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ELECTRONIC WORD-OF-MOUTH AND THE CROWDFUNDING ENVIRONMENT: A STORE ENVIRONMENT APPROACH TO CROWDFUNDING SUCCESS

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ELECTRONIC WORD-OF-MOUTH AND THE CROWDFUNDING ENVIRONMENT: A STORE ENVIRONMENT APPROACH TO CROWDFUNDING SUCCESS

A DISSERTATION APPROVED FOR THE
MICHAEL F. PRICE COLLEGE OF BUSINESS

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To my father, my role model and the person I always wanted to be when I grew up. To my husband, my stalwart support during any storm, who loves me for who I am rather than anything I could do. Most of all, to my mother. You are my inspiration, my prayer warrior, my daily encouragement, and the best MIS researcher the fine arts has ever seen. God blessed me beyond measure by giving me each of you.

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Abstract

Crowdfunding has transformed the new venture financing process by expanding the possibilities for not only who can receive funding but also who can become a funder in new venture projects. Rewards-based crowdfunding platforms such as Indiegogo.com offer individuals a "reward" in return for their contribution. The rewards-based crowdfunding environment is imbued with aspects of both new venture funding and internet-based consumer purchasing. A funder may hope to obtain a valued commodity in return for their contribution to a crowdfunding project. Yet, the uncertainty associated with the outcomes requires the funder to infer quality by considering the viability of the project plan and the abilities of the project team. Building upon the complementary perspectives of a rewards-based crowdfunding contribution as both an investment and a purchase, I use the store environment model from the consumer behavior literature as a lens for identifying the informational cues project teams use to convey the worth of their project to funders. Since crowdfunding relies on the interaction of the community, I draw from research on electronic word-of-mouth (eWoM) and social media to understand how social media "buzz" can act as a social cue within the crowdfunding environment, transforming the nature of the message conveyed by the project team. My findings indicate that crowdfunding environment does impact the total amount received for a project, alone and in tandem. More importantly, the type of cue matters; design cues (vividness and structuredness) work best when combined with other design cues and social cues (project team cues and social media "buzz") work best with other social cues. First, vividness matters –particularly when combined with a well-structured text. Next, neither project team attributes not community discourse matter in isolation, but in

combination they do. Finally, too much social media "buzz" has a negative effect on funding, particularly later in the campaign. My research presents the store environment model as a valuable lens for understanding crowdfunding outcomes. By illuminating the complementarities between the new venture financing and internet-based consumer purchasing perspectives of crowdfunding, I utilize a more comprehensive application of the store environment model than has been employed in online contexts previously and present social media eWoM (i.e. social media "buzz") as a social cue having a significant impact in online store environments and the rewards-based crowdfunding environment in particular. I also highlight the importance of eWoM, in the form of social media "buzz," as an indirect force on organizational outcomes, acting in tandem with other environment cues and differentially over time.

Chapter 1: Introduction

The crowdfunding phenomenon has recently garnered a great deal of public interest for having the potential to overcome the "funding gap" small businesses experience in raising capital (Macht and Weatherston 2014). Crowdfunding, *"the practice of funding a project or venture by raising many small amounts of money from a large number of people, typically via the internet"* (Prive 2012), provides a new take on venture financing with a transformative impact on the how capital is raised for new ventures. With the advent of multiple crowdfunding sites, the select and somewhat narrow slice of entrepreneurs eligible to receiving venturing financing has expanded considerably. In particular, crowdfunding sites have the unique ability to serve both venture startups and small businesses who would be unable to obtain – be it due to lack of credit, operating experience or track-record – small business loans or financing via a traditional venture capitalist firm (Stemler 2013).

Yet, the crowdfunding phenomenon not only transforms who can receive funding but also who can become a funder in new venture projects. Unlike traditional venture funding, which limits potential contributors to a small set of venture capitalists investing large amounts, crowdfunding allows a large set of individuals to participate in a new venture by contributing small amounts. In recent years, a diverse group of crowdfunding platforms has emerged, catering to the varied motivations and goals of the funding community. Crowdfunding platforms differ based upon the nature of the investment projects, ranging from non-profit fund-raising to equity-based investment opportunities. At one end of the spectrum are micro-lending or angel investment platforms, such as Kiva.org. These platforms allow funders to contribute funds toward altruistic projects

where the crowdfunding platform serves as a loan provider to individuals or groups who would otherwise be ineligible for a bank loan. On the other end of the spectrum are equity-based crowdfunding platforms, which more closely mimic the traditional venture financing environment. Unlike traditional venture financing, in which a small number of investors contribute large amounts toward funding a new venture project, these platforms provide a large number of investors the opportunity to contribute small amounts of money in return for equity in a new venture project. Perhaps the most popular crowdfunding platforms, and the focus of this study, are those which offer rewards or "perks" to funders in return for their financial contribution to the project. Rewards-based crowdfunding includes such platforms as Indiegogo.com and Kickstarter.com. In return for a small contribution of funds, funders receive rewards, which can be as minimal as a thank you note or a t-shirt or as valuable as a prototype of a new technological gadget.

While varied motivations and goals may play a role in which type of crowdfunding an individual participates in, once chosen, the environment offered by the crowdfunding platforms serves to influence those funding decisions. Rewards-based crowdfunding campaigns are unique in that they share similarities with both venture financing and traditional e-commerce (i.e. internet-based purchasing) transactions (Thies and Wessell 2014). The asymmetric information associated with new ventures results in a decision-making environment that requires funders to infer quality about a venture based upon information cues communicated by the venture team (Busenitz, Fiet and Moesel 2005). The financial risk involved in such investment increases the cognitive load for determining which venture to fund. On the other hand, the lower financial risk associated with rewards-based crowdfunding encourages more impulsive decisions,

suggesting that this type of crowdfunding may have associations more closely relating to internet-based consumer purchasing than venture financing (Aggarwal, Gopal, Gupta and Singh 2012).

This combination of new venture uncertainty with lowered funding risk provides us with an environment that is imbued with aspects of both new venture funding and internet-based consumer purchasing (Figure 1). In other words, contribution to a rewards-based crowdfunding project can be viewed as both an investment and a purchase. Similar to a traditional consumer purchase, a consumer may hope to obtain a valued commodity in return for their contribution to a crowdfunding project. Yet, the outcome is not sure. Projects may or may not receive the funding needed in order to follow through on the ideas proposed by the project team. Thus, funders must also take into consideration the potential viability of the project plan and the abilities of the project team (Busenitz et al. 2005) to determine whether or not the outcomes will result in a return for their contribution. In these terms, a funder's role is expanded beyond that of a consumer of the product to that of investment support (Ordanini, Miceli, Pizzetti and Parasuraman 2011).

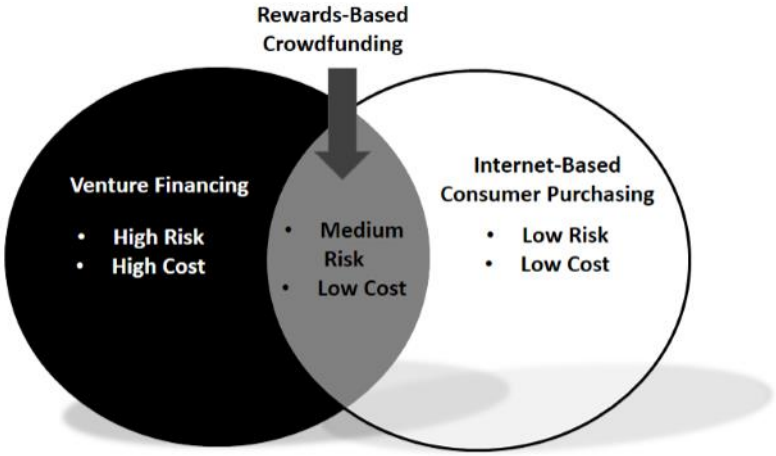

Figure 1: Rewards-Based Crowdfunding

The nascence of this phenomenon has left us with more questions than answers to date. A great deal of discussion, yet very little theorizing or empirical work, regarding the nature and impact of this environment on new venture financing has emerged in both practice and academia (e.g. Macht and Weatherston 2014; Mollick 2014). While a similar stream of research on crowdsourcing – using the crowd to generate content, ideas, feedback and solutions – has begun to investigate factors influencing the success of crowdsourced initiatives (e.g. Ma and Agrawal 2007; Oreg and Nov 2008), the transaction nature of crowdfunding (i.e. contributing money and receiving a commodity in return) opens up room for a different theoretical perspective. The similarities that rewards-based crowdfunding has to both investment and purchasing make for a complex and intriguing context for studying behavior and decision-making. Whereas the purchase aspect may be viewed in terms of the quality of the project deliverable, the investment aspect suggests that given information asymmetry regarding the quality of a project, funder decisions could be based on a broader range of cues as funders also gather information regarding the capabilities of the project team. Yet, above and beyond these two aspects, crowdfunding embodies a social interaction in which both the actions and involvement of the community impact outcomes.

To date, crowdfunding has been studied in a narrow context, viewing the *crowd* as composed of project funders. Looking at the crowdfunding environment from a broader perspective, this research undertakes to understand the multiple influences on crowdfunding outcomes, made up of not only funders but also project teams and interested bystanders. Each can influence outcomes individually and collectively:

founders by how they present their project on the crowdfunding site and in the general discourse, funders through how engaged they are with the project, and interested bystanders by the extent to which they add to the discourse about the project.

Research Questions

My research draws from theory in consumer behavior to investigate how cues communicated by crowdfunding project teams act as stimulus to influence funders' financial contributions to crowdfunding projects. Research in this area, beginning with Mehrabian and Russell's stimulus-organism-response (S-O-R) theory, has long posited that individual's decision-making processes (organism) and behaviors (response) are influenced by cues (stimulus) in the environment. Emerging from this, a stream of literature has focused on how these stimuli, or cues, from the store environment influence consumer behaviors. I use this store environment model as a lens for identifying how the crowdfunding environment offers project teams the ability to provide cues that serve to inform, enable, and motivate funders to choose to fund their project out of the choices available.

Also, I use concepts from the literature on social media and electronic word-of-mouth (eWoM) to understand how social media "buzz" serves as an additional type of cue in influencing project funding success. Much of the literature on entrepreneurial communication focuses on the organization as the designer and controller of messages about the organization (Fischer and Reuber 2014). Yet, crowdfunding gives new meaning to the phrase "wisdom of the crowd." Not only is the crowd ultimately responsible for the successful funding of a project, but the control over communication about the project is no longer solely in the hands of the crowdfunding project team. Focusing on how these

aspects of the rewards-based crowdfunding environment influence project outcomes, I ask the following research questions:

RQ1: How do crowdfunding project cues, alone and in tandem, impact funding success?

RQ2: How does electronic word-of-mouth, in the form of social media "buzz", impact funding success?

Considering the fast-paced nature of crowdfunding as a technology-supported environment and the on-going visibility of these cues across the duration of a crowdfunding project campaign, I also consider how the on-going communication through eWoM (i.e. social media "buzz") may have a differential impact across the campaign duration. Thus, I also ask:

RQ3: How does time impact the relationship between crowdfunding project cues, social media "buzz" and funding success?

In answering these questions, I contribute to theory-building in the crowdfunding literature by illuminating the complementarities between the new venture financing and internet-based consumer purchasing perspectives of crowdfunding. In doing so, I utilize a more comprehensive application of the store environment model than has been employed in online contexts previously and present social media eWoM (i.e. social media "buzz") as a social cue having a significant impact in online store environments. I also highlight the importance of social media "buzz" as an indirect force on organizational outcomes, acting as a strategic game-changer in the transmission of information about the quality of a business investment. While eWoM has been studied extensively in online environments, the literature has not considered its effects in light of other store

environment cues in the store environment model. Particularly, I focus on eWoM in the form of social media "buzz," which provides a visible cue of the volume of community discourse without reference to the content of the discussion. Additionally, although researchers have studied the impact of eWoM over time in both internet-based consumer behavior and venture financing, to date no empirical studies have observed these effects in the crowdfunding context. In doing so, I investigate the impact of time not only on how social media "buzz" may influence crowdfunding outcomes directly, but also in coordination with other crowdfunding project cues.

Dissertation Organization

In the following chapter, I provide a review of the research in the crowdfunding context and an overview of the literature on store environment cues and electronic word-of-mouth. I then present my proposed research model and hypotheses development, building a model of crowdfunding success using design and social cues from the store environment model and introducing social media "buzz" as a type of technology-enabled social cue. In the subsequent chapters, I outline my research design and present the results of the statistical analyses used to test my hypotheses. Finally, I conclude with a discussion of my findings, limitations of my study, and the expected theoretical and practical contributions of my work.

Chapter 2: Literature Review

Crowdfunding Research

The surge of activity in crowdfunding, and the expected potential of crowdfunding to transform multiple business processes as we know them (Mac 2014; Perlberg 2014), has begun to draw broad academic interest in the phenomenon. A small, but expanding stream of literature has focused not only on explaining why individuals and organizations participate in crowdfunding as either a project creator or funder (Gerber and Hui 2013; Ordanini et al. 2011) but also on what factors lead to success in crowdfunding projects (e.g. Burtch et al. 2013; Mollick 2014). Table 1 provides an overview of key research on crowdfunding to date.

Recent exploratory and empirical work in the crowdfunding context has identified a variety of contrasting factors that play a role in the successful funding of projects. In an exploratory study using projects from the Kickstarter.com platform, Mollick (2014) found that, despite the differences in experience and knowledge, crowdfunding backers tend to act like venture capitalists by evaluating potential projects using information cues that identify projects of high quality. Similarly, Burtch, Ghose and Wattal (2013) found differential impacts of signals of high and low quality on funder behaviors. Pulling from the venture finance literature to frame their investigations, other studies have focused on the impact of individual factors on crowdfunding success, such as geography (Agrawal, Catalini and Goldfarb 2011), promotional campaigns (Lu, Xie, Kong and Yu 2014), and project founder activity (Xu, Yang, Rao, Fu and Bailey 2014). These studies provide empirical support for mindful, objective decision-making processes by crowdfunding

project funders and highlight the role of project cues serving as stimuli for funder behavior.

In contrast to studies conducted in traditional venture financing environments (e.g. Bangerter, Roulin and Konig 2010; Busenitz et al. 2005), which account for social influence as peripheral to the investment decision-making process, crowdfunding studies have emphasized the importance of social factors in the success of online crowd-based financing. The technological capabilities of crowdfunding platforms allow both project founders and funders to easily become aware of and interact with the community at large. The ability of technological platforms to support social interactions has already been seen in related areas. Social capital has been related to the likelihood of receiving peer-to-peer loans (Lin, Prabhala and Viswanathan 2009). In the crowdfunding literature, both Mollick (2014) and Burtch et al. (2013) found that social networks and community contribution patterns had a significant impact on funders' decisions. Similarly, Zheng, Li, Wu and Xu (2014) compared the influence of project team social media related activities on crowdfunding outcomes across Chinese and American platforms. These studies provide support for subjective assessment by crowdfunding project funders, in which the decisions of the community appeared to sway the opinion of potential funders beyond that of the objective cues of project quality. However, despite the focus on social activity by the project team and the contribution decisions by other funders, a noticeable gap exists in the literature in understanding the social influence of the community discourse. The potential influence of community discourse opens up a new avenue for exploring crowdfunding decision-making by viewing electronic word-of-mouth from the perspective of the store environment model.

Table 1: Review of Crowdfunding Literature			
Citation	**Overview**	**Sample**	**Findings**
Agrawal et al. (2011)	Exploratory analysis on the role of geography in crowdfunding success.	34 projects on SellaBand, a rewards-based crowdfunding platform for musicians based out of Amsterdam.	Findings show a difference between investment practices of local and distant investors. Local investors are less likely to be influenced by capital raised.
Ahlers et al. (2012)	Empirical testing of theoretical model, based upon signaling theory of firm characteristics on crowdfunding success.	104 projects on ASSOB, an equity-based crowdfunding platform in Australia.	Findings show that firms' financial roadmap, risk factors and internal governance significantly influence crowdfunding success.
Belleflamme et al. (2012)	Conceptual paper, based upon signaling theory, offering a comparison between rewards-based and equity-based crowdfunding		Propositions are developed regarding which method is chosen by entrepreneurs.
Burtch et al. (2013)	Empirical examination, focused on crowdfunding as "public good", of the effect of contribution patterns on funding and subsequent project outcomes	100 projects on an altruistic crowdfunding platform focused on journalism	Findings show that initial marketing efforts and funding durations significantly affect funding and completion success. Greater contribution will discourage later contributor in altruistic settings.
Colombo et al. (2015)	Empirical examination, based upon social capital theory, to investigate the impacts of internal social capital on crowdfunding success.	669 projects from rewards-based crowdfunding platform Kickstarter.com	Findings show that internal social capital via early contributions serve as a self-reinforcing mechanism to accelerate crowdfunding success.

Table 1 (Continued): Review of Crowdfunding Literature			
Citation	**Overview**	**Sample**	**Findings**
Gerber and Hui (2013)	Grounded theory examination for motivators and deterrents for creating and investing in crowdfunding projects.	83 interviews from rewards-based crowdfunding platforms Kickstarter.com, RocketHub.com and Indiegogo.com	Design principles are suggested based upon a list of motivators and deterrents identified as impacting crowdfunding participation.
Ingram et al. (2014)	Case study identifying how technology affordances shape institutional logics at work in crowdfunding platforms	20 interviews from actors involved in the Swedish crowdfunding community	Findings suggest that technological affordances expected by entrepreneurs spurred crowdfunding platforms to change the technology to fit existing institutional logics espoused by the community rather than promote new logics.
Jian and Usher (2014)	Empirical examination, based upon uses and gratifications theory, of motivations for crowdfunding contribution.	234 projects from Spot.us, an altruistic crowdfunding platform focused on journalism and survey data for 371 Spot.us donors	Findings show that stories offering guidance rather than awareness are more likely to receive funding
Kuppuswamy and Bayus (2013)	Empirical examination, using distribution of responsibility theory, investigating contribution patterns in crowdfunding	25,058 projects from rewards-based crowdfunding platform Kickstarter.com	Findings show that additional backer support is negatively related to previous backer support. Project deadlines diminish the negative relationship.
Lu et al. (2014)	Empirical examination of effects of promotional campaigns and social media activities influence crowdfunding success	1,521 projects from rewards-based crowdfunding platform Kickstarter.com; 62,473 tweets from Twitter.com	Findings find relationships between early promotional activities and project success.

Table 1 (Continued): Review of Crowdfunding Literature			
Citation	**Overview**	**Sample**	**Findings**
Mollick (2014)	Exploratory study identifying factors that impact crowdfunding project success	48,500 projects from rewards-based crowdfunding platform Kickstarter.com	Findings show that personal networks, quality signals, and geography impact crowdfunding project success.
Ordanini et al. (2011)	Grounded theory case study examining motivators for creating and investing in crowdfunding projects.	3 cases, from crowdfunding platforms SellaBand (rewards-based), Trampoline (equity-based), and Kapipal (altruistic)	A model of crowdfunding motivators is developed, describing factors such as characteristics, roles, and networks for crowdfunding participants
Pitschner and Pitchner-Finn (2014)	Empirical comparison of for-profit and non-profit crowdfunding projects.	50,861 projects from rewards-based crowdfunding platform Kickstarter.com	Findings show that while non-profit projects are more likely to reach their funding goals, the for-profit projects tend to have more funders and larger funding goals
Xu et al. (2014)	Qualitative study developing a taxonomy of crowdfunding project updates, and quantitative analysis showing impact of each type on crowdfunding project success	8,529 projects from rewards-based crowdfunding platform Kickstarter.com	Findings identify 7 types of updates and find differential effects for the type of update and a stronger impact of updates on success than the project presentation itself.
Zheng et al. (2014)	Empirical study, based upon social capital theory, comparing social network influences on crowdfunding projects in China and the United States	607 projects from Kickstarter and 310 projects from Demohour, rewards-based crowdfunding platforms in the United States and China, respectively.	Findings show significant impacts of 3 types of social capital on crowdfunding project success. Additionally, differences are found across cultures.

Store Environment

Empirical research on the impact of store environment cues has looked at both individual cues (e.g. Areni and Kim 1993; Bellizi, Crowley and Hasty 1983) and the general environment (Darden and Schwinghammer 1985; Donovan and Rossiter 1982) on customer purchase intentions. Donovan and Rossiter (1982) are credited with adapting Mehrabian and Russell's (1974) S-O-R model to the retail environment, finding that store environment stimuli do impact consumer's approach and avoidance behaviors toward the store. Similarly, Baker, Parasuraman, Grewal and Voss (2002) modified the S-O-R model to identify how environmental cues impact perceptions of "store choice" criteria. These criteria, such as perceptions of quality of service and of merchandise are shown to impact purchase intentions. Within this stream of literature, categorization of store environment cues provided a model for understanding the different types of cues which might impact consumer attitudes and behaviors. In general, three broad categories were commonly considered in terms of their impact on consumer senses through visual appeal (design cues), social awareness (social cues) or other senses such as smell or touch (ambient cues) (Baker 1987).

More recently, researchers in the information systems literature have taken the ideas from research on brick-and-mortar stores and applied the principles of store environment to online shopping (e.g. Eroglu, Machleit and Davis 2003; Floh and Madlberger 2013). This transition to online contexts embraces the idea that "a mediated environment may offer consumers a certain type of experience, which can be used for setting the stage or creating a context that promotes or sells related products and/or services." (Adelaar, Chang, Lancendorfer, and Morimoto 2003: 248) The study of store

environment cues in an online setting, often called "web atmospherics" or "online atmospherics," can be defined as "the conscious designing of web environments to create positive effects in users in order to increase favourable consumer responses" (Dailey 2004: 796).

Within the past two decades, researchers have identified a broad range of technological cues that impact consumer behaviors and perceptions of online stores, resulting in multiple categorizations of these cues specific to the online environment. Table 2 provides a summary of store environment cue categorizations used in physical and online store environment studies. For instance, in a highly cited survey study, Ranganathan and Ganapathy (2002) identified which cues matter to consumers. Of these, content, design (or layout), security and privacy were discussed as key categories of cues impacting consumer intention to purchase online. Along these lines, multiple studies have focused on website design cues in terms of layout, security, and product presentation as indicators of website quality. Wells, Valacich and Hess (2011) found that cues of website quality – operationalized as navigability, security, download delay, and visual appeal – sent signals about product quality to consumers in an environment of information asymmetry. Similarly, de Wulf, Schillewaert, Muylle and Rangarajan (2006) found that the organization, the content displayed, and the technology used in a website can positively impact user satisfaction. In this study, cues related to website content and technology both resulted in increased consumer satisfaction and commitment, whereas organization of the website had less impact on commitment. Liang and Lai (2002) more formally categorized cues of website quality as motivation (search engine), hygiene (security) and media richness (multiple information channels). Altogether, the best

designed websites were found to encourage purchase and return, with motivators and media richness playing a stronger role in consumer perceptions than hygiene. Everard and Galletta (2006) termed similar categories of cues as functionality, ambiance, and information reliability, suggesting that incomplete or flawed cues will reduce the perceived quality of the website. Together, these studies have founded cue categorization on the ability of the cues to represent the quality of a website.

Another stream has focused primarily on the presentation of production information. Research indicates that product information is critical in providing consumers the information needed to make a purchase decision (Blanco et al. 2010; Ranganthan and Ganapathy 2002). Primarily, these cues are visual and verbal stimuli which convey information about product characteristics (Kim and Lennon 2008). Amongst the cues studied in product presentation literature, researchers have identified color (Gorn, Chattopadhyay, Sengupta and Tripathi 2004), vividness (Fortin and Dholakia 2005), visual and textual complexity (Martin, Sherrard and Wentzel 2005) and interactivity (Fiore, Kim and Lee 2005) as cues used to influence consumer attitudes.

Other studies categorize cues in relation to consumers' purpose for being on a website, whether to accomplish a task or for enjoyment. Cues are classified in this stream based upon ability to provide functional support for a goal or evoke emotion or interest (Lavie and Tractinsky 2004). For example, Eroglu, Machleit and Davis (2001) empirically tested a model of online atmospheric cues as either high- or low-task relevant, finding that high-task relevant cues were rated helpful in both high and low responsive environments. Parboteeah, Valacich and Wells (2009) defined these cues as either task-relevant or mood-relevant cues. They found that task-relevant cues had a stronger effect

on perceived usefulness of the site than did mood relevant cues. Mood-relevant cues most strongly impact perceived enjoyment of the site. Having a high quality of both types of cues was positively related to the urge consumers have to make purchases impulsively.

Despite the range of categorization of these cues, a gap exists between the categorizations used in physical retail stores and the online environment. These studies, whether focusing on website quality, product presentation, or task-relatedness have strongly emphasized aspects of design --functionality or aesthetic qualities -- of the website. Yet, with the ever-increasing number of social technologies available, cues in online stores are no longer limited to the subsection of the store environment model focused on design. This suggests the importance of taking a broader look at the type of cues that may be relevant in the crowdfunding context, in order to account for the strong social nature of the environment.

Table 2: Influential Store Environment Categories	
Citation	**Taxonomy**
Baker et al. (1994)	*Design Factors*: visual factors that are either functional (layout, comfort, privacy) or aesthetic (color, style, materials) *Social Factors*: people within the store environment, including qualities of salespeople and number of other customers *Ambiance Factors*: non-visual background factors such as temperature, lighting, music or scents
Bitner (1992)	*Space/Function*: arrangement of the physical surroundings and how they facilitate performance of goals *Signs/Symbols/Artifacts*: signs, quality of materials, visual placement of cues *Ambient*: background characteristics such as temperature, lighting, music or scent
Eroglu et al. (2001)	*High task-relevant*: Verbal or pictorial site information which enables shopping goal attainment *Low task-relevant*: Verbal or pictorial site information having little impact on shopping goal attainment
Everard and Galletta (2006)	*Functionality*: physical properties encompassing visual characteristics and arrangement of those characteristics *Information Reliability*: believability or reliability of cues related to terminology and language *Ambiance*: background characteristics such as color or music, including aesthetics
Lavie and Tractinsky (2004)	*Classic*: aesthetic cues emphasizing orderly, clean and symmetrical design *Expressive*: aesthetic cues having visual richness, diversity, and complexity
Liang and Lai (2002)	*Motivators:* direct transaction support and product search *Hygiene:* good security and protection for transaction errors *Media Richness:* multiple information channels used in the process
Martin et al. (2005)	*Visual complexity*: the use of static (low complexity) and animated (high complexity) visuals *Textual complexity*: the amount of text presented in a single instance, all text presented simultaneously (high complexity) or grouped by topic (low complexity)
Parboteeah et al. (2009)	*Task-relevant*: characteristics which help in attainment of a shopping goal *Mood-relevant*: characteristics which affect enjoyment of the shopping task but do not support goal attainment

Electronic Word-of-Mouth (eWoM) and Social Media "Buzz"

Word-of-mouth has been found to be influential in driving opinions in such contexts as political campaigns (Reid 1988), product purchasing (e.g. Brown and Reingen 1987; Chevalier and Mayzlin 2006), and service provision (Ng, David and Dagger 2011). The popularity of online shopping has generated additional work in understanding the impact of word-of-mouth in electronic markets. Online settings not only allow organizations to engage with their customers, but also allow customers to talk to one another across greater space and time than would be available via traditional word-of-mouth (Ferrell and Ferrell 2012). Electronic word-of-mouth (eWoM), then, represents statements made about "a product, service, brand, or company…made available to a multitude of people and institutions via the Internet (through web sites, social networks, instant messages, news feeds…)." (Kietzmann and Canhoto 2013: 148) By including reference, review or referral programs within their websites, organizations can now take advantage of the word-of-mouth generated across large networks of consumers (Godes 2012). For example, in a comparison of face-to-face and eWoM, Gensler, Völckner, Liu-Thompkins and Wiertz (2013) found that eWoM, in the form of customer narratives, were more influential even than traditional advertisements on consumer brand engagement.

More recently, the use of social media networks, or social media "buzz", as a form of eWoM has become increasingly popular (Fischer and Reuber 2014; Jansen, Zhang, Sobel and Chowdury 2009). Indeed, apart from the content of social media eWoM, the extent of social media "buzz" in the form of "likes" or "shares" has been shown to be related to organizational outcomes (Phua, Ahn and Sun 2014; Swani, Milne and Brown 2013).

Empirical work has investigated the impact of eWoM, both in volume and content, on consumer intentions to purchase books (Chevalier and Mayzlin 2006; Forman, Ghose and Wiesenfeld 2008), movies (Dellarocas, Zhang and Awad 2007; Duan, Gu and Whinston 2008), and electronic products (Dhar and Ghose 2010). Table 3 provides a select overview of empirical studies focused on the impact of eWoM.

Studies have also shown that electronic word-of-mouth has an impact on organizational outcomes beyond that of revenue in e-commerce web sites, including such outcomes as overall firm equity (Luo, Zhang and Duan 2013), brand reputation (Siano, Vollero and Palazzo 2011), and stock market performance (Tirunillai and Tellis 2012). Recognizing the impact of eWoM on consumer behavior and perceptions, organizations have begun to take an active role in motivating users to contribute to eWoM and to direct eWoM to best suit organizational needs. In response, researchers have focused not only on the impacts of eWoM but also on factors which motivate and encourage eWoM contribution.

One stream of research has focused on perceptions of eWoM, including studies focused on eWoM credibility (e.g. Garrett 2010; Jensen, Averbeck, Zhang and Wright 2013; Weiss, Lurie and MacInnis 2008; Willemsen, Neijens and Bronner 2012), trust (Awad and Ragowsky 2008), and helpfulness (Willemsen, Neijens, Bronner and de Ridder 2011; Yin, Bond and Zhang 2014). For instance, Garrett (2010) found that political rumors spread through email are considered more credible than other avenues of circulation. Yin et al. (2014) found that the valence of eWoM content impacts consumer perceptions of reviewer effort.

Empirical studies have also investigated how electronic word-of-mouth is spread. Studies have focused on the impact of social network structure (Bampo, Ewing, Mather, Stewart and Wallace 2008; Norman and Russell 2006; Sohn 2009), built in viral features (Aral and Walker 2011), and organizational "seeding" of eWoM (e.g. Dellarocas 2006; Kozinets, de Valck, Woknicki and Wilner 2010; Mayzlin 2006). For example, Bampo et al. (2008) used a simulation model to find that the structure of underlying and active social networks mediates the relationship between a market campaign and the viral spread of a marketing message. Aral and Walker (2011) found that passive-broadcasting product features lead to greater adoption of the product within a peer network. Hinz, Skiera, Barrot and Becker (2011) found multiple strategies for "seeding" of eWoM, in which an organization attempts to spur activity by contributing to the community anonymously.

In addition to finding significant impacts of eWoM within e-commerce sites, such as product reviews and web counters, the reach and connection provided by online social networks has emphasized the importance of word-of-mouth that occurs in environments external to the company. While a great deal of empirical work has focused on consumer reviews as eWoM (see Floyd, Freling, Alhoqail, Cho and Freling 2014 for a summary), empirical work has expanded the focus to include such external sources of word-of-mouth as blogs (Aggarwal et al. 2012; Luo et al. 2013), micro-blogging platforms (Jansen et al. 2009), and external product review sites (Resnick, Kuwabara, Zeckhauser and Friedman 2000). For instance, Fischer and Reuber (2014) found that organizational narratives are significantly impacted by outsider posting and responses regarding an organization's message on Twitter. Similarly, social interactions on YouTube have been found to impact how successful videos become, dependent upon both social network structure and

individual user preferences (Susarla, Oh and Tan 2012). Interestingly, eWoM in the form of social media "buzz" also has an impact on attitudes and perceptions even when the content is not directly visible. Instead, the volume or extent of social media "buzz" impacts outcomes in and of itself. For instance, Phua and Ahn (2014) found that the number of overall Facebook "likes" significantly influenced consumers' brand attitudes and purchase intentions.

Along these lines, eWoM research has expanded beyond the impacts of social media to understanding individual motivations and the structure of the underlying social networks. Focusing on social media effects, researchers have undertaken to understand the impacts of social media networks on community intelligence (Oh, Agrawal and Rao 2012), how social media transforms traditional social network structures, and motivations for contributing to online social communities (Chiu Hsu and Wang 2006) and similar networks of practice (Wasko and Faraj 2005).

These studies on eWoM in existing organizations have provided us with a basis of support for the importance of eWoM in an entrepreneurial setting such as crowdfunding -- not only on immediate outcomes, such as short-term sales (e.g. Chevalier and Mayzlin 2006; Dhar and Ghose 2010; Duan, Gu and Whinston 2008) but also on long-term outcomes such as overall firm performance (Tirunelli and Tellis 2011) or brand equity (Luo, Zhang and Duan 2013). In particular, the extent of social media "buzz" visible within the crowdfunding platform, can play a role in extending the reach of crowdfunding project cues beyond the social network of the project creators. In addition, social media "buzz" as eWoM can play a significant role in shaping perceptions of a

crowdfunding project (e.g. Awad and Ragowsky 2008; Garrett 2010; Yin, Bond and Zhang 2014) such that potential funders perceive a project as having long-term value.

Table 3: Selected Studies on eWoM Impact			
Citation	**Dependent Variable**	**eWoM (operationalization)**	**Findings**
Aggarwal and Singh (2013)	Venture capital financing	Blogs (volume)	There is a difference in blog influence on venture financing across decision stages, with the influence falling off after the initial screening stage.
Aggarwal et al. (2012)	Venture capital financing	Blogs (volume and valence)	The effect of eWOM diminishes over time. Negative blog posts and posts by popular bloggers have the greatest impact.
Bambauer-Sachse and Mangold (2011)	Brand equity	Consumer reviews (set number of negative reviews)	Negative consumer reviews do diminish consumer perceptions of brand equity.
Chevalier and Mayzlin (2006)	Online book sales	Consumer reviews (volume and valence)	Improvement in sales is related to improved reviews. Negative reviews have more impact than positive reviews.
Chintagunta et al. (2010)	Movie ticket sales	Consumer reviews (volume, valence, and variance)	Valence of consumer reviews impacts box office performance at the local level. The significant impact of volume of consumer reviews at the national level may be influenced by aggregation bias.
Dellarocas et al. (2007)	Movie revenue	Consumer reviews (volume, valence, dispersion)	Volume, valence and dispersion of consumer reviews are all positively related to movie revenues.
Dewan and Ramaprasad (2014)	Album and song sales	Blogs (volume)	Song-related blog buzz is negatively related to song sales, suggesting that free downloads diminish the impact of buzz.

Table 3 (continued): Selected Studies on eWoM Impact			
Citation	**Dependent Variable**	**eWoM (operationalization)**	**Findings**
Duan, Gu and Whinston (2008)	Movie ticket sales	Movie reviews (volume)	EWOM serves as a positive feedback mechanism, in which sales lead to greater volumes of eWOM which, in turn, increases box office performance.
Forman et al. (2008)	Online product sales	Consumer reviews (content of eWOM)	Online reviews containing identity-descriptive information are perceived as more helpful and a greater number of identity-descriptive reviews will result in increased product sales.
Godes and Mayzlin (2004)	Television Ratings	Online news groups (volume, valence, and dispersion)	Greater dispersion of eWOM early on is related to higher TV ratings later, but the effect diminishes over time.
Gu et al. (2012)	Online high-involvement product sales	External and internal consumer reviews (volume and valence)	External reviews have a greater influence on retail sales of high-involvement products than those offered on the retailer web site.
Khare et al. (2011)	Movie preferences	Consumer ratings (volume, valence, consensus)	eWOM volume moderates the effect of valence, consensus, consumer precommitment, and need-for-uniqueness on consumer persuasion. Greater volume increases the impact of each.
Li and Hitt (2008)	Online product sales	Consumer reviews	Consumer reviews are positively biased toward the beginning of a product's life, which later influences product sales.
Li and Hitt (2010)	Perceived product value	Consumer reviews (content)	Product ratings are more closely related to perceived product value rather than product quality, leading to a pricing bias in reviews even after a retailer makes pricing changes.

Table 3 (continued): Selected Studies on eWoM Impact			
Citation	**Dependent Variable**	**eWoM (operationalization)**	**Findings**
Liu (2006)	Movie revenue	Consumer reviews (volume and valence)	Consumer reviews are positively related to box office revenue, both aggregate and weekly. Volume of eWOM explains more of the variance in revenue than valence.
Lu et al. (2013)	Online product sales	Consumer reviews (volume)	EWoM volume substitutes for coupon offerings but compliments keyword advertising in increasing product sales.
Luo et al. (2013)	Firm equity value	Blogs and consumer reviews	Blogs and consumer ratings have a faster and stronger predictive value than conventional online metrics on firm equity value.
Luo and Zhang (2013)	Stock market value	Product reviews (level and volume)	Consumer "buzz" is positively related to stock performance, having a greater effect than web traffic. Competitor's buzz also has a significant, indirect effect on stock performance.
Moe and Trusov (2011)	Online product sales	Consumer product ratings (valence, variance and volume)	Greater variance in ratings generates higher volume of ratings in the long-term, in turn positively impacting product sales.
Oestreicher-Singer and Sundararajan (2012)	Product revenue	Co-purchase recommendations (network influence)	Increasing the network influence in a product category increases sales of the least popular products and reduces sale for the most popular products.

Table 3 (continued): Selected Studies on eWoM Impact			
Citation	**Dependent Variable**	**eWoM (operationalization)**	**Findings**
Sonnier et al. (2011)	Product sales	all eWOM pulled by a Web crawler (volume and valence)	Online communications, beyond consumer ratings, have an impact on firm sales. Additionally, "shocks" to communications of a particular valence will have a significant impact on revenue.
Tirunillai and Tellis (2012)	Stock market performance	Consumer reviews (rating, volume and valence)	Volume of "chatter" has the strongest effect on trading volume and abnormal returns in comparison to rating and valence metrics.
Trusov et al. (2009)	Social networking site sign-ups	Referrals (volume)	WOM has both a larger short-term effect and a longer carryover effect on number of new sign-ups to the site than traditional marketing techniques.
Zhu and Zhang (2010)	Video game sales	Consumer reviews (rating, variance, and volume)	Consumer reviews, rating, variation and volume, have a significant impact on less popular video games. While higher ratings and volume are positively related to sales, greater variation in reviews is negatively related to sales of video games.

The existing research in crowdfunding highlights a context in which potential funders obtain information from the environment in order to make a decision to fund or not to fund a project. This evidence has similarities to the research conducted in online retailing environments, where researchers have focused on the quality of cues provided by websites in order to predict consumer attitudes and behavior. Crowdfunding success depends not on the behavior of a single funder but on the combined efforts of a social community. Therefore, the social cues suggested by the store environment model in physical stores may play a significant role in determining crowdfunding success. Additionally, the extensive electronic word-of-mouth literature provides us with a basis of support that social media eWoM (i.e. social media "buzz") can impact consumer decision-making and impact organizational outcomes. Connecting these two distinct literature streams—store environment and eWoM suggests social media "buzz" should be considered as a type of technology-enabled, social cue that may impact success in the rewards-based crowdfunding environment.

Chapter 3: Research Model and Hypotheses Development

Research Model

Figure 2 presents my proposed research model for understanding the impact of crowdfunding environment cues on project funding success. The proposed research model uses the store environment model as a theoretical lens for understanding the nature of the rewards-based crowdfunding context and how specific cues used by project founders to promote their project can influence funding.

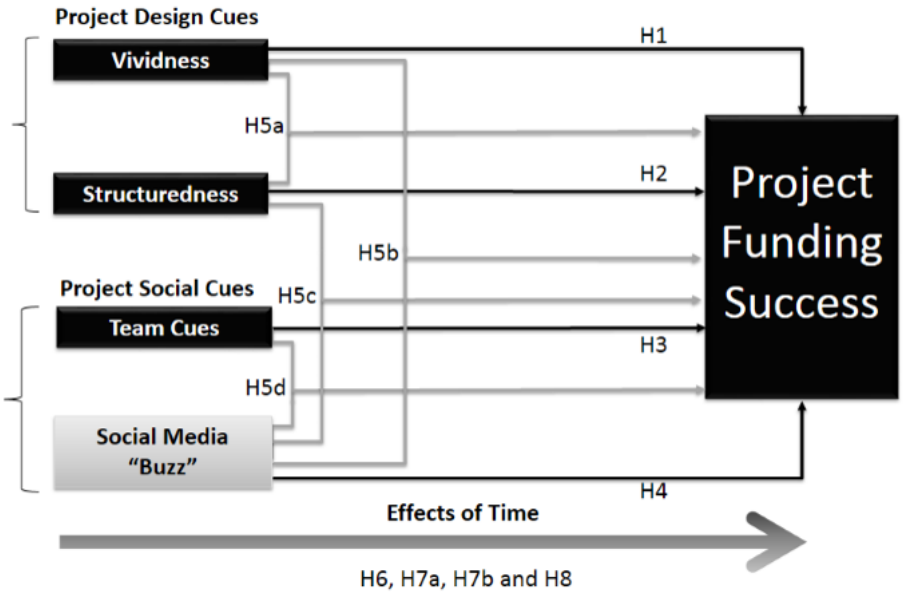

Figure 2: Research Model

Based in environmental psychology, store environment was identified as a set of stimuli by which individual's internal affective and cognitive states and, subsequently, behavioral responses are influenced (Mehrabian and Russell 1974). Mehrabian and Russell's (1974) stimulus-organism-response (S-O-R) model posited that environment cues (stimulus) influence individuals' internal cognitive and affective processes (organism) by which decisions to engage in approach or avoidance behaviors are made

(response). From this, an extensive literature has developed directed toward understanding how cues from the store environment or store "atmosphere" will impact purchasing intentions and behaviors (e.g. Baker 1987; Donovan and Rossiter 1982).

Additional theoretical work also supports the concept that store environment cues have an impact on judgments (e.g. Baumgarten and Hensel 1987; Bitner 1992; Ward, Bitner and Barnes 1992). Research on store environment cues (Gibson 1979; Huber and McCann 1982) posits that individuals perceive their surrounding environment as a meaningful source of information from which they gather information and decide on outcomes based upon limited cues. Together, these theories suggest that environmental cues are perceived to be reliable indicators of product attributes (Bitner 1992).

As this stream of research has developed, so have categorizations or taxonomies of store environment cues. The most general definition of these cues, what Mehrabian and Russell (1974) termed "sense modalities," encompasses cues that are registered through sense, sound and touch. Built into their S-O-R theory of individual behavior, the "sense modalities" are the key factors by which the environment serves to influence individuals' cognitive and affective processes used in guiding behavior. Expanding upon this theory, several distinct dimensions of environment cues have been identified in environmental psychology literature (e.g. Baker 1987; Bitner 1992). One of the most often used taxonomies in physical retailing environments, classifies individual environment cues into three encompassing categories: design cues, ambient cues, and social cues (Baker 1987).

- Design cues represent visual indicators of store elements. In traditional brick-and-mortar stores, design cues include such factors as the type of displays and fixtures, signs, and layout of the store (Baker 1994).
- Ambient cues represent cues that appeal to senses other than sight. For instance, empirical work has investigated the impact of background music (Areni and Kim 1993) and scent (Spangenberg, Crowley and Henderson 1996) on consumer evaluations of store quality.
- Social cues represent information provided about the individuals who are within the store's environment (Baker et al. 1994). For instance, the appearance, helpfulness and number of salespeople has been studied in relation to overall store outcomes (e.g. Baker et al. 1994; Gardner and Siomkos 1985).

Having adapted the store environment model from the environmental psychology literature to fit into the online environment (e.g. Eroglu et al. 2001), the information systems literature has focused on a narrow portion of the store environment model of behavioral cues, the design of websites and the presentation of product information online—both of which are reminiscent of Baker's design cues. However, the investment aspects of the crowdfunding environment suggests that a greater range of cues may influence funder decisions than have been previously studied in online contexts. Crowdfunding departs from traditional e-commerce transactions and venture capital financing in that project success is dependent not on the contribution of one or a few individuals, but the joint (and generally small) contribution of many individuals. Because of this, a funder must rely not only on the ability of the project founders to follow through on the promises made in the project pitch, but also on others in the community to support

and fund the project in order to receive any return for their contribution. Thus, predicting eventual project success is likely to be a function of both the cues provided by project founders (consistent with the store environment model) and the attention of others in the community (through eWoM, which extends the store environment model).

Given the social nature of the crowdfunding phenomenon, my research model identifies an additional cue available to decision makers in today's socially connected environment, heretofore not included in the store environment model. Specifically, my research takes into account how social media eWoM (i.e. social media "buzz"), visible within the crowdfunding environment, may have a direct impact on the successful funding of a crowdfunding project as well as an indirect impact on funding alongside more traditional project environment cues. Further, I expand upon findings regarding the temporal effects of social media "buzz" by investigating the nature of these relationships across the crowdfunding campaign timeframe.

Hypotheses Development

Crowdfunding Project Design Cues

All three categories of environment cues have been studied in online contexts to some degree, yet the types of cues available in online contexts are enabled or constrained in light of the affordances offered by the media. The limited range of the cues available in an online store has resulted in a predominant focus on design cues. More specifically, much of the focus has been on identifying how website quality and the quality of product presentation within the website influence sales. In one of the first studies to use the store environment model in online settings, Eroglu et al. (2001) included a mix of both general website characteristics (e.g. navigation, white space, security, and site awards) and

product presentation (e.g. descriptions, pictures and price) to describe the design cues available to decision-makers in this context. Subsequently, two related streams of research in the information systems literature have focused on either website characteristics (e.g. Liang and Lai 2002; Wells et al. 2011) or product presentation characteristics (e.g. Adelaar et al. 2003; Chau et al. 2000; Jiang and Benbasat 2007) as stimuli impacting user attitudes and intentions to purchase in e-commerce environments (Jarvenpaa and Todd 1997; Lohse and Spiller 1999).

In the crowdfunding environment, the template of the website is standard across multiple projects. This aspect of the crowdfunding platform departs from much of the e-commerce context in which characteristics of the website serve as cues offered by the retailer to distinguish itself from competitors. Instead, a crowdfunding platform standardizes such characteristics as navigation, flow, and security across all projects. The cues, then, which identify the quality of a crowdfunding project and distinguish it from others on the crowdfunding platform are limited to the design cues that relate to the presentation of the project within the constraints of the crowdfunding platform. Thus, the ability of the project team to successfully pitch their ideas is constrained and enabled by the technology features provided by the crowdfunding platform as well as the project team's ability to make use of those features.

The literature on product presentation cues acting as stimuli for online decision-making supports the idea that such cues will impact funders' decisions to support or not support a crowdfunding project. In e-commerce environments, product presentation plays a role not only in the acquisition of product information but also in the evaluation of alternatives and purchase decisions (Kim and Lennon 2008). Indeed, Blanco et al.

(2010) suggest that "its [product information] presentation on the computer screen could determine the ultimate success of online transactions." (p. 669) In both internet-based consumer purchasing and venture financing environments, decision-makers rely on information cues that indicate the worth of a product or project. In venture financing, investors glean information about a potential venture based upon the business "pitch" or business plan put forth by the new venture team. Venture capitalists rely on various cues from the business pitch to determine the potential value that can be expected from investment in a proposed venture (Prasad, Bruton and Vozikis 2000).

Conceptually, the use of both visual and textual information in product presentation has been considered to impact information processing and decision-making (Adelaar et al. 2003; Chau, Au and Tam 2000; Sundar 2000). In the e-commerce environment, the impacts of graphics, colors and animation have all been found to impact purchasing behavior (Fortin and Dholakia 2005) and consumer satisfaction (McKinney 2004). These studies suggest that how information is presented—visually, textually or in combination—can engender different responses from consumers (Adelaar et al. 2003).

Theoretically, the differential impact of these cues may best be explained in light of the type of response they elicit in the consumer. Mehrabian and Russell (1974) described environment cues in terms of their ability to evoke "pleasance" and "arousal." This broad categorization closely aligns with the studies from the information systems literature classifying design cues based upon their ability to achieve a specific purpose (e.g. Lavie and Tractinsky 2004; Parboteeah et al. 2009). For instance, Lavie and Tractinsky (2004) describe design cues as having "expressive" (i.e. visual richness, diversity, and complexity) and "classic" (i.e. orderly, clean, and symmetrical design)

aesthetics. Cues related to the functionality of website design and product information, or "classic" design cues, serve to enhance the functionality of the site by providing information in a well-organized, clear, and clean fashion. Alternatively, the ability to capture the interest of website users is generated through "expressive" design, in which emotions and senses are activated using colorful and sophisticated effects (Lavie and Tractinsky 2004; Nisbett and Ross 1980). These descriptions speak to the idea of visual or multimedia cues as providing a complex and vivid description of information (Jiang and Benbasat 2007), whereas ordered and logical presentation of textual information promotes clarity and coherence (Deng and Poole 2010).

Vividness of Project Presentation. "A vivid product presentation exposes consumers to more information cues about a product and stimulates more sensory channels than a pallid product presentation." (Jiang and Benbasat 2007: 456) Prior research shows that visual representation of information affects funders' decision-making processes by serving as a substitute for the ability to touch the product or reward associated with the project (Blanco et al. 2010; Lurie and Mason 2007). This focus on the use of visuals to present product information has been described as "visual intensity" (Adelaar et al. 2003) or "vividness" (Jiang and Benbasat 2007).

Vividness is defined as the richness with which the electronically-mediated environment presents information to the senses (Jiang and Benbasat 2007; Steuer 1992). Vividness is associated with salience of information (Taylor and Thompson 1982), and as such, vivid presentations will attract greater attention from consumers than less-vivid presentations. Applying this concept to crowdfunding, vivid imagery used in the project

pitch will serve to draw a funder's attention to a project from amongst a highly competitive set of alternatives.

In addition, vividness attracts attention by providing concrete imagery, a feeling of proximity, and greater emotional interest (Nisbett and Ross 1980). The use of vivid images serves to attract attention and promote recall by encouraging decision-makers to conduct a more thorough evaluation of the product (Jiang and Benbasat 2007). This is particularly important in a context where the product is considered an "experience good," in which vividness serves as a substitute for the physical quality cues that are available from use of a product. For instance, Urban et al. (1996) found that vivid portrayals of new products stimulate interest by providing a sense of realism to an as-yet unavailable product. In crowdfunding, where the existence of the final product is often dependent upon the funding received, such cues will provide a sense of realism and legitimacy to the ideas presented. Thus, I hypothesize:

H1: Greater vividness of project design cues will be positively associated with crowdfunding project success.

Structure of the Product Description. Despite the noted importance of offering vivid product information through the use of visual cues in online settings, the impact of textual information should not be ignored. Information online is more often than not presented using both visual and verbal cues (Blanco et al. 2010). It is important to note that, while vividness in product information through visuals and multimedia is important for capturing imagination, the dimensions are not orthogonal. Rather, a good design will be created with a high level of both vividness and structure (Lavie and Tractinsky 2004).

When making decisions, consumers are looking for information that can identify the quality and characteristics of the project. However, the recall and attention paid to this textual information is also subject to the way in which the information is presented. Structuredness as it relates to product presentation suggests that clearly organized information provides greater understanding of the product by making its value more tangible and its application more coherent (Deng and Poole 2010; Kaplan and Kaplan 1983). Textual structure can impact the ease with which information is identified and considered amidst many other cues competing for attention. Research in marketing has suggested that information processing becomes easier when information online is presented in such a way as to allow individuals to scan for information rather than reading in-depth (Martin et al. 2005). For instance, Stone and Schkade (1991) found that the presentation of information in numeric or text form can impact the efficiency of data processing. According to Lurie and Mason (2007), consumers may be able to consider a greater number of details about a product when the information is presented in a tabular format.

Similarly, research in the information systems literature suggests that text in a format similar to an outline is more attractive than paragraph writing, which can be viewed as dense (Zusman and Landis 2002). The greater the search task complexity, the more important structure will be in the processing of information needed to make decisions (Adipat et al. 2011). The competitive and uncertain environment of a crowdfunding project makes it difficult for a founding team to attract the attention of funders, highlighting the importance of structuring information to reduce the uncertainty regarding the project. Thus, in the context of crowdfunding, the structure of the textual

information becomes an important cue in funders' decision-making by reducing the cognitive load they experience in processing information about the project.

H2: Better structured project pitches will be positively associated with crowdfunding project success.

Crowdfunding Project Social Cues

As mentioned above, much of the research in online store environments has focused on the impacts of design cues on consumer behaviors (e.g. Eroglu et al. 2001; Parboteeah et al. 2009). The online purchasing context by nature focuses on the quality of the store and the quality of the products for sale. Yet, given the limited types of cues about the project available to potential funders in the crowdfunding environment, it is possible that other types of cues may play a role in influencing their decisions' to fund a specific project.

Project Team Cues. Baker's (1987) store environment model identified a concrete set of environment cues having an impact on consumer's behavior and reactions in a physical retail environment, thereby extending Mehrabian and Russell's original model. Of these cues, the social category, in particular, focused on the impacts of other individuals versus inanimate aspects of the store environment. The stream of research in this area focuses most particularly on the impact of store employee characteristics as they relate to consumer perceptions and behaviors. Some recent studies in the information systems literature (e.g., Jiang et al. 2010, Koo 2014) have extended these ideas to include social technologies such as "live chat" as indicators of the visibility and availability of store employees is limited in online environments.

This focus on the characteristics of salespeople may be particularly relevant to the crowdfunding environment given its similarities to both the retail and venture investment phenomenon. In the physical store environment, Baker, Grewal and Parasuraman (1994) found that the visibility and friendliness of store employees can increase shopping pleasure. Other studies have suggested that both the visible presence and appearance of employees can impact the overall image of a store. Amongst the characteristics studied in this stream of literature, dress (Gardner and Siomkos 1985), cooperation (Berman and Evans 1989), number of salespeople (Mazursky and Jacoby 1986), and salesperson responsiveness (Parasuraman et al. 1988) have all been associated with store quality.

Drawing on the venture funding environment literature, the characteristics of the entrepreneurial team serve as a consistent cue of venture quality and often play a role in whether or not a new venture will receive funding. For instance, characteristics of the entrepreneur were found to be amongst the top criteria used by venture capitalist firms when choosing whether or not to fund a new venture (MacMillan, Siegel and Narasimha 1986). Both entrepreneurial experience (Baum and Silverman 2004; Pollack, Rutherford and Nagy 2012) and skill (Tyebjee and Bruno 1984; Zacharakis and Meyer 2000) have been found to impact venture financing. In general, research in this area often makes an assumption that a start-up firm is an "extension of the founder" (Bruderl and Presisendorfer 2000; Chandler and Jansen 1992; Lee, Lee, and Pennings 2001).

The similarity of the crowdfunding process to the venture financing environment leads to a greater visibility of the crowdfunding project team within the decision-making environment than that found in online retail environments. Within the rewards-based crowdfunding platform, projects include not only visible business pitches, but also related

information about the project team, such as team size, activity, and experience (including in other crowdfunding projects on the platform). These project team cues represent information available about the project team responsible for creating and completing the crowdfunding project. Based upon this information, a potential funder may be influenced in a similar way as by the visible presence of a salesperson in a physical store (Baker et al. 1994) or, further, be able to act as an "investor" and infer the quality of the project based upon cues indicating whether or not a project team has the ability to successfully create a quality outcome and see the project through to completion (Busenitz et al. 2005). I hypothesize:

H3: Visibility of project team cues will be positively associated with crowdfunding project success.

Social Media "Buzz" as Electronic Word-of-Mouth (eWoM). Several studies have identified other customers as social cues affecting consumer opinion (e.g. Eroglu and Harrell 1986; Hui and Bateson 1991), yet most empirical work in retail environments has focused on the interactions between consumers and salespersons. Interestingly, the technology that constrains some types of cues within the crowdfunding environment also provides a greater degree of visibility and importance to cues regarding other participants in the online environment. Connections to various social media platforms using "widgets" (i.e. small graphical applications embedded within a web page), indicating the extent of social media "buzz" (e.g. how many people are sharing, liking, or tweeting) about a crowdfunding project, create an environment where funders can easily be influenced by communications amongst their peers in addition to the communications offered by the project team (Aral, Dellarocas and Godes 2013). The capabilities of these media

platforms allow crowdfunding projects to capture the "wisdom of the crowd" (Tirunillai and Tellis 2012) by taking advantage of eWoM communication to help shape the value proposition of the project (Claussen, Kretschmer and Mayrhofer 2013; Luo et al. 2013).

These social media widgets provide an internal representation of the extent to which eWoM is spreading to external social media platforms, allowing outsiders to become involved in firm-level communication. These interactive technologies allow stakeholders to influence perceptions regarding the information that firms create, either strengthening or undermining the original intent of the message the organization wishes to convey (Fischer and Reuber 2014).

The popularity of eWoM technologies (e.g. consumer reviews, blogs, micro-blogs, or social media "shares") has led researchers and practitioners to focus on these technologies as a prominent source of information used by both consumers and investors (Chen, Liu and Zhang 2012; Luo et al. 2013). For example, eWoM has been found to have an impact on sales of books (Chevalier and Mayzlin 2006), album and song sales (Dewan and Ramaprasad 2014), movie tickets (Duan, Gu and Whinston 2008), and the general sale of products online (e.g. Lu et al. 2013, Moe and Trusov 2011, Sonnier et al. 2011). In a survey of entrepreneurs, Aggarwal et al. (2012) found that entrepreneurs believe that eWoM impacts not only a venture's valuation but also the total financing amount they receive (Aggarwal et al., 2012).

In a venture capital environment, research suggests that eWoM can act as a substitute for financial data that may be unavailable to investors (Sanders and Boivie 2004). As social media technologies make peer opinions ever more accessible, users are increasingly turning to their social networks as a source of information. Empirical work

suggests that users are looking increasingly to social media prior to or along with traditional avenues to search information and form opinions about products and services (Ferrell and Ferrell 2012). Other empirical work suggests that social media influences less informed decision-makers, and in the process, affecting not only product success but also shaping opinions regarding the firms' potential value. Additionally, searchers are likely to view information available via social media as more trustworthy than information crafted by an organization (Foux 2006).

Interestingly, past work has suggested that not only does the valence of eWoM impact decision-making in multiple contexts, but the mere volume of word-of-mouth plays a role in decision-making outcomes. Indeed, while the impacts of valence are mixed (Aggarwal et al. 2012) the influence of eWoM volume is more consistent (Aral and Walker 2011; Chavalier and Mayzlin 2006; Liu 2006). These studies suggest that volume of eWoM plays a role in consumer decision-making, apart from the content displayed. Social media widgets provided by the crowdfunding platforms not only provide project teams, funders and bystanders the ability to spread eWoM in the form of social media "buzz" about the project but may also influence potential funders passively by reporting the volume of "buzz" associated with a project. In this competitive space, a crowdfunding project must compete for funder attention across hundreds of other projects both in the same market space and across multiple categories of project types. Because of this intense "competition for eyeballs", it is difficult for a project to get noticed. In this type of competitive environment, any conversation can be desirable as it brings community attention to a crowdfunding project. This trend in the importance of eWoM suggests that

eWoM, in the form of social media "buzz," can impact potential funder opinions, leading to the following hypothesis:

H4: The volume of social media "buzz" about crowdfunded projects will be positively associated with their success.

Interaction Effects

Mehrabian and Russell (1974) viewed the store environment as encompassing cues which interacted with one another to influence consumer attitudes and behaviors. Rather than existing in a vacuum distinct from one another, the cues make up an environment where the consumer is exposed to multiple types of cues simultaneously. Because of this, the impact of any single cue may go beyond that of its own importance and extend to impact perceptions of other cues contained within the environment.

These ideas have been partially supported within the information systems literature where studies have indicated that there may be some interplay between different design cues. For instance, research suggests that verbal and non-verbal cues work together to strengthen the impact of the information conveyed (Lim et al. 2000). Indeed, empirical work in the product presentation literature finds that the interaction between visual and verbal information has a significant impact on consumer purchase intentions. Given that these types of cues complement one another, the higher the quality of these cues would impact a project above and beyond either alone. Therefore, highly vivid imagery in a project pitch containing greater textual structure will increase funding whereas the combination of lower vividness and a lack of structuredness within the project pitch will decrease funding.

H5a: Vivid imagery and better textual structure will interact to positively influence crowdfunding project success.

Electronic word-of-mouth, based on the available theoretical and empirical evidence, can be viewed as having a dual impact on investors. First, eWoM may directly impact project funding (as argued above) by serving as a substitute for other project cues. Second, eWoM may serve to draw attention to a specific project and enhance the outcomes indirectly (Aggarwal et al. 2012). Volume of eWoM can increase exposure, and imbue a venture with a signal of legitimacy (Aggarwal et al. 2012).

Electronic word-of-mouth through social media, or social media "buzz," serves to direct attention and increase customer engagement with firms by making the information regarding those firms more visible and accessible (Luo et al. 2013). Indeed, social media activity has been found to impact micro-loan funding indirectly, in coordination with traditional media (Stephen and Galak 2012). The combination of social media "buzz" and vivid imagery work together to promote crowdfunding success. Social media widgets, available on crowdfunding project page, provide links to spread "buzz" about a crowdfunding project on external social media platforms. When combined with vividness, social media "buzz" serves to expand the reach of potential funders who will be likely to conduct a more thorough examination of the project information following the rich visual cues.

Both vividness and eWoM have been found to be impactful in capturing attention; vivid imagery through its ability garner interest though multiple sensory channels (Jiang and Benbasat 2007) and eWoM via its ability to extend the area in which a store or product is visible. Thus, these cues should have a greater impact on project funding together,

above and beyond the effects of each alone, by garnering the interest of the greatest number of potential funders. In this sense, eWoM enhances the efficacy of vivid imagery. Greater social media "buzz" about a project containing highly vivid imagery will increase funding whereas the combination of lower social media "buzz" and a lack of vivid imagery within the project pitch will decrease funding.

H5b: Vivid imagery and social media "buzz" will interact to positively influence crowdfunding project success.

In addition to connecting potential funders to a project, eWoM through social media "buzz" imbues a project with a sense of acceptance, legitimacy and credibility in the community. A high volume of eWoM serves as a signal of credibility by demonstrating the way in which the social community affiliates itself with and supports the project (Donath 1999). Research in the credibility of online information suggests that social discourse serves to ease the cognitive load associated with making decisions about credibility (e.g. Metzger et al. 2010). Electronic word-of-mouth is used as a heuristic for deciding which cues are most likely to be meaningful and worthy of attention.

In this way, social media "buzz" serves to ease the cognitive load for those looking to ease uncertainty about the quality of the project and the ability of the project team. In particular, the impact of textual structuredness rests in its ability to provide a greater sense of clarity and coherence to the information presented in the project pitch. Provided this information, the potential funder can then make a decision based upon the indicators of the quality of the project. However, perceived information quality may be particularly important for an "experience" type of good such as one provided through a rewards-based crowdfunding project (Ha and Im 2012). By providing legitimacy to the project, social

media eWOM (i.e. social media "buzz") also imbues the information provided with a certain credibility. Social media widgets provide a prominent cue regarding the extent of eWoM related to a specific crowdfunding project. Thus, textual structuredness provides ease in deciphering project quality through information accessibility, and the quality of the information is verified by the community through eWoM. Greater social media "buzz" about a project containing well-structured text will increase funding, above and beyond the effects of each cue alone, by providing the greatest assurance of quality through the information cues provided in the project pitch. On the other hand, a poorly structured project pitch with little social media "buzz" to support it will fail to indicate a quality project and serve to decrease funding.

H5c: Better textual structure and social media "buzz" will interact to positively influence crowdfunding project success.

With the uncertainty in funding success, the project design cues (vividness and structuredness) provide only a limited amount of information regarding the potential of the project should it be seen to successful completion. Thus, a potential funder may also judge whether or not cues regarding the project team also indicate the likelihood of success. Qualified and skilled people should be able to raise more money, and may ultimately be more successful in longer-term performance (Baum and Silverman 2004). Electronic word-of-mouth serves as a further endorsement of the project team by suggesting that others have also deemed the project worthy of attention. Given this argument, a high volume of social media "buzz" may serve to validate an individual's opinion regarding the capability and reputation of the project team, based upon the cues offered within the project pitch. Visible indicators of a quality project team when

combined with high levels of social media "buzz" will increase funding, whereas little social media support from the community and few visible indicators of project team quality will decrease funding.

H5d: Project team cues and social media "buzz" will interact to positively influence crowdfunding project success.

Impact of Time

The visibility of social media "buzz" throughout the funding campaign provides potential funders the ability to take into account eWoM support of early supporters for the campaign in determining if a campaign is likely to be a worthwhile investment. Studies regarding the impact of eWoM in both consumer behavior and venture financing literatures suggest an effect of time on the strength of the impact eWoM has on organizational outcomes. This work has its basis in the product diffusion theory (e.g. Bass 1969), which suggest that while early adopters are mindful in their decisions, later adopters are likely to be influenced by the decisions of their peers (Li and Hitt 2010).

Support for the early influence of eWoM in both venture financing and online product sales strongly indicates that a similar effect would occur in a rewards-based crowdfunding context. Empirical work on consumer behavior has found that greater volumes of consumer ratings early in a product's life will result in greater sales revenue for online products (Moe and Trusov 2011). Other work suggests that the impact of eWoM on television ratings will diminish over time (Godes and Mayzlin 2004). Further support for the temporal effect of eWoM has been found in venture financing contexts. In this context, the value of non-financial information, such as peer recommendation on social media, has been found to decrease over time, whereas financial information

becomes more important with maturity of the venture (Hand 2005). For example, Aggarwal et al. (2012) found that while eWoM is influential across financing stages, the effect on financing decreases. Similarly, Aggarwal and Singh (2013) find that the influence of blog eWoM diminishes after the initial, screening stage of venture finance decision-making. In this way, social media "buzz" will have more impact if it occurs early in the crowdfunding campaign. Later adopters will use the volume of social media "buzz" as a heuristic for peer support of the crowdfunding project.

H6: Greater volumes of social media "buzz" early in the campaign compared to later will lead to greater crowdfunding project success.

Taken together with arguments for the enhancing effect of social media "buzz" on vividness, structuredness and project team cues, the above arguments suggest that the interaction effect between these cues and social media "buzz" will be stronger when a crowdfunding project is new.

H7a: Greater volumes of social media "buzz" early in the campaign compared to later will have a stronger interaction effect with vividness on the relationship between vividness and project funding success.

H7b: Greater volumes of social media "buzz" in the campaign compared to later will have a stronger interaction effect on the relationship between textual structure and project funding success.

H7c: Greater volumes of social media "buzz" early in the campaign compared to later will have a stronger interaction effect on the relationship between project team cues and project funding success.

Chapter 4: Methods

Study Context and Sample

This research focuses on the influence of project environment cues (vividness, structuredness, project team cues, and social media "buzz") in a rewards-based crowdfunding environment. The context for my study is the popular crowdfunding site Indiegogo.com. Indiegogo.com is one of the top two rewards-based crowdfunding sites, beside Kickstarter.com, with over 275,000 projects to date (Indiegogo.com). With more than 7,000 active campaigns at any given time, Indiegogo promotes itself as a platform catering to anyone with an idea, stating: "Since 2008, millions of contributors have empowered hundreds of thousands of inventors, musicians, do-gooders, filmmakers – and many more – to bring their dreams to life."

The primary reason for the choice of Indiegogo.com as my platform of interest is the *flexible-funding* option. With flexible-funding, Indiegogo allows project teams to retain any funds raised for the project regardless of whether or not the stated funding goal was met. This allows me to take into account the impact project environment cues have on a wider array of projects, including both the projects that successfully reached their goal and also those that did not meet the stated goal.

To empirically examine how crowdfunding project environment cues impact project funding success, I drew a sample of 420 active projects from the film, music and technology categories. Rather than taking a random sample, these categories were chosen based upon the similarities across projects in the type of reward offered for similar donations. For instance, a typical music project within the sample offers a digital copy of the album created in return for a $25 donation. Using a random sample of 200 rewards-

based crowdfunding projects across all categories, I identified the lowest donation amount required for a funder to receive a tangible reward (i.e. some type of physical commodity). Some categories, (e.g. food, education, or health) primarily offered intangible rewards such as "warm thank you" or a social media "shout out." Other categories varied widely in the donation amount need to receive a tangible reward. For instance, amongst the gaming projects selected, the first tangible reward may be $5 for a copy of a game or $100 for a t-shirt.

After removing 17 projects due to cancellation or removal by Indiegogo.com and 14 statistical outliers greater than 10 standard deviations from the mean funding level, my useable sample consisted of 389 flexible-funding projects ending in the five month period between November 2014 and March 2015. The final sample consisted of 189 film, 128 music, and 72 technology projects. Projects have a set start and end date; those within this sample had an average duration of 31 days. Projects were identified within the first week of the funding campaign and project information was then manually collected. Subsequently, I collected social media "buzz" amounts at the end of the first quarter of the campaign timeframe and the last quarter, which coincided with the campaign finish. The dependent variable, total funding, was also collected the day the campaign ended.

Dependent Variable

Total funding: The dependent variable of interest in this study is project funding. While there was a great deal of variance in the total funds raised for projects, this variable has been used in similar contexts. In online sales, total amount purchased has been used in relation to the impact of website characteristics on impulse purchases (Parboteeah et al. 2009). Similarly, amount of money invested in entrepreneurial firms has been used as

a measure of performance in the venture financing literature investigating determinants of success (Jeng and Wells 2000). Total funding amount is of particular interest in this study, allowing me to investigate the impact of project environment cues across multiple levels of project success, including both successful and unsuccessful in reaching project goals. Project funding was thus operationalized as a continuous variable based upon the total amount raised in support of a project.

Independent Variables

Operationalization of Design Cues

Given that the crowdfunding platform serves to standardize many website quality cues, such as speed, navigability, and security, the types of design cues available to crowdfunding project founders are limited to cues focused on the presentation of the project pitch. The differential effect of textual and visual cues on consumer information processing and decision-making has long been recognized in the consumer behavior literature (e.g. Childers et al. 1985). Subsequent empirical research in online shopping environments and web atmospheric have set precedence for studying text and visuals as design cues in online environments (Adelaar et al. 2003; Blanco et al. 2010; Sundar 2000). Thus, I operationalized project design cues in terms of both the vividness of the project pitch and structuredness of the project description.

Vividness of Project Pitch. The use of visual imagery in web contexts has been found to be positively related to consumer intent to purchase (e.g. Adelaar et al. 2003; Blanco et al. 2010), and has shown to enhance consumer recall of product information (Hong et al. 2004). Because it indicates the richness with which cues are conveyed, vividness is frequently measured in terms of the amount of multimedia employed through

the use of images and video (e.g. Jiang and Benbasat 2007; Lurie and Mason 2007), consistent with the operationalization in this study. Thus, *vividness* was computed based on the number of images and videos in the project pitch.

Structuredness of Product Description. In the communications literature, the length of a message is often associated with the worth of the message (McComb and Shaw 1972). The length of the message carries symbolic meaning that the message is worth the audience's time (Renn and Levine 1990). Yet beyond the content contained within the product description, the format of the text has also been shown to influence decision-making (Miller 1956; Tegarden 1999). The most impactful project pitch would convey the information needed as well as present it in such an orderly and organized fashion as to make the information easily recalled and digested. The use of headings is a common feature used by crowdfunding project founders in arranging the text of the project pitch. Prior research would suggest headings serve to break up the text into smaller subsets of information that can be more easily absorbed by potential project funders. Therefore, the use of headings structures the volume of the textual information in such a way as to make it more effective. *Structuredness* in this study represents the extent to which information is communicated and arranged within the project pitch and is operationalized based upon the number of words multiplied by the number of headings used in displaying the text.

Operationalization of Social Cues

With perhaps the exception of online auction contexts (e.g. Gregg and Walczak 2008), the majority of research in online contexts has focused primarily on design environment cues. Taking into account the importance of the project team in a

crowdfunding context and the additional capabilities added by social media eWoM technology, I look to project team cues and social media "buzz" as two types of social environment cues used in crowdfunding contexts.

Project Team Cues. Drawing from empirical work in physical retail environments, which focuses on the experience, helpfulness, and appearance of salespeople (e.g. Baker et al. 1994; Gardner and Siomkos 1985), I focus on the characteristics of the project team as environment cues. This view is further supported by research on the importance of signals related to skill, experience, and legitimacy of the new venture team on funding outcomes (Busenitz et al. 2005). *Project team cues* are operationalized as visibility of information about the project team, including whether or not the project team conveys information about their experience (number of crowdfunding campaigns), their responsiveness to the community (number of comments posted) and their appearance (based upon number of profile pictures). Despite the high visibility of these cues, the variables were very sparsely populated in the sample. In order to extract the most variance from the data, project team cues were operationalized as a number between 0 and 3, with the most complete containing all 3 types (experience, responsiveness, and appearance) of team cues.

Social media eWoM "buzz." Prior research supports the use of volume of eWoM as a significant metric for understanding its impact on organizational outcomes (e.g. Aral and Walker 2011; Chavalier and Mayzlin 2006). More recently, empirical work has focused on social media "buzz" as sources of this eWoM (e.g. Jansen et al. 2009; Phua, Ahn and Sun 2014). Crowdfunding platforms are designed in such a way as to make the volume of discourse or social media "buzz" about a project highly visible for all

crowdfunding projects. The standard design of an Indiegogo.com project page includes widgets which display the volumes of eWoM across the social media platforms of Facebook, Twitter and Google+ at the top of the main project page. In this way, these widgets provide both the ability to spread eWoM and a visible cue of external eWoM all within the confines of the crowdfunding environment. Taking advantage of the social media connections designed into the Indiegogo.com platform, this variable was operationalized as volume of social media "buzz" reported across all three social networking platforms, i.e., the sum of Facebook "shares", Google+ "shares", and Twitter "tweets." The volume of social media "buzz" was collected for each project at the end of the first and final quarter of the campaign term. To capture the amount of social media "buzz" garnered early in the campaign rather than late, I calculated the percent of total social media "buzz" occurring at the end of the first quarter of the campaign duration.

Control Variables

Previous studies in the crowdfunding context suggest additional variables outside my own theoretical lens that may impact crowdfunding project success. Existing work investigating microloans (Zhang and Liu 2012), altruistic crowdfunding (Burtch et al. 2013) and rewards-based crowdfunding (Colombo et al. 2015) has found that individuals are likely to contribute to projects that already have a number of backers. This suggests that the number of backers associated with a project will have a significant impact on funding success. Therefore, I control for the impact of *number of contributors*. Additionally, research in both the advertising (Friestad and Thorson 1986) and venture financing (e.g. Brundin et al. 2008; Chen et al. 2009) suggest that affective tone may impact decision-makers cognition and behaviors. This view is supported by findings that

linguistic cues play a significant role in micro-lending motivation (Allison et al. 2014). Therefore, I also controlled for the impact of *affective tone of the project pitch* when running my own analyses. Affective tone was captured using LIWC 2007, a linguistic analysis software which uses previously validated dictionaries (Tauszik and Pennebaker, 2010) to capture the use of affective processing words within a set of text. Using LIWC, an affective score was assigned to each project based upon the use of affective processing words (e.g. “brilliant”, “heartwarming”, “terrible”, or “alarming”) used in the project pitch.

Chapter 5: Analyses and Results

To examine the effect of crowdfunding project environment cues on crowdfunding success, I employed ordinary least squares (OLS) regression, which enabled me to model both main effects and interaction effects. As I am not measuring a path model, OLS regression is a more appropriate method of analysis than a structured model such as partial least squares or structured equation modeling. Despite the time effects predicted in the last four hypotheses, the dependent variable is not time-based. Because of this constraint, a hierarchical linear model was also not appropriate.

Several assumptions needed to be checked to ensure that OLS regression was appropriate given the data I was testing.

- Linear relationships between predictor and outcome variables
- Non-zero variance in the values of the predictors
- Normally distributed data
- Homogeneity of variance
- Independence of independent variables
- Independence of observations

Figure 3 shows scatterplots of the relationships between the independent variables (vividness, structuredness, project team, and social media "buzz") and the dependent variable, total funds raised. Descriptive statistics and correlations are reported in Table 4. Several steps were taken to ensure the normality of the data. First, 14 outliers were removed with total funds greater than 10 standard deviations from the mean. Next, the nature of the crowdfunding context resulted in data that was significantly positively skewed (Figure 4). Therefore, as recommended by scholars (e.g., Field, 2009; Tabachnik

and Fidel, 1996), the affected variables, including the number of contributors, vividness of project pitch, structure of project description, and social media "buzz" were transformed by adding a constant (1) and taking their natural log (Figure 5). Correlation between standardized predicted values and the standardized residuals was very small and non-significant, suggesting there is no systematic bias in the relationship. Tests for multicollinearity and auto-correlation are included in the discussion of the statistical analyses below.

Table 4: Descriptive Statistics and Correlations

	Mean	Std. Dev.	1	2	3	4	5	6	7	8
Total Funds Raised	2378.52	4173.76	1							
Number of Contributors	33.39	51.40	**.701****	1						
Affective Tone	5.15	1.93	-.021	.001	1					
Vividness	6.13	8.83	**.319****	**.212****	-.041	1				
Structuredness	4108.51	7571.36	**.395****	**.159****	-.083	**.414****	1			
Team Cues	1.15	1.01	**.203****	**.198****	.054	**.319****	**.207****	1		
Total Social Media "Buzz"	377.67	747.35	**.25****	**.381****	-.047	**.276****	**.191****	**.195****	1	
Social Media "Buzz" in 1st Quarter (% of total)	78.64%	2.1%	-.054	-.080	.013	-.031	-.013	-.061	-.056	1

**p < .01; *p < .05 level, n= 390

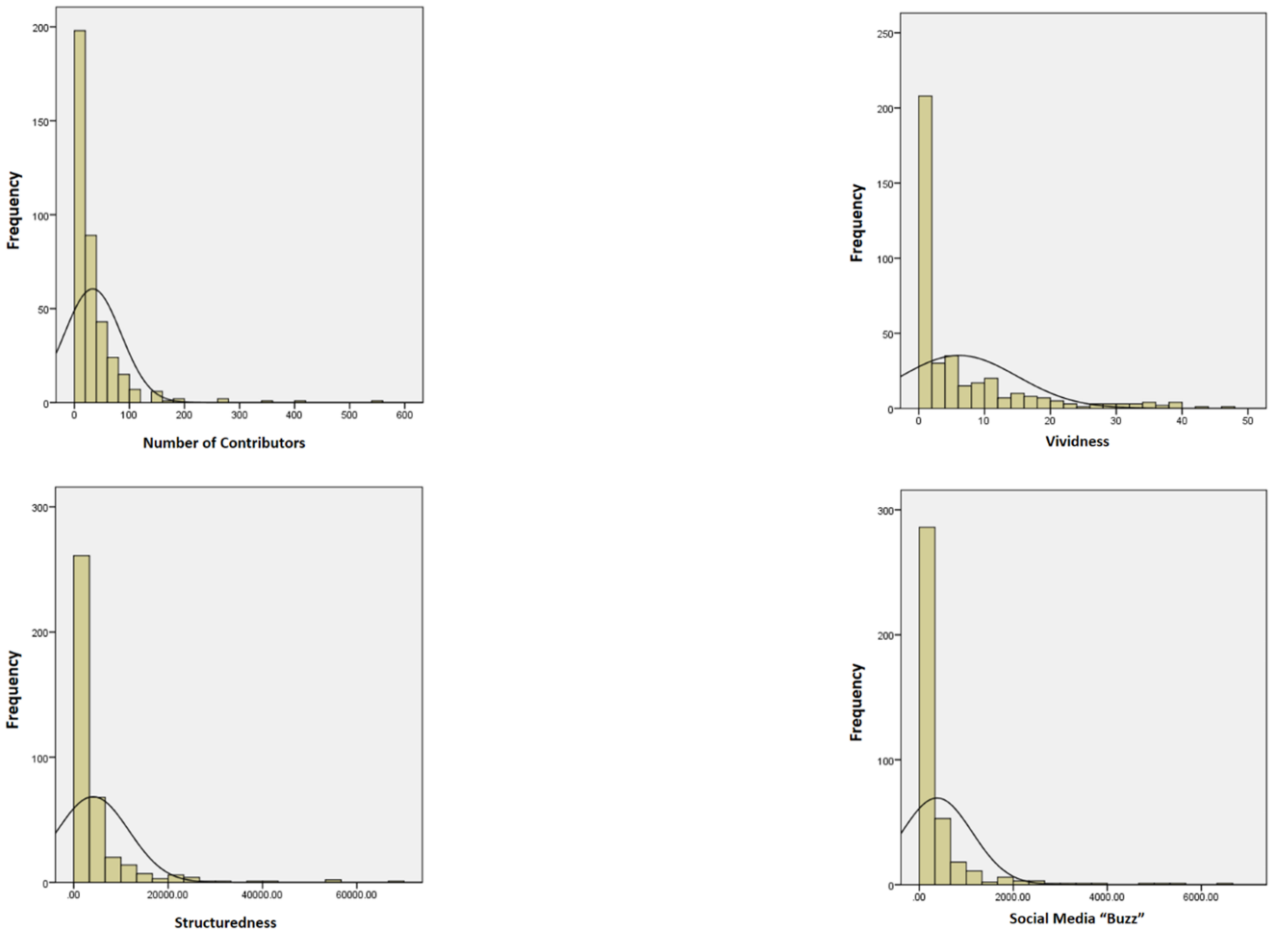

Figure 3: Histogram for Skewed Variables

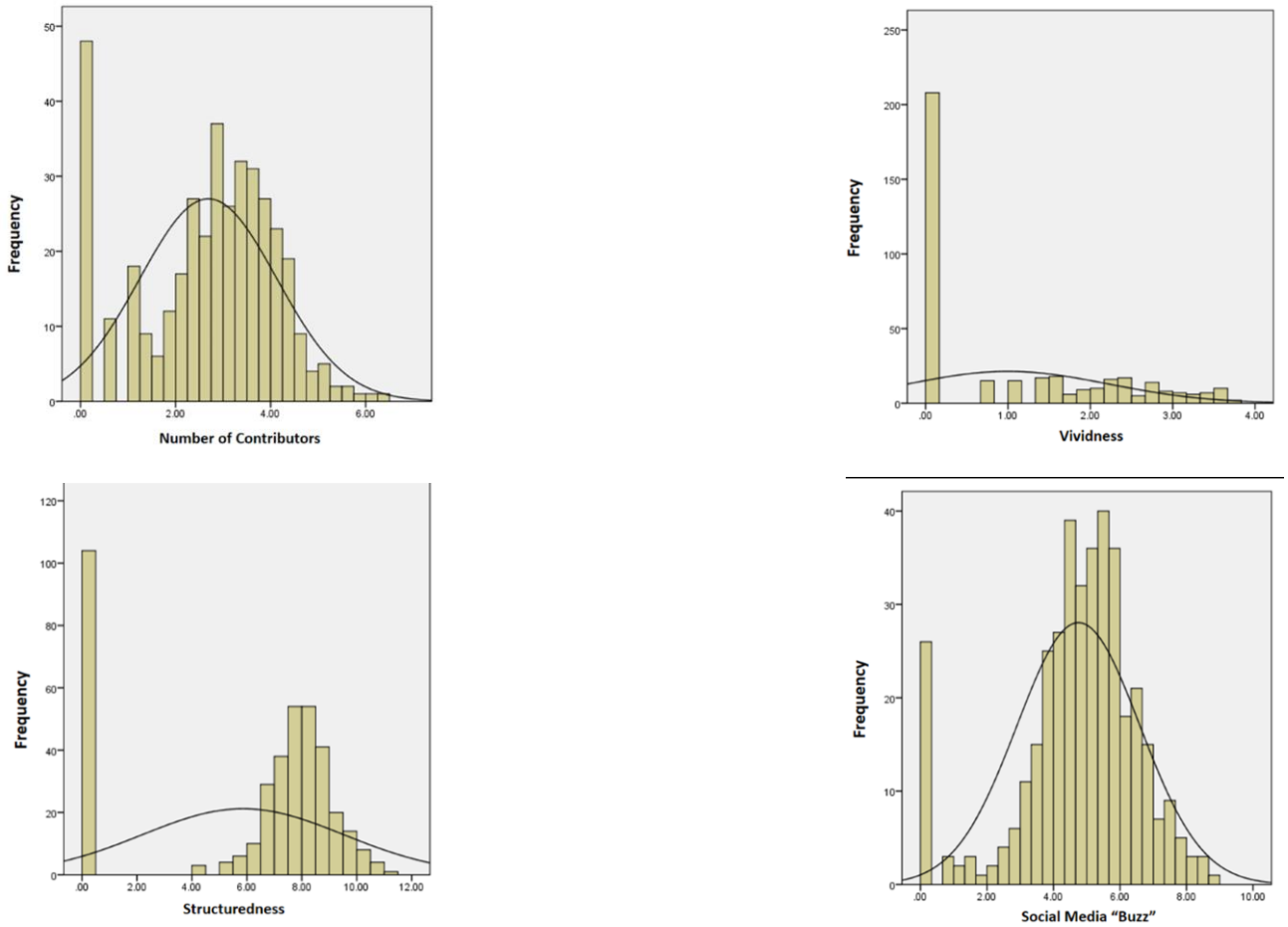

Figure 4: Histograms for Transformed Variables

Two sets of regression analyses were conducted to test the hypotheses, one to test the research model considering total social media "buzz" obtained during the entire duration of the project campaign and another to test the impact of high amounts of social media "buzz" received earlier rather than later in the campaign. Table 5 presents a summary of my findings. Results of the analyses are discussed below. The results of subsequent analyses testing the research model using percentage of the crowdfunding goal attained as an alternative dependent variable are presented in Appendix A[1].

[1] The research model containing total social media "buzz" explained only 19% of the variance in percent of goal attained [$F(10,379) = 10.314$, $p < .001$]. Interestingly, there were some differences in the models; particularly, the direction of several relationships are opposite of those in the model testing total funds.

Table 5: Summary of Findings

Hypothesis		Findings	Hypothesis Support
H1	Vividness	Greater vividness of imagery resulted in an increase in crowdfunding project total funds.	Supported
H2	Structuredness	No significant impact of textual structure on crowdfunding project total funds.	Not Supported
H3	Visibility of Team Cues	No significant impact of textual structure on crowdfunding project total funds.	Not Supported
H4	Volume of Social Media "Buzz"	No significant impact of social media "buzz" on crowdfunding project total funds.	Not Supported
H5a	Vividness x Structuredness	A well-crafted project pitch, containing high levels of vivid imagery and textual structure resulted in an increase in crowdfunding project total funds.	Supported
H5b	Vividness x Social Media "Buzz"	No significant interaction effect of vividness of imagery and social media "buzz" on crowdfunding project total funds.	Not Supported
H5c	Structuredness x Social Media"Buzz"	The interaction between textual structure and social media "buzz" resulted in lower total funds for the crowdfunding project.	Not Supported
H5d	Project Team Cues x Social Media "Buzz"	Visible project team cues interacted with social media "buzz" to increase crowdfunding project total funds.	Supported
Effects of Social Media "Buzz" Early Rather than Later in the Campaign			
H6	Direct Effect of Social Media "Buzz"	No significant impact of greater social media "buzz" received early in the campaign versus late on crowdfunding project total funds.	Not Supported
H7a	Vividness x Social Media "Buzz"	No significant impact of the interaction between vividness of imagery and social media "buzz" received early in the campaign rather than later on total funds for the crowdfunding project.	Not Supported
H7b	Structuredness x Social Media "Buzz"	The interaction between textual structure and social media "buzz" received early in the campaign rather than later resulted in increased total funds for the crowdfunding project.	Supported
H7c	Project Team Cues x Social Media "Buzz"	No significant impact of the interaction between visible team cues and social media "buzz" received early in the campaign rather than later on total funds for the crowdfunding project.	Not Supported

The results of an OLS regression analysis examining the effects of the control variables and both direct and interaction effects on total funds raised are shown in Table 6. The first model, containing the control variables—number of contributors and affective tone—accounts for 31% of the variance in total funds raised for a project. [$F_{(2, 387)} = 86.781$, Adjusted $R^2 = .306$, $p = .000$]. The second model, which includes the project design cues (vividness and structuredness) and project social cues (project team cues and social media "buzz") explains an additional 4% of the variance [$F_{(6, 383)} = 34.692$, Adjusted $R^2 = .342$, $p = .000$]. The final model, accounting for the additional interactions between vividness of project pitch and structure of project description; vividness and social media "buzz"; structuredness and social media "buzz"; and project team cues and social media "buzz", explains 41% [$F_{(10, 379)} = 25.570$, Adjusted $R^2 = .406$, $p = .000$] of the variance in the amount of total funds raised for a crowdfunding project. A Durbin-Watson test was close to two (2.13); therefore, the assumption of independent errors was satisfied. Additionally, variance inflation factors and tolerance statistics were within the appropriate levels (Myers 1990) for all independent and interaction variables in the models, indicating that multicollinearity was not a problem.

As expected based upon prior literature, in model one, the number of contributors (ß=.558, t=13.165, p<0.001) to the project did have a positive, significant impact on total funds raised for a project. However, despite evidence suggesting affect and emotion might influence funder perceptions of a project, use of affective tone in the project pitch did not have a significant impact on total funds raised.

Hypotheses Related to Design Cues

Model 2 regressed the direct effects of project environment design and social cues in addition to the control variables. The first hypothesis predicted a positive relationship between vividness of the crowdfunding project pitch and total funds raised during the crowdfunding campaign. Vividness does have a significant and positive relationships with the amount of funds (ß=.180, t=3.895, p<0.001). Thus, hypothesis 1 was supported. Hypothesis 2 predicted a positive relationship between the textual structure of a crowdfunding project pitch and total funds raised. Despite the positive relationship (ß=.055, t=1.268, p=0.206) this relationship was not significant; hence, this hypothesis was not supported.

Hypotheses Related to Social Cues

The model also failed to show support for hypothesis 3 and hypothesis 4. Hypothesis 3 predicted a positive relationship between cues about the crowdfunding project team and total funds raised. This relationship was positive, but not significant (ß=.034, t= .755, p=0.451). Additionally, the relationship between social media "buzz" and total funds raised was negative, but not significant (ß=-.111, t= -1.932, p=.054).

Hypotheses Related to Interactions between Project Cues

Hypotheses 5a, 5b, 5c, and 5d predicted interaction effects between the project environment cues and total funds raised. Model 3 tested these additional impacts, beyond those of the control and direct effects, on total funds raised. Hypothesis 5a predicted that a well-crafted project pitch, consisting of highly vivid imagery and well-structured text, would have a positive relationship with total funds raised. Model 3 demonstrates a positive, significant impact of the interaction between vividness and structuredness on

total funds raised (ß=.367, t=6.380, p<0.001), supporting hypothesis 5a. However, this model did not show a significant relationship between the interaction of vividness and social media "buzz" (ß= -.066, t= -.799, p=.425) on total funds raised. Therefore, hypothesis 5b was not supported. Hypothesis 5c predicted that the interaction between structuredness and social media "buzz" would have a positive impact on total funds raised. Interestingly, the results of the regression showed a significant, *negative* impact of the interaction on total funds raised (ß= -.302, t=-3.294, p=.001), failing to support hypothesis 5c. Finally, the interaction between project team cues and social media "buzz" (ß=.349, t=3.873, p<.001) was positive and significantly related to total funds as predicted by hypothesis 5d.

Table 6: OLS Regression Results - Total Funds Raised

	DV: Total Funds Raised		
	Model 1	Model 2	Model 3
Number of Contributors	.558**	.564**	.564**
Affective Tone	-.064	-.055	-.033
Vividness		.180**	.062**
Structuredness		.055	.009
Project Team Cues		.034	-.030
Social Media "Buzz"		-.111	-.155
Vividness* Structuredness			.367**
Vividness* Social Media "Buzz"			-.066
Structuredness* Social Media "Buzz"			-.301**
Team* Social Media "Buzz"			.349**
R^2	.310	.352	.421
Adjusted R^2	.306**	.342**	.406**

***p<0.01; *p<0.05;* n=389

A second set of OLS regressions were run to test hypotheses 6, 7a, 7b, and 7c related to the impact of early versus late social media "buzz". The results are presented in Table 7. As before, Durbin-Watson test (2.24) confirmed that auto-correlation was not a problem in this model. Similarly, tests confirmed there was no perfect multicollinearity between the independent and interaction variables.

In this model the percentage of social media "buzz" generated during the first quarter of the campaign duration was used as the independent variable. As before, the full model containing controls, main effects and interactions explained 40% of the variance in total funds raised [$F_{(10, 379)} = 27.334$, Adjusted $R^2 = .404$, $p = .000$]. Similar to the model using total social media "buzz", the number of contributors (ß=.518, t=11.508, p<0.01) and vividness (ß=.139, t=2.464, p=.014) both had a positive and significant impact on total funds raised.

Hypotheses Related to Time (Early Social Media "Buzz")

Hypothesis 6 predicted that early social media "buzz" would have a stronger impact than social media "buzz" later in the campaign. However, the direct effect of early social media "buzz" on total funds raised, while positive, was not significant in the main effects model (ß=.003, t=.061, p=.952). Therefore, hypothesis 6 was not supported.

Hypothesis 7a – 7c predicted that early social media "buzz" (compared to late social media "buzz") would have a significant impact on total funds raised when interacting with vividness (7a), structuredness (7b) and visible team cues (7c). Structuredness, when combined with social media "buzz" early in the campaign, had a significant and positive effect on total funds raised (ß=.269, t=4.372, p<0.01). Therefore, of the three interactions hypothesized, only hypothesis 7b was significant in this model. Interestingly, the impact of this interaction (between structuredness and social media "buzz" early in the campaign) on total funds raised was in the opposite direction compared to total social media "buzz" generated (as seen in the first set of models).

Table 7: OLS Regression Results - Total Funds Raised (Early Social Media "Buzz")

	DV: Total Funds Raised		
	Model 1	Model 2	Model 3
Number of Contributors	.558**	.516**	.518**
Affective Tone	-.064	-.058	-.032
Vividness		.170**	.139**
Structuredness		.047	-.060
Project Team Cues		.028	.008
Social Media "Buzz" % 1st Quarter		.059	.003
Vividness* Structuredness			.082
Vividness* Social Media "Buzz" % 1st Quarter			-.112
Structuredness* Social Media "Buzz" % 1st Quarter			.269**
Team* Social Media "Buzz" % 1st Quarter			.022
R^2	.310	.349	.419
Adjusted R^2	.306**	.339**	.404**

***p<0.01; *p<0.05;* n=389

Chapter 6: Discussion

The rewards-based crowdfunding environment provides a unique context for understanding the impact of social influence in online environments. As Belleflamme, Lambert and Schwienbacher (2012) state, "Crowdfunding helps entrepreneurs adopt new approaches of undertaking entrepreneurial projects and managing ventures, which in turn leads to new forms of business development in which the "ordinary" crowd gets more closely involved in these firms, as active consumers, investors, or both." (p. 2) Building upon the complementarities between the internet-based consumer purchasing and venture financing perspectives of crowdfunding, and drawing from theory on store environment and the literature on eWoM and social media, my research provides a parsimonious model for understanding factors that impact crowdfunding project success. This online context also enables an expansion of the traditional focus on the funders as the "crowd" who controls project success, wherein the success of a project is a function of the social interaction between the project team, the funders, and others in the community who engage with the project through eWoM, in the form of social media "buzz". The results of my study indicate that a successful crowdfunding project must recognize the complimentary, and sometimes counter-acting cues influencing funding decisions and crowdfunding project success. Specifically, my research resulted in three key findings, by which I organize the ensuing discussion:

- Vividness matters, particularly when combined with a well-structured pitch.
- Neither discourse by others (social media "buzz") nor project team attributes/skills matter in isolation, but in combination they do.

- For a well-structured pitch, too much social media "buzz" has a negative effect on funding, particularly later in the campaign.

Discussion of Results

The outcomes from my study offer some insight into the research questions with which I started. I find that some crowdfunding project cues matter more than others; specifically, vividness of the project pitch has the most direct impact on total funds raised. In this study, the findings show a distinct separation between crowdfunding project design cues and social cues. Design cues served to enhance the impact of other design cues, while social cues enhanced the impact of other social cues—the two did not mix. The impact of a vivid project pitch was greatest when combined with a structured project description. Electronic word-of-mouth, in the form of social media "buzz" and acting as a type of social cue, also served to impact total funds raised. However, this impact occurred in tandem with other cues within the environment and may be considered a "double-edged sword." In particular, greater social media "buzz" along with more project team cues increased project funding. In contrast, however, greater social media "buzz" along with well-structured pitches decreased funding over the life of the project. Interestingly though, early social media "buzz" in conjunction with well-structured pitches increased funding, but over time it seemed to become "too much of a good thing" and impacted funding negatively.

A well-designed project pitch: vividness and structuredness

The store environment model posited that "design cues," or cues related to visual displays, signs and artifacts within the store will serve as stimuli, evoking cognitive or affective responses in consumers (Baker 1987; Bitner et al. 1992). Building upon the

idea of design cues from the store environment model (Baker 1987), the marketing (e.g. Lurie and Mason 2007; Martin et al. 2005) and information systems (e.g. Adelaar et al. 2003; Jiang and Benbasat 2007) literature on online environments have suggested that information presented visually, textually, or in combination, can influence consumer responses. Theory in these areas suggests that a crowdfunding project pitch will be most effective when it contains highly vivid imagery to stimulate funder interest (Jiang and Benbasat 2007) and presents textual information in such a way as to be easily digested (Adipat et al. 2011).

The outcomes of my study generally corroborate these results in the rewards-based crowdfunding context as well, and provide some additional insights. Interestingly, project funders are directly influenced by some cues more than others. *The vividness of imagery used in a project pitch matters, particularly when combined with a well-structured pitch.* The results of my analysis indicate that, of the four types of cues considered in my research model (vividness, structuredness, project team, and social media "buzz"), vividness is the only cue that has a direct impact on total funds raised by a crowdfunding project. This result may be explained after taking into account the research finding that vividly presented information is weighted more heavily in memory than information conveyed in other fashions (e.g. Taylor and Thompson 1982). Thus, vividness may create a "halo" effect which "carries over first impressions of products or shopping environments to consumer evaluations of other attributes of these products or environments." (Tractinsky and Lowengart 2007: 4)

The complementary impact of vivid imagery and a well-structured project pitch (Lim et al. 2000) is also verified in my analysis. The interaction between vividness and

structuredness served to increase funding above and beyond that of the direct effect on its own. Together, this demonstrates that both visuals and text must tell a compelling story in order for a project to be most effective. In other words, this may be a case where combining "expressive" and "classic" (e.g. Lavie and Tractinsky 2004) cues serve to meet a funder's need for both form and function in a project pitch. This finding further supports the perspective of rewards-based crowdfunding as a type of "purchase," where the presentation of the product (e.g. Blanco et al. 2010; Kim and Lennon 2008)—through design cues in the project pitch—provide information to funders about the quality of the reward they will receive in return for their contribution. Vivid images provide a sense of realism, illustrating how the product looks and works. Complementing those cues, the descriptive text highlights important characteristics of the product. This finding verifies that funders are likely to make funding decisions based upon rational cues regarding the quality of the project. The crowdfunding projects with high-quality pitches, garnering interest through vivid imagery and providing easily accessed information, are the most likely to be successful in attaining funds.

A social environment: social media "buzz" and project team cues

The store environment model used in physical stores presents a more comprehensive set of cues than is used in much of the online store research today, taking into account multiple senses and the social nature of the physical shopping environment (Baker et al. 1994). The concept of "ambient cues," or those related to senses other than vision, has been briefly touched upon in the information systems literature (e.g. Everard and Galletta 2006). Yet, the impact of other individuals within the online environment

(i.e. "social cues"), while rarely considered in this stream of research, is of particular relevance in a social phenomenon such as crowdfunding.

As argued earlier, marketing research suggests that social cues, in the form of salesperson visibility and helpfulness, will stimulate positive consumer responses in a physical store (Baker et al. 1994). The risk associated with contributing to a rewards-based crowdfunding project further suggests that funders may treat it as an "investment," and consider both the aspects of the project *and* information about the project team to make a decision on the likelihood of return for their contribution (e.g. Busenitz et al. 2005; MacMillan et al. 1986).

The advent of social media technology offers eWoM as an additional type of social cue not available in physical store environments. Research in the physical store environment only peripherally references other customers, yet the literature on eWoM suggests that individuals are strongly influenced by their peers when making purchasing decisions online (e.g. Chevalier and Mayzlin 2006; Dewan and Ramaprasad 2014). Through social media widgets, the response of the community (i.e. social media "buzz") is a dynamic and prominent cue within the crowdfunding environment.

The results of my study present some interesting contrasts to what venture financing theory and the eWoM literature would suggest. Based upon my findings, *neither project team attributes nor the extent of community discourse (social media "buzz") matter in isolation, but in combination they do; so, greater social media "buzz" burnishes the impact of project team credentials in influencing funding*.

The interaction between social cues (project team cues and social media "buzz") in my research model positively impacted total funds raised. Projects in which the project

team displayed information about their appearance, experience in crowdfunding, and willingness to respond to the community in combination with greater interest from the community through social media "buzz" received more funds than those that did not. This finding serves to verify that, despite a previous lack of research in online settings, social cues do play a significant role in the crowdfunding setting. While neither is effective on its own, together these social cues show that funders are considering personal factors when making funding decisions, considering the attributes of the project team and verifying the credibility of those attributes by taking into account the support of the community.

The "investment" aspect of rewards-based crowdfunding becomes apparent with these findings. In an investment environment, a funder is likely to look at whether or not the project team is capable of ensuring a return for an investment as well as taking into account what others in the community are saying about the investment opportunity. As opposed to the "purchasing" aspect of design cues--in which cues about the quality of the *product* are important—the investment aspect focuses on social cues as indicators of the quality of the *project* through cues about the quality of the project team and verification of the project quality by the crowdfunding community. I find both of these elements in effect in the crowdfunding environment; the combination of more complete cues about the team along with greater social media "buzz" about the project resulted in the highest funds generated.

Social media "buzz" - a double-edged sword

While the literature on eWoM strongly suggests that volume of eWoM will play a significant role in influencing outcomes, the results of my study suggest limits to the

impact of eWoM in the form of social media "buzz." Electronic word-of-mouth has been found to have a direct impact in both internet-based consumer purchasing (e.g. Chevalier and Mayzlin 2006; Duan et al. 2008; Lu et al. 2013) and venture financing environments (Aggarwal et al. 2012). Additionally, eWoM is thought to serve as a signal of legitimacy, enhancing the impact of existing information cues (Ha and Im 2012).

Although the interaction between social media "buzz" and structuredness did significantly impact total funds, the relationship was negative. High levels of social media "buzz," when combined with a well-structured pitch actually hindered a project's ability to garner funds. The interaction between vividness and social media "buzz," while insignificant, was also negatively related to funding, suggesting that social media "buzz," as originally thought, may not always burnish the impact of well-structured pitches. One explanation for this relationship may be that providing quality design cues in addition to greater attention from the community may be a case of "too much of a good thing." Research in the marketing literature suggests that individuals considering multiple options may actually be hindered by optimized search choices in addition to quality cues (Diehl 2005). When faced with a product which is highlighted as high quality by others, individuals may be led to compare the information offered within the product description to other options. This comparison leads to decision fatigue and reduces the consumer's ability to make the best choice. In the crowdfunding context, a great deal of social media "buzz" may indicate that a project is of high quality. However, further indicators of quality easily accessed through a well-structured pitch may encourage a potential funder to consider more options. In the end, decision fatigue results in a less-optimal choice of project quality.

Similar to results from the model containing total social media "buzz", I found that garnering higher amounts of social media "buzz" early rather than later in the campaign had no direct impact on total funds raised for a project. However, in contrast to findings from the previous model, the interaction between a well-structured pitch and early social media "buzz" actually resulted in greater total funding for the project. This result further supports the argument that high levels of total social media "buzz" may eventually become "too much of a good thing;" yet, at the beginning the combination is enough to encourage funders to contributed to the project. This effect might be compared to the booster effect of a rocket in a space launch; the vehicle needs the initial burst of energy provided by the rocket to achieve orbit, but eventually the booster rocket is removed to prevent the weight from negatively impacting the launch.

In contrast to existing arguments my findings suggest that, *for a well-structured pitch, too much eWoM in the form of social media "buzz" had the opposite effect – well-structured pitches combined with a lot of social media "buzz" had a negative effect on funding, particularly after the initial boost of social media "buzz" at the beginning of a campaign*. Given these findings, social media "buzz" may be considered a double-edged sword-- enhancing the impact of social cues about the project team, but hindering the impact of design cues conveyed through a well-structured pitch.

Theoretical Contributions

This research presents several contributions to theory in the crowdfunding, store environment and eWoM literatures. First, I contribute to theory building in crowdfunding by presenting the store environment model as a complementary and valuable lens for investigating rewards-based crowdfunding. The limited research in this area has

primarily focused on exploratory analyses (e.g. Mollick 2014). Much of the existing theoretical work in the area has focused on alternative types of crowdfunding such as donation-based crowdfunding (Burtch et al. 2013; Jian and Usher 2014), micro-lending (Lin et al. 2009) or equity-based crowdfunding (Belleflamme et al. 2012). Looking at popular rewards-based crowdfunding platform Indiegogo.com, I find that the similarities crowdfunding has to internet-based consumer purchasing and new venture funding suggest that crowdfunding participants make decisions based upon cues of quality within the crowdfunding pitch. The store environment model provides a framework for understanding what types of cues may impact funder decision making, including crowdfunding project *design* cues (e.g. vividness and structuredness) and also crowdfunding project *social* cues (e.g. project team cues and social media "buzz"). Further, I find that cues within the crowdfunding context interact with one another based upon type of cue; project design cues interact with one another to positively impact funding just as project social cues also interact with cues of the same type.

The results of my study suggest that the store environment model is a productive theoretical area for application in crowdfunding contexts. In particular, the store environment model applied to rewards-based crowdfunding suggests that not all efforts a project team makes to promote the quality of a crowdfunding project are equal. Therefore, it is important to understand how different types of cues may serve to influence funders. Although my research focused on the rewards-based crowdfunding environment model as similar to online and physical retail environments, the theoretical model may be applied to other types of crowdfunding in order to delineate the types of cues most impactful in other crowdfunding environments (e.g. altruistic-based crowdfunding,

equity-based crowdfunding, or micro-lending). In addition, the crowdfunding environment can be viewed as a metaphor for a store environment, where a funder is exposed to multiple cues simultaneously which interact to influence the success of a crowdfunding project. As expected based upon prior research in both physical (Baker et al. 1994) and online environments (e.g. Eroglu et al. 2001; Jiang and Benbasat 2010), design cues do have a direct, positive impact crowdfunding outcomes, which are consistent with the store environment model. Vividness, in particular, was strongly related to total funding in this context. Interestingly, the direct impact of structuredness was not significant, but the results of my study corresponded with research that suggests the complementarities between visual and textual cues (e.g. Lim et al. 2000). These findings further emphasize the similarities between the crowdfunding environment and internet-based consumer purchasing. Therefore, the consumer behavior literature stream may be a valuable avenue for informing theory development in the crowdfunding area.

Next, I contribute to theory on store environment by addressing a broader range of cues than has been previously studied in the information systems literature on online environments. The majority of research in online environment or "atmospherics" in both information systems (Blanco et al. 2010; Eroglu et al. 2001) and retailing literature (Kawaf and Tagg 2012; Kim and Lennon 2008) have focused on the design cues available through the technology. Although, the impact of project team cues did not directly impact funding, new technology (live chat, avatars, moderators in online communities, etc.) makes the salespeople ever more visible in online settings. With today's technology we see an online environment that imitates the physical store more than ever, and therefore need to embrace theory adapted from those environments more fully. These findings

provide further support for the validity of the store environment model in crowdfunding contexts. Research in both physical stores (Baker et al. 1994) and also in venture financing environments (Busenitz et al. 2005; MacMillan et al. 1986) find that social cues, regarding salespeople or entrepreneurial teams, respectively, influence attitudes and behaviors of decision-makers. My results also indicate the importance of social cues in crowdfunding outcomes. However, my results suggest that team cues are not as impactful on their own in the crowdfunding context as in either physical retailing or venture financing contexts. Therefore, the applicability of the store environment model to this context should focus on the interactions between environment cues rather than focusing solely on their individual impacts.

Then, I highlight the importance of eWoM in the form of social media "buzz" as a type of social cue, enabled by technology in online environments. By making the extent of discourse by the community immediately visible to a crowdfunding participant, social media "buzz" becomes a prominent cue within the environment whereas traditionally the impacts of other customers would be more peripheral. Despite the extensive support for the impacts of eWoM in online settings, it has not been considered an integral part of the store environment model.

Additionally, although the supporting literature streams of consumer behavior and venture financing have long touted eWoM as a major factor in decision-making, the effects of eWoM, and social media "buzz" in particular, has not been considered in the crowdfunding context. The results of my study suggest that social media "buzz" should be considered as an important factor in crowdfunding success.

Finally, despite a strong history of theoretical and empirical work focused on eWoM impacts, there is a lack of research accounting for the impact of eWoM as it relates to other factors within the environment. The findings of my research indicate that the direct impacts of eWoM volume may be overinflated when research models do not take into account how it interacts with other cues in the environment. I contribute to the eWoM literature by theorizing eWoM interaction effects and their impact organizational outcomes, thus eWoM serves to change the nature of the information cues offered and directed by the organization. Additionally, although social media eWoM has become increasingly important in recent history, the impacts of social media "buzz" have not yet been fully developed. The results of my research further supports the concept that social media "buzz" can influence organizational outcomes indirectly, by providing a visible cue of community discourse without reference to the content of the discussion.

Practical Implications

This research also offers several practical implications for entrepreneurs in the crowdfunding environment. Crowdfunding platforms often offer several "best practices" to individuals setting up their crowdfunding campaign. This research shows some expected and unexpected effects of different types of crowdfunding cues.

First, this research provides strong support for Indiegogo's claim that project pitches containing videos are likely to receive more funding. My findings show that vividness within a pitch is highly and positively significant, taking into account all of the other cues within the environment. This would suggest that crowdfunders first need to concentrate on providing a sense of "realism" through videos and images.

Next, Indiegogo.com encourages crowdfunding project teams to "make [pitch materials] easy to digest." (Indiegogo.com, 2015) While my findings show that pitches that are both well-structured and vivid do increase funding, a large amount of social media "buzz" may work against the project team by reducing the efficacy of a well-structured pitch toward raising funds. Practically, this finding suggests that encouraging social media "buzz" is a positive move, but project team's should limit asking for "shares" or "tweets" beyond a certain point in the campaign duration.

My research also indicates that it is important for a project team to take the time to create visible signs of ability and quality of the project team in addition to the project itself. Often, project teams focus on the project pitch to the exclusion of these cues, failing to create a profile picture or not actively responding to the community. Although visibility of project team information did not directly impact funding, it interacted positively with social media "buzz" to increase total funds. My findings suggest that these relatively low-cost cues can be one way to encourage funders to contribute toward a project.

Finally, this study verifies the importance of recognizing rewards-based crowdfunding as encompassing aspects of both "investment" and "purchasing" environments. The project team should play to the strengths of their project. For a project in which the reward is the key selling point of the project, vividness and structuredness of the project pitch will provide the greatest return by indicating the quality of the product which funders will receive for their contribution. For a project where the rewards are offered as additional encouragement to support a particular project (e.g. a gallery or theater opening where the rewards are additional promotion), the project team should

make a strong effort to engage the community not only by conveying their commitment and abilities to complete the project successfully, but also by encouraging responses to the project by bystanders through social media "buzz".

Limitations and Future Research

There are several limitations to this research that open up avenues for future research in this area. First, the sample for this study was limited to three categories of flexible-funding projects. It may be valuable to investigate the impacts of different crowdfunding project cues on a broader range of project types. For instance, while this study focused on projects in the film, music and technology categories, these are all product driven projects, in which the rewards are typically a copy of an album, film or a piece of technology. Individuals contributing to service-driven projects, such as those that may be found in the food, education or health categories may be influenced more strongly by social cues indicating the support for the service rather than design cues describing the features of a product.

Next, my sample consisted of flexible-funding projects because I was primarily interested in the amount of funds a project was able to raise. Many platforms may not offer this option, allowing crowdfunding project teams to retain funds raised only if they reach the stated goal. Considering this, future research may compare the impact of crowdfunding project cues where the risk associated with failure to reach a goal is minimized.

Additionally, this study is solely focus on volume of eWoM, or social media "buzz," through the social media widgets displayed on the crowdfunding platform. The literature in this area has also indicated that the valence of eWoM may impact outcomes.

Future research may take an outside-in perspective and investigate the impacts regarding *what* is being said by the community and how it directs individuals to or from a crowdfunding project from external sites.

Finally, my research accounted for social media "buzz" across Facebook, Twitter, and Google+ as equally important to funders. Although recent work regarding social media has begun to identify differences across social media platforms (e.g. Kaplan and Heinlein 2011; Kietzmann, Hermkens, McCarthy and Silvestre 2011), the focus of most eWoM research has been on a single source of eWoM (e.g. Chevalier and Mayzlin 2006; Liu 2006; Li and Hitt 2008) or the aggregation of multiple sources of eWoM (Gu, Park and Konana 2012; Luo et al. 2013; Sonnier, McAlister and Rutz 2011). By operationalizing eWoM across multiple social media sources, future research could investigate the differential impacts of social media "buzz" and provide empirical support needed for theorizing in this context.

Summary and Conclusion

The findings of my work demonstrate how cues in the crowdfunding environment serve as stimuli to influence the contribution behavior of funders, and therefore impact a crowdfunding project's ability to raise funds. My findings suggest practical application for entrepreneurs using rewards-based crowdfunding as a means for venture funding. My findings indicate that a better crafted project pitch will be the most effective. In particular, I find that while a vivid pitch will draw interest to a project, it is most effective when combined with quality information cues through well-structured text. However, I also find that social media "buzz" can be considered a double-edged sword--working alongside project team cues to signal the viability of the project and the ability of the

project team, yet diminishing the impact of a well-structured pitch once the initial burst of support is over. These results support the perspective of the rewards-based crowdfunding environment being imbued with aspects of both new venture funding and internet-based consumer purchasing. As in consumer purchasing, information about the product offered in return for a contribution is conveyed through design cues in the product description; as in new venture funding, information about the viability of the project and abilities of the project team are conveyed through social cues in the project pitch and in the discourse by the crowdfunding community. Through my work, I contribute to theory in crowdfunding, store environment, and eWoM by showing the importance of store environment cues—both design and social—and their impact in the dynamic and socially integrated environment that is rewards-based crowdfunding.

The crowdfunding phenomenon has garnered the interest of the public, appealing to both small business entrepreneurs and big business investors across the world. Indeed, the potential of crowdfunding as a major player in business markets is signified in the extreme growth of the market, expected to reach up to $93 billion in the next 10 years (Swart 2013). Classifying crowdfunding as a "game-changer" in the world of new venture finance becomes even more apt as we consider not only the expansion of the boundaries of the new venture financing market but also the increasing role of the crowd in determining which ventures will be successful. Whereas a traditional new venture transaction takes place between an entrepreneurial team and a small set of investors, crowdfunding financing includes interactions between an entrepreneurial team, a broad range of investors, and interested bystanders within the community. Particularly important, then, is developing an understanding of the similarities and differences

between what has worked in traditional new venture financing and this new financing market. My research in rewards-based crowdfunding serves as a start to this effort, emphasizing the important dynamic between cues used to signify quality in traditional venture financing environments and technology-enabled cues available within the crowdfunding environment.

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Appendix A: OLS Regression Results (Percent of Goal Attained)

This appendix shows the results of an OLS analysis testing the research model using the dependent variable percent of goal attained. Model 3, shown in Table A1, accounts for control variables (number of contributors and affective tone), direct effects (vividness, structuredness, project team cues and social media "buzz"), and the additional interactions between vividness of project pitch and structure of project description; vividness and social media "buzz"; structuredness and social media "buzz"; and project team cues and social media "buzz". This model explains 23% [$F_{(10,\ 379)}$ = 12.343, Adjusted R^2 = .226, p = .000] of the variance in the percent of funding raised toward a crowdfunding project goal.

Similar to the model using total funds as a dependent variable, this model also indicates a positive impact of the interaction between project team cues and social media "buzz" (ß= .342, t=3.326, p=.001). However, whereas the model in Table 6 indicated negative and significant effects of the interaction between structuredness and social media "buzz," this model indicates that the interaction between vividness and social media "buzz" plays a stronger role when considering percent of goal attained (ß= -.295, t=-3.107, p=.002).

Table A1: OLS Regression Results - Percent Goal Attained

	DV: Percent Goal Attained		
	Model 1	Model 2	Model 3
Number of Contributors	.392**	.529**	.577**
Affective Tone	-.060	-.068	-.054
Vividness		-.184**	-.119**
Structuredness		.020	.010
Project Team Cues		.061	-.011
Social Media "Buzz"		-.156	-.254**
Vividness* Structuredness			-.097
Vividness* Social Media "Buzz"			-.295**
Structuredness* Social Media "Buzz"			.117
Team* Social Media "Buzz"			.342**
R^2	.153	.196	.246
Adjusted R^2	.149**	.183**	.226**

***p<0.01; *p<0.05;* n=389

A second OLS analysis, shown in Table A2, examines the impact of social media "buzz" over the duration of the campaign on the dependent variable percent of goal attained. The third model accounts for control variables (number of contributors and affective tone), direct effects (vividness, structuredness, project team cues and percent of total social media "buzz" garnered in the first quarter), and the additional interactions between vividness of project pitch and structure of project description; vividness and early social media "buzz"; structuredness and early social media "buzz"; and project team cues and early social media "buzz." Interestingly, the interaction model [$F_{(10, 379)} = 9.062$, Adjusted $R^2 = .172$, $p = .590$] does not explain significantly more of the variance in percent of goal attained than the direct effects model (Model 2) [$F_{(6, 383)} = 14.679$, Adjusted $R^2 = .174$, $p = .004$]. Based upon this, we see that while vividness has a negative and significant impact on percent of goal attained when considered alongside social

media "buzz" early in the campaign (ß= -.130, t=-1.962, p<.050), none of the hypothesized interactions significantly impacted how close the project came to achieve the project funding goal.

Table A2: OLS Regression Results - Percent Goal (Early Social Media "Buzz")

	DV: Percent Goal Attained		
	Model 1	Model 2	Model 3
Number of Contributors	.392**	.408**	.415**
Affective Tone	-.060	-.070	-.075
Vividness		-.189**	-.130*
Structuredness		.014	.021
Project Team Cues		.036	.031
Social Media "Buzz" % 1st Quarter		-.063	-.058
Vividness* Structuredness			-.092
Vividness*Social Media "Buzz" % 1st Quarter			-.054
Structuredness*Social Media "Buzz" % 1st Quarter			.038
Team*Social Media "Buzz" % 1st Quarter			.029
R^2	.153	.187	.193
Adjusted R^2	.149**	.174**	.172

***p<0.01; *p<0.05;* n=389

Appendix B: Results of the Pilot Study

A pilot study was conducted to test the first four hypotheses-- related to direct effects of project environment cues (vividness, structuredness, project team, and social media "buzz") --and three of the interaction effects (social media "buzz" combined with vividness, structuredness, and project team cues). The sample for the pilot study contained 95 completed Indiegogo.com projects, across multiple project categories. Data was collected for each project after the fund-raising campaign was over. This data, representing a snapshot of project data after the fourth quarter of a campaign, allowed me to test the variables described in the first seven hypotheses of the study. A selective sampling process was used, with a random sample of 48 projects from amongst projects having reached the state funding goal and a random sample of 47 projects take from amongst projects which did not. This sampling process was used to ensure sufficient variability in the dependent variable for the pilot study analysis. As shown in Table B1, the amount raised for projects in the sample ranged from $500.00 to $349,256.00, with the average project raising $21,367.32. The mean funding goal set by project teams was $28,525.41, with project campaigns active for 41 days on average.

Table B1: Pilot Study - Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
Total Funds Raised	95	$500.00	$349,256.00	$21367.32	53365.5434
Percentage of Goal Attained	95	.14%	3585.03%	124.70%	367.58360%
Goal	95	$500.0	$650,000.00	$28,525.41	$70,355.80
Number of Contributors	95	1.0	8361.0	277.968	913.8883
Number of External Endorsements	95	.0	11.0	.737	2.0011
Campaign Duration	95	7.00	90.00	41.0105	14.38194
Number of Words	95	.0	3326.0	886.021	605.4299
Number of Headings	95	.0	27.0	6.232	5.5418
Number of Visuals	95	.0	58.0	2.809	9.9498
Number of Videos	95	.0	11.0	1.221	1.6514
Project Team Size	94	1.0	25.0	2.809	3.1462
Number of Facebook "Shares"	95	.0	32000.0	1046.684	3417.5333
Number of Twitter "Tweets"	95	.0	2972.0	160.979	406.5857
Number of Google+ "Shares"	95	.0	426.0	18.874	55.6374
Valid N (listwise)	93				

Pilot Study – Results of OLS Analysis (Total Funds Raised)

An OLS regression was run to test hypotheses 1-4 and hypotheses 5b-5d on the dependent variable total funds raised. The first model, containing the control variables: number of contributors, external endorsements, funding goal and campaign duration accounts for 72% of the variance in total funds raised for a project. [$F_{(4, 88)} = 59.373$, $p = .000$]. The second model, which included the project design cues (vividness and structuredness), project team cues and electronic word of mouth explained an additional 13% of the variance [$F_{(10, 78)} = 7.392$, $p = .000$]. The final model, accounting for the interactions between project design and team cues and social media "buzz" in addition to the direct effects, explained 98% [$F_{(21, 57)} = 15.017$, $p = .000$] of the variance in the amount of total funds raised for a crowdfunding project. The regression coefficients for each model are shown in Table B2.

As expected based upon prior literature, in model three, the number of contributors (ß=.737, t=3.559, p=0.001) to the project did have a positive significant impact on total funds raised for a project. However, project goal, external endorsement, nor campaign duration significantly impacted total funds raised for the project.

Interestingly, vividness of project design cues did not significantly affect total funds. Similarly, although the second model showed a significant effect of headings on total funds (ß=.127, t=2.032, p=0.046), that relationship becomes non-significant with the inclusion of the interaction terms in model 3. Thus, H1 and H2 were not supported.

Two out of three measures of project team cues remained significant even after the inclusion of the interaction terms. While team size does not appear to impact total funds, team experience (ß=.294, t=2.447, p=0.018) was found to have a significant, positive impact. However, the direction of the relationship between team skill (ß=-.338, t=-2.876, p=0.006) and funds raised was in the opposite direction as hypothesized. These results provided mixed support for H3.

Similarly, the significant relationships between Facebook "shares" and Google+ "shares" and total funds raised remained after the inclusion of the interaction terms. However, mixed support was found for H4. Although Facebook "shares" (ß=.909, t=2.808, p=0.007) were positively related to total funds, Google+ "shares" had a negative impact on total funds raised.

Facebook "shares" and Twitter "tweets" did not have a significant moderating effect on measures of either vividness or descriptiveness of project design cues. However, a moderating, positive effect of Google+ "shares" suggested that funders drawn to the project through Google+ social media "buzz" are more likely to react positively to

projects who organize and promote their project pitch using textual headings (ß=.313, t=3.391, p=0.000) and videos (ß=.178, t=3.107, p=0.003). On the other hand, a greater number of Google+ shares diminished the effect of a longer pitch (ß=-.935, t=-2.255, p=.028), in which longer pitches when combined with high volumes of Google+ social media "buzz" were actually negatively related to total funds. These findings provided mixed support for hypothesis H4.

Although the direct effect of team skill on total funds was negative, the moderating effect of Facebook "shares" (ß=3.460, t=3.584, p=0.001) and Google+ "shares" (ß.647, t=2.607, p=0.012) enhanced the effect of skills so that it was positively related to total funds. The opposite occurred with team experience. Facebook "shares" (ß=-2.656, t=-2.828, p=0.006) and Google+ "shares" (ß=-0.596, t=-2.426, p=0.018) diminished the effect of experience such that there was a negative relationship with total funds. Team size was only impacted by Google+ "shares" (ß=0.363, t=2.233, p=0.029). These findings provided mixed support for H5b-H5d.

Table B2: Pilot Study - OLS Results (Total Funds)

	DV: Total Funds Raised		
	Model 1	Model 2	Model 3
Contributors	.803**	1.730**	.737
Project Goal	.027	.001	.010
Endorsements	.201**	.127*	.026
Campaign Duration	.088	.071	-.016
Total Words		-.072	-.153
Visuals		.087	.072
Videos		.026	.168
Headings		.127*	-.077
Team Size		.087	.103
Team Skill		.195*	.979**
Team Experience		-.211*	-.810**
Facebook "shares"		-.996**	1.049**
Twitter "tweets"		.089	-.053
Google+ "shares"		-.106**	.184
Facebook "shares" X Words			-.054
Facebook "shares" X Headings			-.138
Facebook "shares" X Images			.305
Facebook "shares" X Videos			-.165
Facebook "shares" X Team Skill			-.112
Facebook "shares" X Team Size			3.460**
Facebook "shares" X Team Experience			-2.656*
Twitter "tweets" X Words			.077
Twitter "tweets" X Headings			-.136
Twitter "tweets" X Images			-.115
Twitter "tweets" X Videos			.005
Twitter "tweets" X Team Size			-.265
Twitter "tweets" X Team Skill			.033
Twitter "tweets" X Team Experience			-.055
Google+ "shares" X Words			-.935*
Google+ "shares" X Headings			.313**
Google+ "shares" X Images			-.022
Google+ "shares" X Videos			.178*
Google+ "shares" X Team Size			.363*
Google+ "shares" X Team Skill			.647*
Google+ "shares" X Team Experience			-.596*
R^2	.703	.861	.979
Adjusted R^2	.717**	.836**	.966**

***p<0.01; *p<0.05;* n=92

Pilot Study - Results of OLS Model (Percent of Goal Attained)

A second OLS regression was run to test the first four hypotheses and three of the interaction effects on the dependent variable percent of funding goal attained. As before, three models were run. The first two models were insignificant. The third model, containing control variables, direct effects predictors and interaction terms explains 82%

of the variance in percent of goal attained [$F_{(35, 57)} = 12.946$, $p = .000$]. The regression coefficients for each model are shown in Table B3.

Given the dependent variable percent of funding goal attained, I found that the control variable number of contributors positively and significantly impacted funding outcomes (ß=2.208, t=4.653, p=0.000). However, project duration was negatively related to percent of goal attained (ß=-.128, t=-2.092, p=0.041), suggesting that having a longer campaign may actually be detrimental to reaching funding goals.

Of the four measures of project design cues, only number of videos was significantly related to percent of funding goal attained (ß=-.511, t=-.4190, p=0.000). Interestingly, this relationship was in the opposite direction hypothesized. Project team cues did not significantly impact percent of funding goal attained for a crowdfunding project. Thus, neither H1, H2 nor H3 were supported by this model. Only one measure of social media "buzz," Google+ "shares" (ß=-.395, t=-.553, p=.044), was significantly related to percent of goal attained, providing only a small measure of support for H4.

The model indicated an oppositional moderating effect of Facebook "shares" and Twitter "tweets" on vividness and descriptiveness of project design cues. While Facebook "shares" diminished the impact of headings (ß=-2.290, t=-6.952, p=0.000) and videos (ß=--1.098, t=-4.300, p=.000) on percent of funding goal attained, Twitter "tweets" enhanced their effects (Headings: ß=.979, t=4.137, p=.000; Videos: ß=.822, t=4.228, p=.000). These findings provided mixed support for H5b and H5c. Of the multiple measures for moderating effects of social media "buzz" on project team cues, only the moderating effect of Twitter "tweets" on team size was significant (ß=-1.200, t=-3.190, p=.002) and negative, failing to provide support for H5d.

Table B3: Pilot Study - OLS Regression (% Goal)

	DV: Percent of Goal Attained		
	Model 1	Model 2	Model 3
Contributors	.226*	.671	2.208**
Project Goal	-.125	-.103	-.002
Endorsements	-.005	-.003	-.034
Campaign Duration	.165	.215	-.128*
Total Words		-.007	-.102
Headings		-.164	-.125
Images		.110	-.027
Videos		-.048	-.511**
Team Size		-.030	.042
Team Skill		-.022	.221
Team Experience		-.038	.003
Facebook "shares"		-.390	-.395
Twitter "tweets"		-.099	.279
Google+ "shares"		-.022	-.887*
Facebook "shares" X Words			.087
Facebook "shares" X Headings			-2.920**
Facebook "shares" X Images			-.472
Facebook "shares" X Videos			-1.098**
Facebook "shares" X Team Skill			.912
Facebook "shares" X Team Size			-.778
Facebook "shares" X Team Experience			.956
Twitter "tweets" X Words			-.356
Twitter "tweets" X Headings			.979**
Twitter "tweets" X Images			.396
Twitter "tweets" X Videos			.822**
Twitter "tweets" X Team Size			-1.200**
Twitter "tweets" X Team Skill			-.074
Twitter "tweets" X Team Experience			.041
Google+ "shares" X Words			-.432
Google+ "shares" X Headings			.528*
Google+ "shares" X Images			.113
Google+ "shares" X Videos			.218
Google+ "shares" X Team Size			-.111
Google+ "shares" X Team Skill			.971
Google+ "shares" X Team Experience			-.248
R^2	.074	.129	.888
Adjusted R^2	.032**	-.027**	.820**

***p<0.01; *p<0.05;* n=92