external and internal social capital has been shown to play an integral role in crowdfunding success. Within the crowdfunding context, external social capital is typically represented by friends and family (Agrawal et al., 2011) and by development within social networks while internal social capital is developed within the crowdfunding platform itself (Colombo, et al., 2015). In sum, past research supports the notion that funders are capable of recognizing multiple forms of affiliations and entrepreneurs are able to leverage this to their advantage.

However, the importance of endorsements and external support has been primarily isolated to research on media and social networks, while self-portrayed affiliations are not examined based on reputation or frequency. Despite the fact that external relationships are imperative for mitigating the liability of newness (Stinchcombe, 1965), bringing legitimacy to new ventures (Aldrich & Fiol, 1994), and accessing new resources, the literature on crowdfunding has not studied entrepreneurs' claimed affiliations and value-added associations. This is surprising since such signals are easily generated and visible on the digital platforms where crowdfunding campaigns are most typically launched.

Those that provide funding using digital technologies expect the companies they finance to be technologically inclined. Expected actions and strategies create legitimacy. By conforming to the social expectations of the crowd, the liability of newness and perceptions of uncertainty are mitigated while funding likelihoods are increased. Indeed, digitalization has transformed the way consumers and organizations work together and exchange value (Yadav & Pavlou, 2014). Technology continuously evolves and produces novel effects on the business environment. It supports audience extension, cost reduction, and intelligence gathering, allowing for small and medium sized enterprises to excel (Borges et al., 2009; Harrigan et al., 2011; Quinton et al., 2018). New venture capabilities and consumer expectations are required to match despite the velocity of market changes involving digital technology (Day, 2011). As such, an entrepreneur's digital orientation should reflect the new venture's ability to exploit digital technology to gain competitive advantage. Despite being a product of the digital age, no one has examined the importance of digital orientation in crowdfunding or even in entrepreneurship more broadly.

To address these research gaps, we argue that crowdfunding backers may look for cues differently than other investors, since projects failing to meet their funding goals receive no

money (Mollick, 2014). Unlike professionals who provide funding to new ventures, crowdfunding relies on lay-funders who typically have limited experience in assessing potential ventures (Courtney et al., 2017). This increases the amount of information asymmetry between the campaign and funders (Agrawal et al., 2011; Ahlers et al., 2015), amplifying the significance of signals in molding funders' evaluations (Moss et al., 2018). Accordingly, we take a signaling theory perspective to understand the influence of rhetoric involving affiliations, prestige, and digital orientation. Our theoretical model is displayed in Figure 1.

INSERT FIGURE 1 HERE

We make several contributions to theory and the literature on entrepreneurial funding. First, given the reliance of the crowd upon claims signaled in the crowdfunding entrepreneurial narrative (Kim et al., 2016), we develop the construct *affiliation rhetoric.* Using signaling theory, and drawing from prior funding research (Moss et al., 2018; Tirdatov, 2014), we argue for the information asymmetry-reducing effects of affiliation rhetoric in low-elaboration decision environments (Allison et al., 2017). Since external entities alter perceptions that there are fundamental differences among ventures (Stuart et al., 1999), we argue that these signals are effective, create separation, and allow external parties to assign value to that separation. We demonstrate the measurement of our affiliation rhetoric construct through the development of computer-based content analysis dictionaries (Short et al., 2010).

Second, our study provides several insights about the signaling value of external affiliations. Signals conveying legitimacy are well-studied in late-stage venture funding such as initial public offerings (e.g., Certo, 2003). Research on social capital signals, prestigious affiliation signals, alliance signals, endorsement signals, and other legitimacy conveying signals has yielded significant knowledge about the multiplicative, additive, or nonadditive (diminishing

returns) nature of simultaneous signals (Khoury et al., 2013). Yet, in early-stage and lay-investor contexts, the study of affiliation signals has yielded little definite knowledge (Ahlers et al., 2015). Our paper is unique in showing that the prestige of external affiliations plays an important role, particularly when few affiliation signals are present.

Third, we share in the development of digital orientation. Sprouting from technology orientation, digital orientation is a new and distinct concept, where "only a dearth of related literature could be found" in its infancy (Khin & Ho, 2018, p. 7). Despite its obvious implications for entrepreneurship, it has yet to be examined from the lens of either new ventures or funders' perceptions. As such, we posit that digital orientation rhetoric leads to crowdfunding success. Further, we suggest that this effect is amplified as the number of affiliations is increased. Being a newly developed concept, our study provides support for its foundation in a previously unexplored context which also informs the entrepreneurial community. We also join the conversation regarding joint signals as mentioned above. Specifically, we show that perceptions of both who you know (i.e., affiliations) and what you know (i.e., digital orientation) matter. When combined, there is potential for a maximizing effect.

2. Literature review

Signals (Spence, 1973) are useful in reducing information asymmetry and uncertainty (Ndofor & Levitas, 2004). Information asymmetries occur when different parties know different things (Stiglitz, 2002). This asymmetry occurs because some information is withheld, proprietary, or unknown, which creates a situation wherein firms know their own quality while external parties (i.e., investors) do not (Kirmani and Rao, 2000). As such, information asymmetry increases uncertainty and risk. Reduction of information asymmetry is a fundamental concern with signaling theory (Spence, 2002), however many common signals are unavailable to

early-stage ventures (Plummer et al., 2016). Since definitive measures are expected to be absent or difficult to observe, funders inspect less explicit indicators of quality. To this end, entrepreneurs use signals to convey desired unobservable attributes to others.

Signals are effective when they create separation and allow external parties to assign value to that separation. Thus, signals must be perceived as representing underlying quality differences. Indeed, entrepreneurs must be able to signal quality in order to compete for access to capital (Momtaz, 2021). Quality refers to the "unobservable ability of the signaler to fulfill the needs or demands of an outsider observing the signal" (Connelly et al., 2011, p. 43). The signaling theory framework is well-suited to early-stage venture funding (e.g., crowdfunding), as new ventures are characterized by the liabilities of newness and smallness with increased information asymmetries, uncertainty, risk, and probability of failure (Cassar, 2004; Harrison et al., 2004). Positive signals are especially consequential for new ventures, where external entities are highly likely to pay attention to these secondary sources of evidence (Rao, 1994). Specifically, positive signals help external parties to perceptually differentiate across ventures and assign value. This helps reduce risks and problems arising from adverse selection and moral hazards (Bergh et al., 2014; Sanders & Bovie, 2004). In contrast, the absence of such signals increases information asymmetry, diminishes value, and discounts prices (Bergh et al., 2014; Cassar, 2004; Harrison et al., 2004). In contrast, after viewing a valuable signal, external entities perceive the new venture as having superior endowments.

2.1. Legitimacy signals in the crowdfunding arena

Relative to more experienced investors, crowdfunding backers' knowledge and quality aspirations may be qualitatively different. Most backers are not experts in new ventures nor are they necessarily overly interested in the future viability or potential profitability of a firm. They

typically lack contextually sophisticated knowledge (Ahlers et al. 2015, Belleflamme et al., 2014) and prioritize future receipt of a specified product (Steigenberger & Wilhelm, 2018). In crowdfunding, high-quality ventures or campaigns have an increased opportunity to signal value (e.g., desired product deliverability), while those lacking are limited. Signals of value create a separation in the equilibrium, which helps external parties separate low- and high-quality projects (Bergh et al., 2014; Drover et al., 2018).

Legitimacy is key for new venture success, being described as necessary for the acquisition of resources (Überbacher, 2014), an antidote for the liability of newness (Fisher et al., 2016), a vital ingredient required for successful new ventures (Navis & Glynn, 2011; Starr & Macmillan, 1990), a prerequisite for growth, and a strong determinant of survival (Aldrich & Fiol, 1994; Garud et al., 2014). Following Zimmerman and Zeitz (2002), we consider legitimacy to be based upon judgments of appropriateness, acceptance, and desirability in addition to being socially embedded. Once legitimacy is established, resources become more accessible and the likelihood of survival increases (Chen et al., 2008; DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Thus, it is valuable for crowdfunding entrepreneurs to signal legitimacy.

In crowdfunding, project pitches represent the foremost avenue for sending signals which overcome information asymmetry (Steigenberger & Wilhelm, 2018). Different types of rhetoric within these pitch narratives signal to potential backers the campaign's likelihood of success, because some characteristics (e.g., alliances, digital orientation) require a certain level of knowledge, experience, legitimacy, and viability. Although crowdfunding pitches typically include both video and textual narratives, recent research has suggested that backers evaluate campaigns in a two-step manner wherein written narratives are given higher levels of attention (Allison et al., 2017; Anglin et al., 2018a). This research points to the notion that crowdfunding

pitch videos serve as a low attention, first-step sorting function, while narratives are given more attention in the second step after campaign interest has already been established. Displays of legitimacy in narratives are low-cost signals (Anglin et al., 2018a). Such signals' costliness emanates not from ex ante costs of acquiring the signal, but from potential ex post costs. Ex post costs arise when a low-cost signal is subsequently discovered to be false; these constraints on low-cost signaling highlight the importance of signal credibility (Farrell & Gibbons, 1989). Low-cost signals are most persuasive when viewers are less sophisticated and have less objective information available, both of which are consistent with the average crowdfunding backer.

3. Hypothesis development

One important method of procuring legitimacy is by way of affiliations (Chen et al., 2008; Navis & Glynn, 2011). These associations consist of social ties between the entrepreneur or new venture and other external entities including individuals, organizations, universities, and governments. These networks or associations mitigate the liability of newness threat by providing credibility and support (Fisher et al., 2016; Navis & Glynn, 2011). This bolsters a new venture's positive image, facilitating its access to resources and its survival (Baum & Oliver, 1991; Chen et al., 2008). A new venture affiliated with a reputable external entity becomes identified with it, increasing the venture's legitimacy and validity (Bitektine & Haack, 2015; Dowling & Pfeffer, 1975). Indeed, "who you know" influences external judgments of effectiveness and efficiency (Zimmerman & Zeitz, 2002).

Entrepreneurs are embedded in a social network (Aldrich & Zimmer, 1986; Cooper, 2002). Through affiliations, entrepreneurs gain access to information, advice, legitimacy, emotional support, and signaling benefits which can facilitate persistence, market information, talent, and ideas. This allows entrepreneurs to further form links with buyers, suppliers,

competitors, or customer organizations (Hoang & Antoncic, 2003). Moreover, entrepreneurs use their affiliations to develop foundational ideas, acquire resources, and build networks to secure resource commitment (Cooper, 2002). In fact, Johannisson (2000) implies that all new ventures emerge from external associations.

These patterns emerge in the crowdfunding context as well. Prior research has shown that most early backers are from the same geographic area, where entrepreneurs have established social ties including family members and close friends (Agrawal et al., 2011; Colombo, et al., 2015) and where virtual connections such as the number of Facebook friends (Mollick, 2014) lead to crowdfunding success. These connections are clearly advantageous to crowdfunding since large networks should increase funding performance outcomes. However, we argue that while individual connections with friends and family are beneficial in terms of support, they are unlikely to serve as useful signals to attract additional (out of network) backers. Therefore, we turn our attention to affiliations which may signal legitimacy to a variety of crowdfunding backers both in terms of affiliation prestige and affiliation quantity.

A second vital way to secure legitimacy is by matching expectations (DiMaggio & Powell, 1983). In short, a digital orientation sends signals or indicates "a company's commitment and openness to applying digital technologies" (Nasiri et al., 2022, p. 275). This is no small task. Rhetoric must meet expectations and match the language of those at the forefront of digitalization. Digital orientation is becoming more important as digital technologies continue to erode competitive advantages afforded by previously examined strategic orientations (e.g., learning, entrepreneurial, and technology orientations; Kindermann et al., 2021). After initial launch, digital services and products continue to evolve (Nambisan et al., 2017). This makes service and product boundaries more malleable, increasing the unpredictability of the innovation

process. As such, digital technology is not fixed and changes dynamically (Yoo et al., 2012). Those with a digital orientation are better prepared to cope with these challenges.

Digital orientation includes a venture's unique set of resources allowing for customer value creation and the action potential in regards to a technology (Kindermann et al., 2021; Majchrzak & Markus, 2013) and allows for the fluidity required in value creation processes to overcome the continuously evolving nature of digital technology (Yoo et al., 2012). The entrepreneur's technological knowledge is a primary determinant of a venture's wide adoption of digital orientation behaviors (Michaelidou et al., 2011; Peltier et al., 2009). Equally important is the entrepreneur's belief that digital technology will create benefits for the venture (Jones et al., 2013). These beliefs manifest in the rhetoric used by an entrepreneur. As such, digital orientation rhetoric can send valuable signals to potential backers, driving crowdfunding success. This is consistent with the notion that signals of technological capabilities can improve initial coin offering fundraising (Philippi et al., 2021). Indeed, sending signals of strategic orientations are indicative of intangible capabilities which can deliver a sustainable competitive advantage (Schweiger et al., 2019). Such orientations are hard to fake, which make them costly as well. They require combinations of competencies and functionalities of technologies that the venture has at its disposal to enrich the customer value proposition allowing for strategic growth (Kindermann et al., 2021). Digital orientation includes both the ingredients and outcomes of digitalization processes. Taken together, entrepreneurs using rhetoric capable of meeting digital expectations create legitimacy for themselves and their venture.

3.1. Affiliations

Endorsements and other external associations allow the legitimacy and credibility of the associated organization to spill over into new ventures and allows for evaluation by funders.

Third parties (e.g., affiliations) add value through reducing perceived information asymmetry and uncertainty by signaling that a project, entrepreneur, or new venture possesses important characteristics (Baum & Oliver, 1991; Sauder & Espeland, 2009), even if the external parties do not materially contribute to the project or entrepreneur's capabilities (Stuart et al., 1999). Ties to external institutions allow nascent ventures to gain legitimacy and access important resources. An affiliated organization's credibility and legitimacy is lent to the new venture, allowing for increased beliefs of deliverability and credibility. Indeed, such ties are essential for entrepreneurs (Baum & Oliver, 1991) since they lead to increased perceptions of trustworthiness and deliverability, while simultaneously decreasing perceptions of uncertainty.

Signals have effect only when visible to and noticed by recipients (Pollock & Gulati, 2007). Visibility can be enhanced by increasing the number of signals. Repeated signals are needed for the reduction of information asymmetry (Connelly et al., 2011; Janney & Folta, 2003, 2006; Park & Mezias, 2005), resulting in increased effectiveness (Balboa & Marti, 2007). For example, as a student receives excellent grades in a variety of courses or as an athlete scores consistently against a variety of teams, the stronger the signal of quality becomes. This may allow an external entity to be more confident in such individuals and thus reduces perceived information asymmetry and risk. According to this structure, signaling power and confidence in a signal can increase with its continual affirmation.

Entrepreneurial narratives are key channels for displaying, repeating, and generally making signals more visible (Moss et al., 2018). Narratives displayed on crowdfunding platforms are particularly impactful given the potential to facilitate new venture legitimization (Frydrych et al., 2014). Thus, a fundamental part of successful crowdfunding involves the entrepreneur crafting a narrative capable of effectively conveying signals (Cappa et al., 2021). Narratives

enable both signals of intent and signals of quality to be displayed to potential funders. Signals of quality serve to distinguish low from high quality firms (Connelly et al., 2011). Descriptions of past and present affiliations with others in narratives signal quality given affiliations' inhibition of venture failure and promotion of legitimacy (e.g., Baum et al., 2000, Ozmel & Guler, 2015).

Extending our preceding arguments, given that descriptions of affiliations have signaling value, we also expect that affiliation rhetoric—words which connote affiliation—in entrepreneurial narratives will also have signaling value as a low-cost signal. Recent entrepreneurial funding research suggests that the rhetoric used in narratives may act as a signal if its occurrence tends to indicate the presence of an underlying indicator of quality or intent (e.g., Moss et al., 2018). Affiliation rhetoric indicates the presence of both. This occurs both via the words used to describe specific affiliations, as well as through the use of words which are suggestive of affiliation. Affiliation rhetoric thus provides legitimizing cues which lead to perceptions that a reward or product will be delivered as promised. Common backer concerns such as information limitations or questions of founder credibility (Courtney et al., 2017) are diminished. Formally:

Hypothesis 1. Affiliation rhetoric is positively related to crowdfunding success.

3.2. Prestigious affiliations

The primary source of uncertainty in crowdfunding relates to unknown project quality and the unknown likelihood of success (Agrawal et al., 2011). In addition, funders are unsure of the entrepreneur's abilities, skills, and trustworthiness. Roughly 75% of Kickstarter-funded projects have substantial delivery delays while others (about 4%) never deliver at all despite collecting funds (Mollick, 2014). Therefore, funders look for signals of legitimacy and reliability to offset information asymmetries and the potential for delays or non-deliverability. Funders

prefer those campaigns that send costly to imitate signals, providing them with proxies for deliverability and venture creation. Building on Higgins and Gulati (2006), we argue that funders are often uncertain about new ventures and base their investment decisions on observable characteristics. In doing so, funders must distinguish from ordinary characteristics and those that signal the new venture's legitimacy.

Legitimacy has long been noted as a venture's acceptance by its external environment (Deephouse, 1996; DiMaggio & Powell, 1983; Meyer & Rowan, 1977) and is conferred by social actors (Ashforth & Gibbs, 1990; Deephouse, 1996; Pfeffer & Salancik, 1978). However, only certain key actors have the authority and standing to promote legitimacy, such as the government (Baum & Oliver, 1991), universities, and well-known or experienced firms (DiMaggio & Powell, 1983). We propose that affiliation with one or more of these actors can convey legitimacy to potential backers of crowdfunding campaigns.

Affiliations in crowdfunding have been largely ignored in the entrepreneurship literature. However, in the IPO context, prior research has shown that affiliations with prestigious underwriters or venture capitalists can bolster firm performance (Megginson & Weiss, 1991; Migliorati & Vismara, 2014). Crowdfunding backers are unique in that they typically do not rely upon underwriters or financial analysts to make funding decisions (Vismara, 2018). As such, our study focuses on affiliations with the federal government, prestigious universities, and prestigious corporations. Association with prominent partners such as these lead to increased performance compared to those whom lack such associates (Stuart et al., 1999). For example, an affiliation with the federal government sends a signal that an entrepreneur knows policies and how they evolve over time. Similarly, a relationship with a prestigious and established firm

signals business know-how. Finally, affiliations with different prestigious universities can signal quality education, competence, and superior knowledge. Taken together, we offer the following:

Hypothesis 2. As the number of prestigious affiliation types increase, so do the chances of crowdfunding success.

3.3. Digital orientation

There are ample theoretical and practical justifications that digital orientation impacts firm performance, establishes legitimacy, creates positive signals, and impacts funding. Despite its recency, strong evidence and theoretical developments have emerged. Indeed, the recent conceptualization and operationalization of digital orientation is directly related to firm performance (Kindermann et al., 2021). Previous findings and theoretical arguments are related to increased innovation, value creation processes, knowledge transfer, customer satisfaction, employee turnover, and financial performance (Arias-Pérez et al., 2021; Arias-Pérez & Vélez-Jaramillo, 2022; Khin & Ho, 2018).

In practitioner studies, digital technologies support value creation (Kindermann et al., 2021; Arias-Pérez & Vélez-Jaramillo, 2022), where roughly 90% of organizations across countries and industries expect digitalization and associated technologies to impact their business (Kane et al., 2015). As revealing, those more heavily involved expect an increase of revenue by nearly 50% and a customer value creation of over 40% (Gurumurthy et al., 2020) from digital orientation behaviors in the future. These practitioner studies showcase not only the public's understanding of digitalization, but also the importance of it. This is critical to legitimacy and subsequently, signaling theory. Indeed, legitimacy fuels expectations and creates valuable signals that indicate the match of expectations. In other words, if a society determines something to be true or important, it is (Berger & Luckmann, 2016). Therefore, sociocultural expectations should

be considered within crowdfunding narratives. Society determines what is acceptable and therefore what is legitimate and worth funding (Meyer & Rowan, 1977; Dimagio & Powell, 1981). Recently, society has agreed that people have entered the 'digital age' which creates expectations from the populous. We therefore expect the aforementioned underpinnings of digital orientation to send clear signals that allow funders to judge and rank order campaigns. Although patents or research alliances may serve as technology signals for more established businesses (Hoenig and Henkel, 2015), younger ventures without these advantages may still be able to leverage technology signals via digital orientation rhetoric.

Hypothesis 3. Rhetoric associated with digital orientation is positively related to crowdfunding success.

3.4. The interplay of signals

Entrepreneurs can experience positive outcomes by sending multiple signals (Huang et al., 2022). Though both prestigious and standard affiliations are expected to impact crowdfunding success, institutional economics argues that different forms of legitimacy act as substitutes for one another (North, 1990). Thus, following this principle, we argue that prestigious affiliation signals can act as a substitute for multiple general affiliations. That is, reaffirmation by multiple lesser-known affiliations can substitute for a low number of, or a lack of, types of prestigious affiliations. Similarly, a small number of different prestigious affiliations can substitute for many general affiliations. This is because prestigious affiliation signals have increased value, rarity, and cost to imitate. As multiple types of prestige are acquired, belief about legitimacy is enhanced and subsequently valuable, rare, and costly to imitate secondary signals are sent. The more valuable, rare, and costly to imitate, the more likely a funder is to focus on the signal, creating enhanced beliefs and causing funders to focus on one or two

dominant signals while ignoring others. However, in the absence of highly valuable, rare, and costly to imitate signals, funders look for reaffirmation of general affiliations to decrease information asymmetry and increase expectations about deliverability, product development, and venture creation. Thus, the following hypotheses is offered.

> **Hypothesis 4.** The number of affiliations and prestige interact to influence crowdfunding success. Specifically, prestige positively impacts crowdfunding success at a greater rate for those with fewer affiliations.

Critical to following digital orientation strategy is the management and organization of value-added networks. Understanding the needs and/or capabilities of other stakeholders within an entrepreneur's network is crucial. Such understanding "enables value-creating interactions between external producers and consumers" (Constantinides et al., 2018, p. 381). This also creates heterogeneity among network actors. Indeed, heterogeneous actors create ecosystems of innovative collaboration, co-create customers, and can act as complementors (Jacobides et al., 2018). These collaborations and coordinated efforts are fundamental to digitalization and create competitive advantages (Kindermann et al., 2021).

Furthermore, ventures can repurpose and utilize externally developed technological components. These digital components can then trigger automatic changes within the venture (Zittrain, 2006). In essence, digitally orientated ventures can use their network's technological capabilities to more effectively appoint their own responsibilities. They allow systems, processes, and structures to act dynamically in response to shifts in demand and have team members who are agents of change (El Sawy et al., 2016). Those with a digital orientation are thereby able to generate profits from the creative actions of external parties (Nambisan et al., 2019). Given the necessity of multiple affiliations for digital technology optimization, we expect

that association with others creates an enhancing effect. People familiar with digital technology realize that in order to play their favorite games or use a favorite app, two or more parties are required (e.g., using the Uber app on an iPhone). As such, legitimacy beliefs are maximized when there is both a greater number of affiliations and more signals sent from the underpinnings of digital orientation.

Hypothesis 5. The number of affiliations and digital orientation rhetoric interact to influence crowdfunding success. Specifically, digital orientation rhetoric positively impacts crowdfunding success at a greater rate for those with fewer affiliations.

4. Methods

We drew a sample of crowdfunding campaigns listed on Kickstarter from the platform's inception to 2017. Only campaigns from the product design, computer games, and technology categories were included. After removing projects that were canceled or suspended, 4,058 Kickstarter campaigns remained to form our sample. These campaigns raised between $0 and $6.3 million U.S. dollars. Just under half (45%) of the entrepreneurs in our sample succeeded in raising their goal amount.

4.1. Dependent variable

Our dependent variable, *crowdfunding success*, is a dichotomous variable consistent with prior work (Colombo et al., 2015). Performance was coded 1 if the campaign was successful (target amount was reached and funding was thereby received) or 0 if the campaign was unsuccessful (no funding was received).

4.2 Independent variables

We measure three independent variables within entrepreneurs' crowdfunding narratives. The first, *affiliation rhetoric*, is measured by developing and validating a dictionary to use in

computer-aided text analysis (CATA), a form of content analysis which employs validated dictionaries to measure the presence of constructs within written documents (Short et al., 2010). CATA has significant advantages compared to human coding, including greater speed, accuracy, and lower cost (Anglin et al., 2014). Following the guidance of Short and colleagues (2009) we used an iterative approach, which entails separate deductive and inductive procedures to ensure the construct is adequately captured. We began by defining the construct. Using Gulati's (1998) alliance definition, we classify affiliations, ties, networks, and alliances as voluntary arrangements between the crowdfunding entrepreneur and external entities involving exchange, sharing, or co-development of information, technologies, or products.

Next, we identified an initial set of key terms, guided by the theoretical literature on networks and alliances (e.g., Gulati, 1995). An exhaustive word list was derived from synonyms of the key terms (affiliation, ties, networks and alliances). We used a variation of the Thesaurus-Snowball technique (Werner & Schoepfle, 1987) using Rodale's Synonym Finder (1978), recording the most relevant synonyms (Short et al., 2010). Those words are then also looked up with their synonyms noted. This process continued until saturation was achieved, with few relevant words being identified in the final iterations. To avoid inflation of inter-rater reliability which can arise when many irrelevant words are retained to coding, two coders removed words not in the construct space before proceeding (no alpha was below 0.850). This resulted in a list of 420 words. Two coders rated each (alpha = 0.823). The coders then discussed and resolved any disagreements, resulting in a final deductive list of 174 words.

The DICTION CATA package was used to identify a list of 34,981 words that were used a minimum of three times in a 10 percent random sample of Kickstarter projects (8,746 projects). Of the 34,981 words, 610 were deemed at least somewhat similar to the Gulati (1998) definition

as determined by experts. Two raters determined that 143 of the 610 words were appropriate to add to the dictionary (alpha of .8164). Any disagreement was resolved through discussion with the construct of affiliation in mind. Of the 143 words, 48 were redundant and already in the deductive dictionary. Thus, the final inductive list comprises 95 words. The two lists were then combined and examined for stem word duplication, where a root word and several longer forms were present in the lists. Any duplications were removed. Lastly, any words that were too commonly used in the crowdfunding context were removed (e.g., backer or supporter), resulting in a final affiliation dictionary of 196 words. This dictionary was then used to calculate the presence of affiliation rhetoric in each entrepreneur's crowdfunding narrative.

To supplement the affiliation rhetoric dictionary, we compiled three additional lists which capture whether prestigious government, education, or industry entities are mentioned by name in each narrative. An association with a department of the federal government constitutes an association with a prestigious public institute. The government list was compiled from the General Services Administration's directory of federal agencies. Similarly, certain educational universities also represent prestigious organizations. Because of the great variation in reputation among schools, we began with a multi-source approach: U.S. News and World Report (e.g., Hitt, et al, 2001), The Princeton Review (Volkwein & Sweitzer, 2006), The Times Higher Education Supplement (Leung, 2007), and Shanghai Jiao Tong University, which provides another worldwide university ranking (Leung, 2007). Given our sample consists primarily of US entrepreneurs, we began by including US colleges or universities that appeared on all four lists and which had an average ranking across the lists no less prestigious than #50. This resulted in a list of 29 schools.

Third, we compiled an industry list for prestigious business firms. We began with five sources: the Russell 1000 index, Fortune's list of 'America's Most Admired Companies,' the Fortune 500, the S&P 500, and the Forbes Global 2000. We included only organizations that appeared on all five lists, and again due to the US focus of our sampled entrepreneurs, we included only US firms. This resulted in a preliminary list of 314 organizations. Two coders then independently compared the list to employment data for each firm. Firms that were low-reputation by virtue of being unlikely to be known to the general public were removed. Reliability was 0.816 (alpha). Resolution of disagreements resulted in a final list of 294 firms.

Each of the three lists representing prestige was run against the entrepreneurial narratives. Crowdfunding narratives are short. Accordingly, a prestigious mention was treated dichotomously. Finally, an index of prestige was calculated from the three preceding variables. This produced a range of zero to three, where a zero would indicate if a campaign had no prestigious affiliations and three if the campaign is affiliated with a federal government department, a prestigious school, and a prestigious organization. This index captures the fact that the reaffirmation of a legitimacy signal is likely to be stronger for diverse affiliations over multiple similar signals of legitimacy.

4.3. Control variables

For controls, we employ Colombo and colleagues' (2015) project characteristic variables. First, we controlled for the natural log of goal *(goal*) as the amount of funding requested "provides a signal regarding the quality of the project" (Josefy et al., 2017, p. 170). We also controlled for project category as in previous literature (Mollick, 2014), given differing rates of success across sectors. Next, we controlled for the use of visuals: we combined the use of videos and images in the project description into a single binary variable (*use of visuals*). Previous

research has indicated that use of visuals is correlated with crowdfunding success since it is compelling to funders and indicates greater commitment and effort from the entrepreneur (Josefy et al., 2017). We also controlled for the duration of the campaign (*duration*), which has been linked to crowdfunding success (Mollick, 2014). Since foreign projects are often atypical compared with those in the United States (Li et al., 2017), we created a variable (*currency*) to control for projects raising funds in currencies other than US Dollars. Finally, we controlled for the count of frequently asked questions (*FAQ*), which has been shown to increase crowdfunding success (Kunz et al., 2017).

5. Results

Means, standard deviations, and correlations are presented in Table 1. To test our hypotheses, we conducted a series of logistic regression analyses. Table 2 provides the results for these analyses. Specifically, Models 1-4 of Table 2 show the direct effects while Models 5 and 6 show the interactions.

INSERT TABLES 1 AND 2 HERE

5.1. Results of Hypotheses

In Table 2, Model 1 and Model 4 reveal a positive and significant relationship between affiliation rhetoric and crowdfunding success. This provides support for Hypothesis 1. Hypothesis 2 suggests that as the number of prestigious affiliation types increase, the chances of crowdfunding success also increase. In both Model 2 and Model 4, we find that the number of prestigious types of affiliation is positive and significant in predicting whether a crowdfunding campaign will be successful. Hypothesis 2 is therefore supported. To better illustrate this relationship, Figure 2 displays the differences in average funding success based on the types of prestigious affiliations that are included in campaign narratives. Next, Models 3 and 4 both show

a positive and significant relationship between digital orientation rhetoric and crowdfunding success. Thus, hypothesis 3 is supported.

INSERT FIGURE 2 HERE

Model 5 in Table 2 tests the joint impact of affiliation rhetoric and prestige of crowdfunding success. The interaction term is significant ($\beta = -0.040$, $p < 0.01$) and the relationship is depicted in Figure 3. As seen in Figure 3, campaigns are unable to completely substitute a low level of prestige with a high level of more generic affiliation rhetoric. In other words, we expected the slope for low affiliation rhetoric to be steeper. Thus, although the interaction term is significant for hypothesis 4, we cannot claim support.

INSERT FIGURE 3 HERE

Finally, Model 5 in Table 6 shows a significant interaction term for affiliation rhetoric and digital orientation ($\beta = -0.002$, $p < 0.01$). As shown in Figure 4, a substitution effect exists in that entrepreneurs using high levels of digital orientation rhetoric experience similar levels of success regardless of affiliation rhetoric. At low level of digital orientation rhetoric, however, entrepreneurs succeed more through heavy use of affiliation rhetoric. Hypothesis 5 is therefore supported.

INSERT FIGURE 4 HERE

5.1. Robustness Checks

Since two of our independent variables are composites, we ran additional analyses to test the impact of the individual components that make up both prestige and digital orientation. Specifically, for prestige, we ran logistic regression analyses using prestigious government, university, and industry affiliations as independent variables. Each of the three variables were

found to be statistically significant and positively related to crowdfunding success, providing additional reliability to our prestige measure.

Next, we ran another series of analyses to determine which digital orientation components drive crowdfunding success. In separate models, each of the four components were found to be statistically significant drivers of crowdfunding success. However, when the components were all placed in a model together, only digital architecture configuration and digital capabilities were found to be statistically significant ($p < 0.01$). It is possible that our research design explains why digital ecosystem coordination and digital technology scope were not significant. First, the Kickstarter environment may be too homogenous of a sample for digital ecosystem coordination to make an impact. Its importance is likely greater in studies involving a wide range of platforms. Second, digital technology scope may not have been significant since our sample only included highly technical campaigns. Thus, it is possible that campaigns in our sample were already assumed to have a digital technology scope, and any rhetoric reinforcing this notion had little impact.

6. Discussion

This research joins previous efforts to examine how affiliations, ties, networks, and alliances aid in determining crowdfunding success (e.g., Colombo et al., 2015). Past studies have primarily looked at campaign or social media statistics (e.g., number of Facebook friends, number of previously backed campaigns). Extending this work, we use computer-aided text analysis to better understand how affiliations (e.g., prestigious schools, federal government departments, and prestigious organizations) influence crowdfunding success. In doing so, this paper contributes to this literature in four ways.

6.1. Contributions

First, we examine self-identified affiliations highlighted by the entrepreneurs themselves and find that these send valuable signals thereby positively influencing funding decisions. This is in concurrence with previous entrepreneurial literature that highlights the importance of affiliations for new ventures, since affiliations represent the potential for resource accumulation and provide an endorsement of quality (Sanders & Boivie, 2004) and product or reward deliverability. Affiliations also lead to increased new venture performance and survival (Fischer & Pollack, 2004), where external ties enhance the chances of survival by producing credibility, support, contacts, references, a positive image, and access to resources (Ostgaard & Birley, 1996) and are necessary for existence and survival. As such, this work extends upon findings about networks in the crowdfunding context (e.g., Colombo et al., 2015).

Second, this research enhances knowledge by examining the role that prestigious institutions play in crowdfunding success. Specifically, we find that as the number of diverse types of prestigious affiliations increase, so does the likelihood of crowdfunding success. This supports the notion that as valuable signals become more unique and costlier to imitate, they become important predictors of crowdfunding success regardless of other affiliations. Taken together, our results suggest that the number of affiliations as well as the number of distinct prestigious institutions mentioned lead to crowdfunding success. The robustness check results also support the notion that affiliations with federal government departments, top universities, and prestigious companies increase the probability of crowdfunding success. That is, these prestigious institutions are able to send valuable signals that are rare and costly to imitate, which increase the probability of crowdfunding success.

Third, our work examines the interaction effect between the number of affiliations and prestige. The interaction is significant, where prestige matters more for those with a low number

of affiliations. However, contrary to our expectations, no substitution effect was found. Instead, our results suggest that having a high number of generic affiliations is more important than the prestige of limited affiliations. Stated differently, in regards to affiliations, quantity appears to be more influential than quality. This is consistent with the notion that the number of network ties is more important than the strength of the ties (Granovetter, 1973).

Finally, we contribute to the entrepreneurship literature by examining how a founder's digital orientation might influence fundraising success. There is scant literature which examines how firms benefit from a digital orientation (Kindermann et al., 2021) and even less exists within the context of new ventures. We therefore fill a research gap by showing the benefits of displaying digital orientation rhetoric within crowdfunding—a social phenomenon which takes place almost exclusively on digital platforms. As expected, our results suggest that campaigns with high levels of digital orientation rhetoric are more likely to succeed. As displayed in Figure 4, using digital orientation rhetoric can be especially beneficial for entrepreneurs with few affiliations, as doing so helps to signal technological capabilities (Kindermann et al., 2021) which can act as a substitute for new ventures that have yet to establish vast affiliation networks. This work supports the idea that verbiage can align expectations and doing so creates legitimacy. In turn, the matching of societal expectations greatly increases the chances of funding. Thus, our study aligns with and supports current research in crowdfunding regarding social expectations theory (e.g., Cowden et al., 2021).

6.2. Limitations and future research

Despite these contributions, our research is not without limitations. First, as noted by other scholars, our CATA method involves trade-offs to human coding (Short et al., 2010). Yet, by following best CATA practices, particularly those used by scholars in the entrepreneurship

domain (Short et al, 2009; McKenny et al., 2013), we believe that we have achieved a reasonable balance between the advantages and disadvantages of CATA relative to traditional content analysis.

Second, in this study, we made the choice to focus on affiliation rhetoric and entrepreneurs' identification of prestigious affiliations. However, it is likely that in addition to the signaling value of affiliations, human, social, and other capital gained through the affiliation also has influence on entrepreneurial performance (Roma et al., 2021). Despite this, we believe our study design uncovers signaling effects for several reasons. First, our theory accommodates this expected relationship. Indeed, signaling theory leads us to expect that those with the signal have higher ability or quality. Given this expectation, our entrepreneurial phenomenon of resource acquisition is also salient to weighing the potential threats to the study. Further research would lead us to expect higher performance for those displaying an affiliation signal. We would expect this to be most pronounced for long-term performance outcomes (e.g., survival, growth). In contrast, prior work in fundraising, and crowdfunding in particular, suggests that while familial ties or friendships are associated with better funding outcomes (e.g., Agrawal et al., 2010), there is no reason to believe that general affiliations would have nearly the same effect, especially over the short time-frames involved in crowdfunding.

Finally, the crowdfunding context itself also plays a role in limiting possible unmeasured variable effects arising from affiliations. Certainly, we would expect some affiliated entrepreneurs to have better prepared for their crowdfunding campaign than others. However, prior research suggests that the key factor in crowdfunding outcomes is driving people to the webpage. While a small number of affiliations might feature the close ties to facilitate this, most do not. Thus, given the limiting factor of attracting attention, it is reasonable to expect that we

are observing the signaling effect of displaying affiliations, in the form of affiliation rhetoric as well as prestigious affiliations. Nevertheless, future research focused on separating such possibilities, perhaps through laboratory experiments, would be welcomed. Future research could also further examine the impact of organizational institutions. For instance, whether job titles or positions have a varying effect on crowdfunding success within similar status organizations would add incremental value to this research stream.

6.3. Conclusion

This study extends the venture finance research stream. We offer entrepreneurs insight into how they can frame campaigns to attract the maximum amount of support. As such, in addition to considering networks, entrepreneurs should consider developing affiliations and leveraging them in crowdfunding campaigns, particularly those from prestigious educational institutions, companies, and federal departments, as they bring legitimacy to the campaign. Lastly, for entrepreneurs with low levels of affiliation, our research suggests that using language reflecting a digital orientation might help to overcome this disadvantage.

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TABLES AND FIGURES

Table 1

Descriptive Statistics - Means, Standard Deviations (S.D.), and Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1 Crowdfunding Success	0.45	0.50	-									
2 Goal	9.11	1.80	-0.24**	-								
3 Category: Computer Games	0.37	0.48	0.07**	-0.17**	-							
4 Category: Technology	0.46	0.50	-0.12**	0.22**	-0.72**	-						
5 Use of Visuals	0.85	0.36	0.15**	0.06**	0.02	0.04*	-					
6 Duration	33.88	11.21	-0.09**	0.21**	-0.11**	0.12**	-0.01	-				
7 Currency	0.74	0.44	-0.00	0.01	0.16**	-0.24**	-0.10**	-0.00	-			
8 FAQ	1.44	3.65	0.27**	0.18**	-0.09**	0.13**	-0.03	0.04*	-0.03*	-		
9 Affiliation	3.12	4.30	0.17**	0.24**	-0.11**	0.17**	-0.08**	0.06**	-0.07**	0.24**	-	
10 Prestige	0.32	0.53	0.10**	0.12**	-0.02	0.06**	-0.01	0.01	-0.02	0.15**	0.31**	-
11 Digital Orientation	8.82	14.83	0.13**	0.20**	-0.26**	0.38**	-0.09**	0.08**	-0.11**	0.26**	0.53**	0.31**

Note: N = 4,058

*p<0.05; **p<0.01

Table 2

Results of Logistic Regression Analysis for Crowdfunding Success

	Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Constant	4.560**	4.313**	4.502**	4.628**	4.592**	4.654**
	Goal	-0.437**	-0.386**	-0.407**	-0.447**	-0.450**	-0.459**
	Category: Computer Games	-0.277**	-0.263**	-0.264**	-0.294**	-0.303**	-0.303**
	Category: Technology	-0.867**	-0.760**	-1.034**	-1.019**	-1.032**	-1.080**
	Use of Visuals	-0.877**	-0.938**	-0.887**	-0.870**	-0.866**	-0.874**
	Duration	-0.007*	-0.007†	-0.008*	-0.007*	-0.007*	-0.008*
	Currency	-0.121	-0.165	-0.140	-0.116	-0.114	-0.113
	FAQ	0.316**	0.329**	0.317**	0.308**	0.307**	0.304**
H1	Affiliation (A)	0.116**			0.087**	0.112**	0.119**
H2	Prestige (P)		0.420**		0.157*	0.315**	0.128†
H3	Digital Orientation (D)			0.030**	0.017**	0.017**	0.032**
H4	A x P					-0.040**	
H5	A x D						-0.002**

Note: DV = Crowdfunding Success

N = 4,058

†p < .10; *p<0.05; **p<0.01

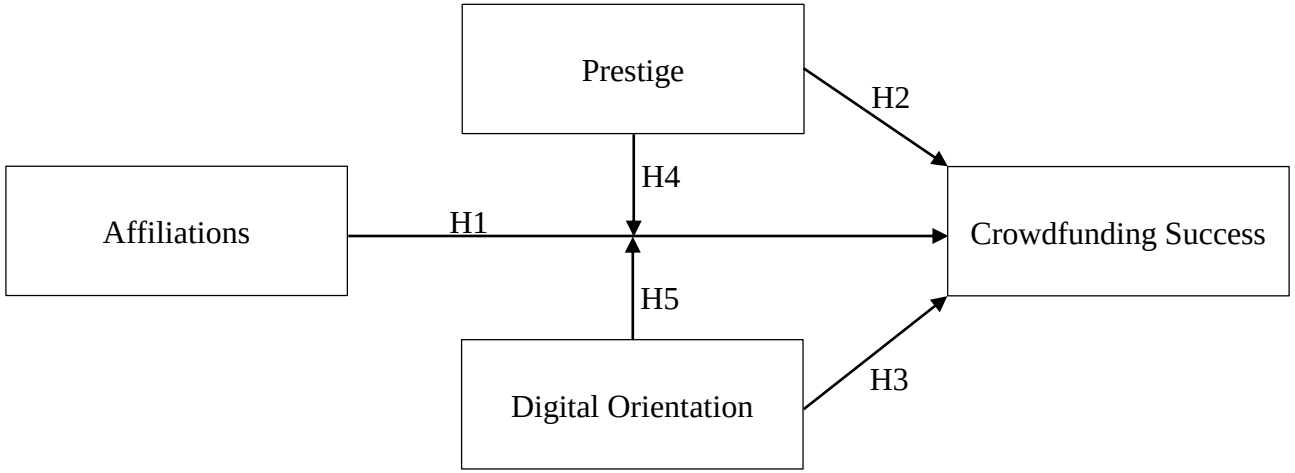

Figure 1. *Conceptual Model*

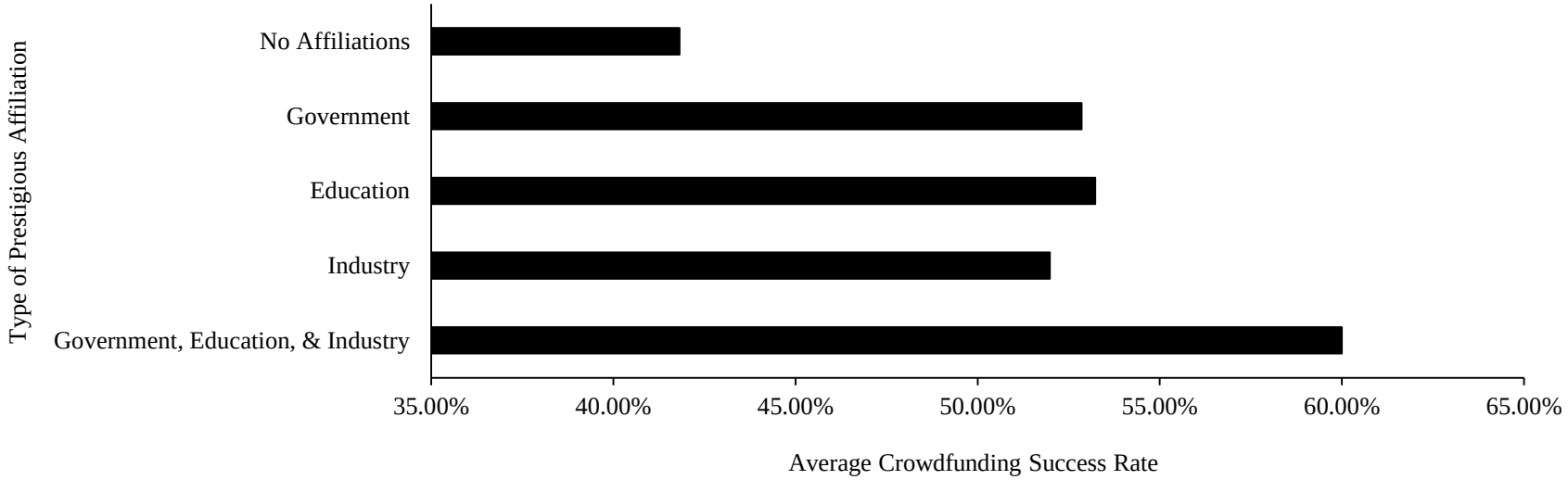

Figure 2. *Crowdfunding success rates per type of prestigious affiliation*

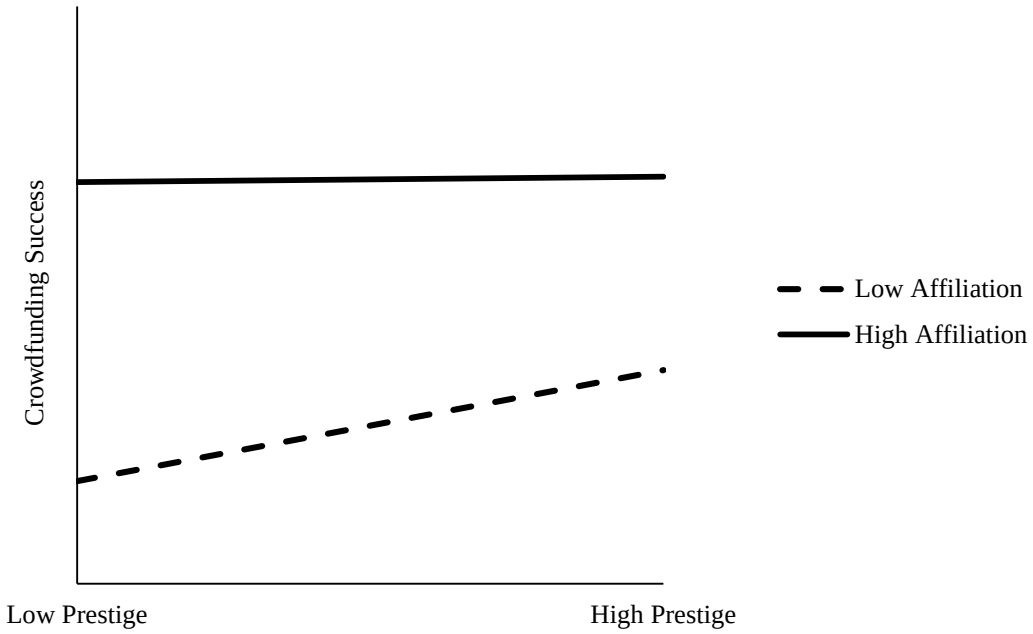

Figure 3. *Prestige x Affiliation Interaction*

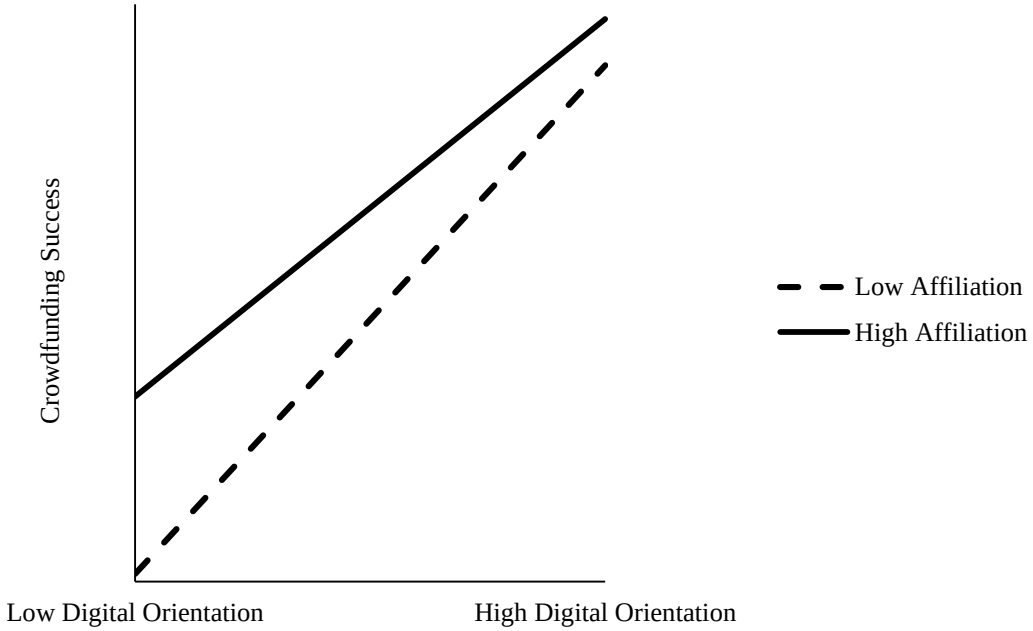

Figure 4. *Digital Orientation x Affiliation Interaction*