



# The role of multidimensional social capital in crowdfunding: A comparative study in China and US<sup>☆</sup>



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## ABSTRACT

How does an entrepreneur's social network impact crowdfunding? Based on social capital theory, we developed a research model and conducted a comparative study using objective data collected from China and the U.S. We found that an entrepreneur's social network ties, obligations to fund other entrepreneurs, and the shared meaning of the crowdfunding project between the entrepreneur and the sponsors had significant effects on crowdfunding performance in both China and the U.S. The predictive power of the three dimensions of social capital was stronger in China than it was in the U.S. Obligation also had a greater impact in China.

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## 1. Introduction

Web 2.0 technologies empower firms to outsource their internal business tasks and activities to individuals, or the crowd, on the Internet who are capable of completing these business tasks [1]. The crowd can also invest in business ideas and projects that are initiated by entrepreneurs in the crowd who do not have the traditional monetary resources, such as banks and investment agencies, to implement their ideas. These entrepreneurs can pledge for financial resources from the crowd in various open social communities. This emerging approach of raising money via the Internet is called crowdfunding. Massolution [2] reported that the volume of crowdfunding grew 81% from 2011 and reached \$2.7 billion in 2012. In addition, the reward-based type of crowdfunding [3,4] was expected to reach \$1.4 billion in 2013 [2]. According

to Kickstarter.com, one of the most popular reward-based crowdfunding sites, more than 5 million people have pledged over \$900 million to fund 13 million projects, 43% of which have successfully raised money.

The popular practice of crowdfunding has drawn attention from the research community. Some preliminary research findings are revealed in the following three areas. First, some studies have examined under what conditions entrepreneurs adopt crowdfunding rather than other fundraising approaches [5,6]. Schwienbacher and Larralde [5] find that successful crowdfunding projects are generally appealing to the crowd, and these projects request a smaller amount of capital. The entrepreneurs of these projects are knowledgeable about and skillful with Web 2.0 technologies. They are also willing to expand their expertise and skill sets. Second, some studies have explored the motivations of entrepreneurs and sponsors to participate in crowdfunding [3,7]. Entrepreneurs seem to have a diverse range of motivations to start crowdfunding projects, such as raising money, attracting the public, and obtaining feedback from the crowd for their products and services [3]. Project sponsors, conversely, are motivated to support those individuals who have similar interests and expertise and are like-minded. They are also motivated to become a member of the crowdfunding community where they can learn and share their knowledge and

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business ideas [7]. Third, some scholars have investigated the determinants of crowdfunding performance (e.g., [3,8]). Crowdfunding projects that are focused on non-profit objectives tend to be more successful, and projects that produce tangible products rather than provide services tend to attract more capital [3].

In addition, some studies have investigated the social network community where an entrepreneur is embedded. The amount of capital collected in crowdfunding is heavily dependent on the range of social networks where entrepreneurs belong [8,9]. Social network sites, such as Twitter and Facebook, are important platforms for entrepreneurs to connect with fans and friends who are willing to provide financial and information supports [10]. These studies have investigated the formation of social network ties, the geographic locations of sponsors, and the number of an entrepreneur's fans as these factors relate to crowdfunding performance (e.g., [7–9,11,12]).

This study extends the prior effort that examines the effect of social networks in two ways (e.g., [8,11]). First, the current literature is mostly exploratory and adopts research methods, such as the case study [13] and the grounded theory approach [7]. There is a lack of underlying theories and theoretical support in the current crowdfunding literature. This study aims to be one of the first to introduce the theory of multidimensional social capital to the crowdfunding literature. The theory suggests that the social networks in which individuals are embedded can facilitate resource exchanges and knowledge sharing among the individuals through the structural dimension (e.g., network ties), the relational dimension (e.g., trust), and the cognitive dimension (e.g., shared narrative) [14–16]. These three dimensions are widely adopted in the business and management literature (e.g., [14–16]). Based on the theory of multidimensional social capital, this study develops a theoretical model to examine the effects of the three dimensions of social capital on the performance of crowdfunding.

Second, social capital may have different impacts on crowdfunding in different countries after crowdfunding has become a global business practice. For example, while Kickstarter and Indiegogo have become well-known crowdfunding platforms in the U.S., some competing platforms have emerged in China, such as Demohour.com and Dreamore.com. To the best of our knowledge, little research has examined crowdfunding from a cross-cultural perspective. The cross-cultural literature and Guanxi literature suggest that culture has an important effect on an individual's social life and that people from different cultural backgrounds have different beliefs, attitudes, and behaviors [17–20]. This paper is one of the first to conduct a comparative empirical study to determine the differences of crowdfunding across cultures. We test our research hypotheses using data collected from China and the U.S. The results of such a comparative study will help researchers and industry practitioners understand how the basic principles of crowdfunding are applied worldwide and whether some universal rules can be revealed.

The remainder of this paper is organized as follows. We first provide a literature review of the current research in crowdfunding and the theory of multidimensional social capital. We then develop a research model and the corresponding research hypotheses. Next, we present an empirical study that was conducted in China and the U.S. Finally, we discuss the findings and draw some implications for research and practice.

## 2. Literature review

### 2.1. Crowdfunding

The concept of crowdfunding evolved from crowdsourcing, a term first coined by Howe [1] as “the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of

people in the form of an open call.” Companies can obtain ideas, feedback, and solutions from their customers and business partners through crowdsourcing mechanisms [6]. In addition to collecting creative business ideas and solutions, crowdsourcing can be used to tap peoples' excess capacities and resources, such as monetary and financial resources [1]. This type of crowdsourcing where customers serve as investors is called crowdfunding. Crowdfunding is an effective funding channel for obtaining small- to medium-sized investments from the crowd [13,21].

In the current study, we focus on reward-based crowdfunding, which is defined as “crowdfunding involves an open call, essentially through the Internet, for the provision of financial resources either in the form of a donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes” ([3], p. 6). This definition of crowdfunding does not cover other models, such as lending-based crowdfunding [22] and equity-based crowdfunding [4].

Crowdfunding is a popular practice in the music industry, where fans are not only consumers of the music but also involved in the production of albums. Some Internet-based platforms, such as SellaBand, MyMajorCompany, and Artistshare, provide music artists with the ability to raise funds from fans. Artists post their songs on the various websites. Fans then access and listen to these songs for free. These fans then decide whether to invest in the production of the songs. If the total amount of money raised for an artist reaches the threshold of the funding goal, the artist can produce the album using the money that was raised. Sponsors or investors of these songs are compensated by receiving some revenues from the album or are rewarded by being allowed to participate in the album production process [6]. In addition, crowdfunding can be observed in the publishing industry, where the crowd helps professional journalists research and publish articles [23].

Belleflamme et al. [24] summarize three characteristics of crowdfunding. First, crowdfunding initiatives often rely on the advanced purchase of products that are not available on the market. Entrepreneurs who start crowdfunding projects describe what the final products are and offer a list of monetary or nonmonetary rewards for sponsors who are willing to invest. Second, consumers or sponsors pay more in the pre-ordering process than do traditional consumers, who wait to buy the finished products on the market. Third, sponsors identify themselves as members involved in the production process, which ranges from the initial donation of money to direct involvement in the entire project. The third characteristic is considered one major benefit of crowdfunding over traditional funding approaches because crowdfunding can involve consumers or sponsors and thereby enhances their experiences in the complete production process. Schwienbacher and Larralde [5] identify three crowdfunding business models: donation, passive investment, and active investment. The donation model has long been implemented in non-governmental organizations. Passive investment means that crowdfunding sponsors have limited interaction and communications with entrepreneurs but still aim to obtain rewards, tailored products, honorary recognitions, or other forms of revenue sharing from crowdfunding projects. In contrast, active investment provides crowdfunding sponsors with opportunities to not only invest money but also constantly interact with entrepreneurs by, for example, helping entrepreneurs with new features, testing products, and providing directions and feedback [5,9].

### 2.2. Social capital theory

Social capital lies in an individual's social structure, which is different from other types of physical capital [64]. There are different definitions and conceptualizations of social capital in different academic disciplines. For example, Coleman [64] defines

social capital in terms of its functions: “it is not a single entity, but a variety of different entities, with two elements in common: they all consist of some aspect of a social structure, and they facilitate certain actions – whether persons or corporate actors within the structure” (p. 98). In the business and management literature, a commonly cited definition of social capital is “the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by individuals or social unit” ([14], p. 243).

Social capital is a multidimensional concept ([14,25,64]). In the management literature, Nahapiet and Ghoshal [14] suggest social capital in terms of three dimensions: structural, relational, and cognitive. The structural dimension means that structural characteristics, such as network ties and network configuration, are necessary for the development and utilization of social capital. The relational dimension refers to the capital derived from the obligations, expectations, and trustworthiness of the social network. The cognitive dimension suggests that shared language and schema, as well as shared narratives, can help people in an organization gain social capital.

This conceptualization of multidimensional social capital is widely accepted in information systems research (e.g., [26,27]). The structural dimension is often investigated together with the relational and cognitive dimensions to understand an individual's behavior, such as knowledge contribution in an online community [26–28], the intention to obtain knowledge [29], loyalty in a virtual community [30], the usage of instant messaging tools [31], and job commitment and job effectiveness in virtual teams [32]. In addition, researchers integrate social capital theory and other theories, such as social cognitive theory (e.g., [27]) and motivation theory (e.g., [33,34]), to explain a member's behavior in online communities.

A social network is the source in which social capital is embedded [64]. There are two types of social networks in the context of crowdfunding. The first is the social network that an entrepreneur is embedded in the crowdfunding platform, such as Kickstarter. The second is the social network that an entrepreneur develops in other third-party social network websites, such as Twitter and Facebook. In both types of social networks, information technology, communication technology, and online community are effective means for fostering the development of the entrepreneur's social capital [12]. Entrepreneurs who have some business initiatives and need financial support can connect with people on social network sites. Because sponsors of crowdfunding projects do not have the opportunity to experience the quality of the products and services before consumption [35], it is necessary to improve the confidence of these sponsors.

### 3. Research model and hypotheses

Following Nahapiet and Ghoshal [14], we define an entrepreneur's social capital as the total range of actual and potential resources (financial and non-financial) that are embedded within the crowdfunding social networks where the entrepreneur exists. Based on multidimensional social capital theory [14], which is widely accepted in the management and information systems literature, we develop the research model shown in Fig. 1. The dependent variable is crowdfunding performance. Three dimensions of social capital, i.e., structural, relational, and cognitive [14], are identified as antecedent factors. We also model culture as a moderator in the model to reveal some cross-cultural differences. Specifically, we study the moderating roles of culture on the prediction power of social capital in two different countries and the relationship between the relational dimension and crowdfunding performance. We also include the goal of a crowdfunding project and the duration of the project as control variables.

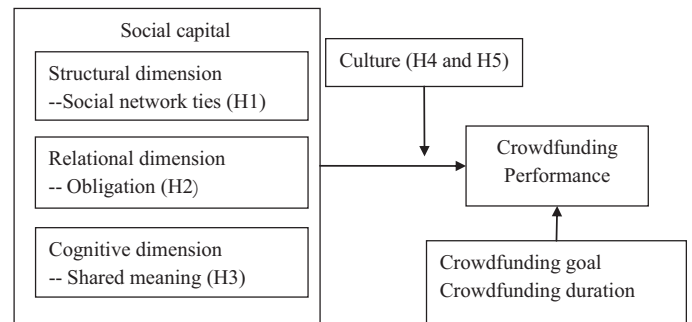


Fig. 1. Research model.

#### 3.1. Structural dimension: social network ties

The structural dimension of social capital has gained extensive attention in social capital research (e.g., [14,36–38]). Research has frequently examined social network centrality (e.g., [26]). The fundamental proposition for the structural dimension is that network ties provide access to resources, such as knowledge and funds [14]. In this study, we focus on the number of an entrepreneur's social network ties, i.e., the degree of the ties, which refers to the number of an entrepreneur's friends in the crowdfunding platform and in third-party social network websites.

Prior studies have found that social network ties provide benefits for information sharing in three forms: access, timing, and referrals [25]. Based on 158 venture capital investment decisions in China, Batjargal and Liu [39] found that an entrepreneur's positive relationship with a venture capitalist is important at the selection stage of private equity. Such a relationship is supplementary and additive to other determining factors that spur capitalists to invest. In addition, social capital is a main factor in the process of investment negotiations.

In the context of crowdfunding, an entrepreneur can broadcast his or her crowdfunding project to the crowd through social network ties and call on his or her friends to invest in the project. Kapipal, a crowdfunding website, states that “the more contacts you have, the greater your chances of reaching the amount you need” ([www.kapipal.com/manifesto](http://www.kapipal.com/manifesto)). A study of lending-based crowdfunding finds that social capital is a significant antecedent of funding performance and that the number of endorsements from a lender's group significantly affects the likelihood of funding [40]. Regarding reward-based crowdfunding, Mollick [8] finds that an entrepreneur's personal network ties on Kickstarter, measured there as the number of Facebook friends, helps predict the success of crowdfunding. Therefore, we propose that

**H1.** The degree of an entrepreneur's social network ties is positively associated with crowdfunding performance.

#### 3.2. Relational dimension: obligation

While structural capital determines the range of potential investors within an entrepreneur's reach, the relational embeddedness determines the likelihood that an investment is achieved [37]. The relational dimension of social capital can be viewed as the strength or quality of the relationship and is evaluated using trust, norms, obligations, and identification [14]. From the relational perspective, an obvious approach for an entrepreneur to use to develop social capital is investing in other entrepreneurs' crowdfunding projects, which may develop obligation among other entrepreneurs to fund the entrepreneur's crowdfunding project [18].

Obligation denotes a commitment or duty perceived by an individual to undertake future actions in response to another individual [14]. If individual A does something for individual B and trusts B to reciprocate in the future, this develops an expectation in A and an obligation in B [64]. It is the same as the reciprocity of social capital [41]. Nahapiet and Ghoshal [14] consider obligation to be a “credit slip” held by an individual. They also apply the notion of ‘there is no free lunch’ to suggest the importance of obligation in an exchange between two individuals. Previous research suggests that obligation can influence knowledge sharing and exchange [14] and financial capital exchanges [64].

In the context of crowdfunding, an entrepreneur may feel such an obligation in his or her crowdfunding initiative. If an entrepreneur receives funding from other sponsors, the entrepreneur may feel that it is his or her duty or commitment to give back to other sponsors by investing in other entrepreneurs’ future crowdfunding projects. From the reciprocity perspective, an entrepreneur can create and maintain his or her social capital by investing in the projects of others. The obligation to fund other entrepreneurs can increase social capital in two ways. First, sponsoring others can generate strong ties with other entrepreneurs, which can increase relational closeness. Second, sponsoring others can develop an entrepreneur’s reputation in the social network, which may lead to an increase in the entrepreneur’s trustworthiness. Previous studies have found that relational closeness and relational trust positively increase social capital [37]. A higher level of obligation developed in the crowdfunding platform indicates that the entrepreneur’s projects are more likely to be funded. Therefore, we propose that

**H2.** The obligation to fund other entrepreneurs is positively associated with crowdfunding performance.

### 3.3. Cognitive dimension: shared meaning

Shared meaning is an important element of the cognitive dimension of social capital [14]. It is similar to the communication dimension proposed by Hazleton and Kennan [25]. Communication is needed to access and develop social capital through the exchange of information, identification of problems and solutions, and conflict management. Meaningful communication requires at least some sharing of context between the parties [42,43]. The cognitive dimension is focused on the meaning and understanding that individuals or groups have in common. Nahapiet and Ghoshal [14] explain shared meaning in two ways. First, shared meaning comes from the existence of shared language and vocabulary, which are useful tools for communication. Second, shared narratives, such as myths, stories, and metaphors, can foster knowledge transfer to increase social capital [14,64].

Crowdfunding is a co-production or co-creation process in which the sponsors work closely with the entrepreneur in a cooperative manner and actively participate in the development of the crowdfunding project, such as testing early prototypes and promoting the project through word-of-mouth [9]. Most crowdfunding platforms, including Kickstarter, provide online communities for entrepreneurs and sponsors to share ideas with one another. This is an example of co-production or co-creation behavior [44]. Shared meaning between entrepreneurs and sponsors may play important roles in the production process. For entrepreneurs, crowdfunding is the approach through which they raise money, advertise products and services, and obtain feedback to improve the products and services [3]. For investors or sponsors, participating in crowdfunding projects can result in enhanced financial return, social reputation, and enjoyment stemming from the success of business initiatives [3,7,24]. To

facilitate this co-production process, it is necessary for an entrepreneur to develop a clear project description to share with the sponsors in a collective manner.

Entrepreneurs can narrate the stories about their crowdfunding projects using a variety of communication channels and technologies, such as their own personal websites, blogs, Facebook, Twitter, or the crowdfunding platform [3]. In a crowdfunding platform such as Kickstarter, entrepreneurs can describe their projects using words, pictures, and video. In addition, entrepreneurs can provide the latest updates about their projects in the discussion forum. Sponsors can provide comments and feedback and inquire about the project’s process. Entrepreneurs can also communicate with sponsors through third-party social network websites, microblogs, and instant messaging tools [3].

Crowdfunding provides a way for sponsors to become part of the community of like-minded people and share their knowledge and business ideas [7,13]. Therefore, sharing stories about crowdfunding projects with sponsors can effectively involve the sponsors in crowdfunding projects [3]. Additionally, building shared meaning helps entrepreneurs advertise their crowdfunding projects. Ordanini et al. [13] find that it is necessary for an entrepreneur to post crowdfunding projects on Facebook, Twitter, and other social networks to gain visibility. Therefore, we propose that

**H3.** Shared meaning about a crowdfunding project is positively associated with crowdfunding performance.

### 3.4. Cultural differences

The impact of social capital on crowdfunding can differ between cultures [17,18,20,45]. According to the cross-cultural literature [46], the collective culture values the sharing of benefits and resources among people who are more likely to share material benefits and nonmaterial resources compared with their peers in the individualistic culture. People in the collective culture are also concerned about how their own decisions and behaviors may affect others. The collective culture takes it for granted that an individual contributes to the benefit of others [46]. These fundamental characteristics of the collective culture suggest that it may be easier for Chinese entrepreneurs to obtain funds from sponsors. Chinese people may be proactive in providing financial support for those in their close relationship circles and those who are in need.

Chinese culture emphasizes Guanxi, which is defined as “drawing on connections in order to secure favors in personal relations” ([47], p. 44) and to fulfill personal objectives [48]. According to the theory of Guanxi, “Ganqing,” “Xinren,” and “Renqing” are the three dimensions of Guanxi and emphasize the importance of personal relationships [49]. “Ganqing” means personal feeling that indicates the existence of emotional attachment among members of a network [50]. “Xinren” means trust that focuses on the credibility and benevolence between individuals [49]. “Renqing” is similar to favor and is often seen in the form of giving gifts to one another [51,52].

An individual can take two types of actions in a “Guanxi” network [19]. The first is giving unsolicited help and favors to foster favorable interpersonal relationships (e.g., helping friends). The second is seeking favors for a specific purpose (e.g., seeking family assistance). Because of its reciprocal nature, “Guanxi” is useful in many contexts in China, such as obtaining access to ‘insider’ information and resources, gaining access to governmental officials, connecting with partner organizations, and improving business relationships [49,53]. In the importer-exporter context, “Ganqing” influences cooperative behavior, and “Renqing” affects

**Table 1**  
Descriptive statistics.

| Variables                    | U.S.        |              | China       |             |
|------------------------------|-------------|--------------|-------------|-------------|
|                              | Mean        | Std. dev.    | Mean        | Std. dev.   |
| Crowdfunding duration (days) | 31.15       | 9.95         | 40.93       | 14.18       |
| Crowdfunding goal            | 9977.89(\$) | 14215.38(\$) | 11629.67(¥) | 16555.37(¥) |
| Pledge                       | 9316.90(\$) | 15822.96(\$) | 7330.11(¥)  | 14875.29(¥) |
| Ratio of pledge over goal    | 1.05        | 0.76         | 0.96        | 1.06        |
| Social network ties          | 835.51      | 905.78       | 2904.10     | 5654.84     |
| Obligations                  | 2.19        | 4.34         | 0.80        | 2.14        |
| Shared meaning               | 4820.26     | 3259.49      | 1748.88     | 856.56      |

coordinative behavior [49]. Based on the above, we posit that the social capital theory may be more powerful in explaining fundraising behavior in China than it is in the U.S.

**H4.** National culture moderates the effect of social capital. In other words, the three dimensions of social capital explain the higher variance of crowdfunding performance in China compared with that in the U.S.

Further, we propose that the impact of obligation that emerges from reciprocity exchanges, i.e., investing in others' projects, is more powerful in China than it is in the U.S. First, people in the collective culture have stronger feelings of being involved in and contributing to the collective as a whole and of benefiting other people [46]. They strongly believe that their own behaviors correspond with the behaviors of others. A study has shown that the Chinese are more reciprocal than their American counterparts [54]. An entrepreneur's investment in others' projects is one indicator of such reciprocity [55]. The entrepreneur's obligation to fund other crowdfunding projects may gain more reciprocal investments from other sponsors.

Second, obligation is a type of economic exchange through which the entrepreneur can be acquainted with other sponsors who can be considered "Shuren" (familiar persons or friends). This is an important part of the "Guanxi" network in China [47,56]. Chua et al. [17] find that the effect of economic exchange on affect-based trust is more positive for Chinese than it is for Americans. In addition, affect- and cognition-based trust are more intertwined for Chinese managers than they are for American ones. Thus, the obligation of a Chinese entrepreneur may motivate more sponsors to invest in the entrepreneur's crowdfunding projects.

**H5.** National culture moderates the effect of obligation. In other words, obligation has a stronger effect on crowdfunding performance in China than it does in the U.S.

## 4. Research method

### 4.1. Data collection

We collected data from <http://www.kickstarter.com/> in the U.S. and <http://www.demohour.com/> in China. Kickstarter is the largest crowdfunding platform in the U.S. Since Kickstarter was launched in 2009, more than 5 million individuals have participated on the site, pledging more than \$900 million to over 13 million creative projects. Demohour was founded in Beijing in 2011 and is one of the largest crowdfunding websites in China.

The two crowdfunding platforms provide similar data items about crowdfunding projects and the entrepreneurs who initiated these projects. Data about a given project included the goal of fundraising, the duration of the project, the description of the project, and the final pledge amount. Data about a given entrepreneur included the number of fans in the entrepreneur's social networks and the number of projects that the entrepreneur

funded to support others in the crowdfunding platform. Kickstarter provided the number of the entrepreneur's Facebook friends. Demohour provided the hyperlink of the entrepreneur's Weibo (China's biggest tweeter website) page, through which we collected the number of the entrepreneur's followers on Weibo.

We collected 607 projects from Kickstarter and 310 projects from Demohour. We removed several projects whose founders did not have followers from either Facebook or Weibo. We also identified and removed some projects where the ratios of pledges over goals were extremely large, acting as outliers. In the end, there were 515 crowdfunding projects in the U.S. sample and 270 projects in the Chinese sample. The descriptive statistics of the projects and entrepreneurs are shown in Table 1.

### 4.2. Measures

Crowdfunding performance, which was the dependent variable, was measured as the ratio of pledge over goal. This measure of dividing the pledge by the fundraising goal was used in other studies [3]. The structural dimension was measured as the number of an entrepreneur's social network ties, which was similar to previous studies [57]. For the U.S. data, the number of an entrepreneur's Facebook friends was used to measure his social network ties. For the Chinese data, we collected the number of fans on an entrepreneur's Weibo page. Consistent with Chiu et al. [27], we measured obligations using the number of others' projects in which an entrepreneur invested before the expiration of his or her own crowdfunding project. We measured the shared meaning of a crowdfunding project as the length of the description of a crowdfunding project. The project description in its text format was an important narrative of a project that was shared with the sponsors. In addition to text, both crowdfunding sites enabled users to upload videos and pictures. We did not utilize the data from these multimedia formats.

We also collected data for two control variables. The crowdfunding goal was measured as the total amount of money that an entrepreneur aimed to raise for a particular project. Crowdfunding duration was the number of days from the start to the end of a project.

### 4.3. Data analyses and results

All of the variables were log-transformed to prepare for data analysis. The results are presented in Table 2. Model 1 only included two control variables, whereas Model 2 included the three dimensions of social capital. The VIFs for all of the variables were less than 2, indicating that there was no serious problem of collinearity.

The results confirmed the significant effect of the structural dimension of social capital on crowdfunding performance (US:  $b = 0.05$ ,  $p < 0.001$ ; China:  $b = 0.07$ ,  $p < 0.001$ ). Therefore, H1 was supported. The effect of obligation to fund other projects on crowdfunding performance was also significant (U.S.:  $b = 0.06$ ,  $p < 0.01$ ; China:  $b = 0.18$ ,  $p < 0.001$ ). Therefore, H2 was supported.

**Table 2**  
Regression results.

| Model | Variable            | U.S.                 |      | China                |      | Difference         |
|-------|---------------------|----------------------|------|----------------------|------|--------------------|
|       |                     | B                    | SE   | B                    | SE   |                    |
| 1     | Goal                | −0.04 <sup>***</sup> | 0.01 | −0.15 <sup>***</sup> | 0.02 |                    |
|       | Duration            | −0.06 <sup>ns</sup>  | 0.05 | 0.19 <sup>***</sup>  | 0.08 |                    |
| 2     | Goal                | −0.07 <sup>***</sup> | 0.01 | −0.18 <sup>***</sup> | 0.02 |                    |
|       | Duration            | −0.05 <sup>ns</sup>  | 0.05 | 0.24 <sup>**</sup>   | 0.07 |                    |
|       | Social network ties | 0.05 <sup>***</sup>  | 0.01 | 0.07 <sup>***</sup>  | 0.01 | 0.02 <sup>ns</sup> |
|       | Obligation          | 0.06 <sup>**</sup>   | 0.02 | 0.18 <sup>***</sup>  | 0.04 | 0.12 <sup>**</sup> |
|       | Shared meaning      | 0.08 <sup>***</sup>  | 0.02 | 0.10 <sup>**</sup>   | 0.05 | 0.02 <sup>ns</sup> |

\*\*  $p < 0.01$ .\*\*\*  $p < 0.001$ .<sup>ns</sup>Not significant.**Table 3**  
Prediction powers.

| Model | R square |       | R <sup>2</sup> difference |
|-------|----------|-------|---------------------------|
|       | U.S.     | China |                           |
| 1     | 0.033    | 0.147 | 2.951 <sup>**</sup>       |
| 2     | 0.108    | 0.316 | 3.919 <sup>***</sup>      |

\*\*  $p < 0.01$ .\*\*\*  $p < 0.001$ .

The result also showed that shared meaning was positively correlated with crowdfunding performance (U.S.:  $b = 0.08$ ,  $p < 0.001$ ; China:  $b = 0.10$ ,  $p < 0.01$ ), thus supporting H3.

The predictive powers of Models 1 and 2 for the U.S. and China are shown in Table 3. Using Fisher's test, we found significant differences in Models 1 and 2 between the U.S. and China [58]. The predictive power was higher for the Chinese sample ( $R^2 = 0.147$  and 0.316 for Models 1 and 2, respectively) than for the U.S. sample ( $R^2 = 0.033$  and 0.108). This provided support for H4.

In addition, we tested the difference in the coefficients of the regression models in Table 2. There was a significant difference in the coefficients of obligation between the U.S. and China. The effect was stronger for China ( $b = 0.18$ ) than it was for the U.S. ( $b = 0.06$ ). Thus, H5 was supported. We did not find significant differences in the coefficients of the other two dimensions of social capital. Regarding the control variables, the crowdfunding goal was negatively associated with crowdfunding performance for both the U.S. and China. The effect of duration was significant for China but not for the U.S.

## 5. Discussions

This study examines the role of an entrepreneur's social capital in crowdfunding. We have demonstrated significant effects of structural, relational, and cognitive social capital using two different datasets collected from the U.S. and China. The results indicate that structural social capital measured in terms of the degree of social network ties is a significant antecedent of crowdfunding performance (H1). This finding confirms the importance of an entrepreneur's social network structure ([8,13]). It is also consistent with the study by Mollick [8], who finds that an individual's personal network helps predict the success of crowdfunding. Mollick [8] measures personal social network ties using the number of an entrepreneur's Facebook fans. In a different study, Lambert and Schwiendbacher [3] measure a social network in terms of the usage of one's social networks to test the effect of social networks in crowdfunding. The authors find that usage has a significant negative effect rather than a positive effect on pledge, which is inconsistent with our finding.

Moreover, they do not find a significant effect of social network usage on the ratio of pledge over goal. One possible reason for the insignificant result may be that social network usage is not a proper measure of the size and scale of social networks.

The obligation to fund other entrepreneurs in the crowdfunding platform is found to be a significant predictor of crowdfunding performance (H2). This finding confirms the role of reciprocity exchanges in crowdfunding, which is one of the most important sources of social capital [41]. Portes [41] argues that the return of the obligations developed by an individual is based on the common social structure, which is the crowdfunding platform community in our study. The collectivity of the crowdfunding platform may repay an entrepreneur for his or her obligations in the form of his or her status and honor on the platform [41], which leads to a high level of crowdfunding performance. In addition to status and honor, obligation can motivate those people who are funded directly by the entrepreneur to reciprocate with a greater amount of funding [49,54].

In addition, this paper verifies the importance of shared meaning between an entrepreneur and other participants who sponsor the crowdfunding project (H3). This finding confirms the significant role of shared meaning, such as myths and stories, in social capital development [14,59]. Improving the shared meaning of a crowdfunding project is an effective way to attract individuals to invest in the project [13]. The detailed narrative of a project is an important way to communicate with the potential sponsors and involve these sponsors in crowdfunding [3,6,13].

Regarding the cultural differences between China and the U.S, we find that the predictive power of the research model is higher for the Chinese sample than it is for the American sample (H4). The finding indicates that social capital seems to be more influential in China than it is in the U.S. Some of the "Guanxi" in crowdfunding already exists in an entrepreneur's real life, such as relatives and close friends. In addition, computer-mediated communication (CMC) technologies, such as Facebook and Weibo, contribute to the development of "Guanxi" in crowdfunding. Ou et al. [60] find that CMC technologies can mimic traditional interactive face-to-face communications to form "Guanxi" in traditional online marketplaces, such as Taobao in China.

In addition, we find that the effect of obligation has greater weight in China than it does in the U.S (H5). This finding is consistent with the research on "Guanxi," which has found that Chinese value reciprocity more than Americans do [54,55]. This finding also confirms Ou et al. [60]'s findings regarding the manner in which CMC tools enable "Guanxi" in online marketplaces. Prior research has found that the Chinese culture of "Guanxi" limits the role of structure holes for brokers [20]. However, the "Guanxi" culture has strong and positive impact for the in-groups.

## 6. Conclusions

### 6.1. Limitation

There are several limitations in this study. First, we measured the degree of social network ties as the number of fans that an entrepreneur had on either Facebook.com or Weibo.com rather than the total number of friends in all social networking communities. Further research should investigate the effects of the ties on other social networking sites such as LinkedIn.com, which seems to be more professional than Facebook, which is geared toward personal entertainment. Second, we only used the length of the text description of a project to measure shared meaning. Text description is not the only channel through which projects can be shared projects with sponsors. On the two crowdfunding platforms, an entrepreneur can upload one video file for each project that complements the description. All of the projects in our sample had video presentations as a part of the project descriptions, so we could not analyze how video affected crowdfunding performance in the manner in which Mollick [8] did. Future studies should examine the effect of the video's content on crowdfunding performance. Third, we did not consider other moderating variables, such as the uncertainty of the crowdfunding project. Fourth, our sample size was relatively small compared with the current trend of big data analysis, which has drawn attention from the research community.

### 6.2. Implications for research

This study makes several contributions to the literature. First, we are one of the first groups to investigate the issues of crowdsourcing from a specific theoretical perspective. Compared with prior literature that was largely exploratory (e.g., [8,13]), we have conducted a confirmatory study based on a solid theoretical foundation to test the role of social networks and social capital in the success of crowdfunding. Consistent with prior literature that has confirmed the role of social network theory in the traditional context, such as resource exchanges inside the firm [14,15], we find that social capital is a valuable asset in the online context of fundraising through crowdfunding. We have studied multidimensional social capital and included structural, relational, and cognitive dimensions in our study. The integration of these three dimensions provides an inseparable view of social capital in an entrepreneur's fundraising efforts [14].

Second, we are one of the first to examine the role of social capital in crowdfunding from a cross-cultural perspective. We have extended the prior literature, which was based on Western culture (e.g., [8,13]), to examine crowdfunding in Eastern culture. On the one hand, we have demonstrated that multidimensional social capital can universally explain the success of crowdfunding in different countries. The empirical evidence from the crowdfunding contexts in the U.S. and China has provided complementary and robust support for the multidimensional theory of social capital. On the other hand, we have revealed different predictive powers of multidimensional social capital across China and the U.S. Because cultural roots vary in different countries, the effects of social capital and its three dimensions are found to have different impacts. Compared with the U.S., China is a collectivistic society in which people place more importance on personal relationships ("Guanxi"). The Chinese have much higher confidence in "in-group" members than in "out-group" members [61]. To improve the external validity of the role of social capital in crowdfunding, future research can investigate it in other countries.

Third, we suggest and demonstrate that each dimension of social capital has an important impact on the success of

crowdfunding. The role of social network ties is found to be significant in crowdsourcing, consistent with the prior literature (e.g., [15,26]). However, this significant impact does not differ between different cultures. In addition, we identify that the obligation to fund other entrepreneurs based on reciprocity norms plays an important role. This is consistent with the findings of Nahapiet and Ghoshal [14], who propose that trust, norms, obligations, and identification are important relational social capital dimensions. However, the extant research seems to be focused on trust (e.g., [62]) and ignores other elements of relational social capital. In a study of the role of social capital in knowledge sharing, Chiu et al. [27] find that norms of reciprocity rather than trust significantly influenced the quality of knowledge sharing. This suggests that future studies go beyond trust and investigate other important factors of the relational dimension of social capital.

Further, shared meaning about a crowdfunding project is identified as another key factor for crowdfunding performance, although the effect does not differ across cultures. We posit that shared meaning is an effective way to advertise a crowdfunding project and involve sponsors in the co-production process. While we have studied the value of shared meaning in the initiation or fundraising process of a crowdfunding project, future studies can investigate the roles of comments and feedback in other phases of crowdfunding [9,63].

### 6.3. Implications for practice

This research also provides several practical implications for crowdfunding platform providers and entrepreneurs. First, it is critical for providers to leverage the power of social capital. Crowdfunding platforms can bridge different social networks [9]. Thus, crowdfunding providers should collaborate with other third-party social networks in addition to Facebook and Weibo. Crowdfunding platform providers should motivate entrepreneurs to participate actively in other third-party social networks. We find that obligation matters more in crowdfunding in China. Thus, crowdfunding platforms in China should motivate entrepreneurs to support other entrepreneurs. Doing so will increase the likelihood of successfully funding their own crowdfunding projects.

Second, a crowdfunding platform acts not only as an integrator of third-party social network communities but also as an independent social network community. Providers should develop mechanisms to promote an entrepreneur's participation and engagement in the community. The results in our study indicate that the obligation to fund other entrepreneurs has positive significant effects on crowdfunding performance, particularly in the Chinese context. The providers of crowdfunding platforms in the U.S. may need to examine the strategies used by their Chinese peers and apply similar strategies in the U.S. For the leading crowdfunding platforms, such as Kickstarter and Indiegogo, which may expand their operations to a different culture, it is critical to pay attention to the impact of culture, particularly to the "Guanxi" culture in China.

Third, providers should motivate entrepreneurs to share information about crowdfunding projects with sponsors in different formats. In addition to the text description of projects, which is found to be important in the current study, platforms are encouraged to integrate a diverse range of media, such as pictures and video, to help entrepreneurs tell stories about their projects to improve the shared understandings between entrepreneurs and sponsors. In addition to publishing project narratives on crowdfunding platforms, entrepreneurs should use other communication channels, such as instant messaging, to facilitate their communications with sponsors.

To summarize, we have applied the theory of multidimensional social capital to study the success of crowdfunding in a cross-cultural context in an effort to extend some of the earliest studies of crowdfunding. We have provided consistent evidence demonstrating the strong impacts of social capital in crowdfunding using data collected from China and the U.S. Additionally, we have presented the different effects of social capital in China and the U.S.

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