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# The Role of Internal and External Social Capital in Crowdfunding: Evidence from China

Chuanhui LIAO<sup>1</sup>, Yunhao ZHU<sup>2</sup>, Xi LIAO<sup>3</sup>

## Abstract

How does a proponent's internal and external social capital impact crowdfunding performance? Based on the theory of social capital, we developed a research model and conducted an econometric analysis using the objective data collected from a Chinese comprehensive crowdfunding platform, ZhongchouNet. Results of an econometric analysis of a sample of 862 projects show that two types of the proponent's external social capital have significant effect on crowdfunding performance alone. Moreover, the effect of internal and external social capital on the success of a campaign is fully moderated by the type of the project. These results suggest that, to improve crowdfunding performance, the proponents, especially proponents of for-profit projects, should make good use of the mechanisms of social capital construction existed inside the crowdfunding platform.

*Keywords:* crowdfunding; internal social capital; external social capital; crowdfunding performance.

## Introduction

Drawing inspiration from idea like micro-finance and crowdsourcing (Mor Duch, 1999; Afuahand Tucci, 2012; Howe, 2006), crowdfunding has become a novel and valuable source of fundraising for entrepreneurs and individuals (Belleflamme *et al.*, 2014; Mollick, 2014). This innovation, in the fields of financing

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<sup>1</sup> School of Economics and Management at Southwest University of Science & Technology, Mianyang, CHINA, School of Management at University of Science & Technology of China, Hefei, CHINA. E-mail: liaochuanhui@163.com

<sup>2</sup> School of Management at University of Science & Technology of China, Hefei, CHINA. E-mail: zhuyun@ustc.edu.cn

<sup>3</sup> Civil Aviation Flight University of China, Guanghan, CHINA. E-mail: lucy\_cafuc\_720@163.com

and information, enables the entrepreneurs, especially those newly founded minor entrepreneurs and small artistic projects, to raise hundreds of thousands of dollars through a website or a dedicated platform (Howe, 2006; Schwienbacher and Larralde, 2010; Ordanini *et al.*, 2011). According to Massolution 2013, the overall crowdfunding industry has raised 2.7 billion US dollars in 2012, with the north America 1.606 billion, Europe 0.945 billion, and Asia 0.033 billion US dollars respectively. It is estimated that there are more than 450 active CFPs (Crowdfunding Platforms) based in North America and Europe (Massolution, 2013). With its prevailing worldwide, there are some crowdfunding platforms set up in China, such as Demohour, ZhongchouNet, musickid, Dreamore, Tmeng etc.. It is estimated that the overall trading amount of comprehensive crowdfunding is 16.82 million in RMB during the first half of the year 2014 (China Internet Association, 2014).

More and more researchers pay their attention to the phenomena of crowdfunding and conduct researches in this field. Some preliminary research is mainly conducted in the following 3 area. First, some initial studies focus on the definition and characteristics of crowdfunding (Mollick, 2014), as well as its distinguished features from related phenomena, such as micro finance and crowdsourcing (Morduch, 1999; Afuah and Tucci, 2012; Kleemann *et al.*, 2008). Second, some researchers have made exploratory study of crowdfunding, including the underlying dynamics of success in crowdfunding ventures (Belleflamme *et al.*, 2014), the motivation of different kinds of participants in crowdfunding (Schwienbacher & Larralde, 2010; Xia *et al.*, 2011), and the geographic features and effects on crowdfunding etc. (Mollick, 2014; Agrawal *et al.*, 2011). Third, some studies have explored the behaviors of proponents and backers. Burtch *et al.* (2012) has identified substitution effect herein crowdfunding and Ward & Ramachandran (2010) has reached the results that the bakers' decision mostly based on the success of the previous projects of the same kind. And it is noted that there is an apparent herd effect in crowdfunding, indicating that information of prior contribution behavior is a key factor that influence the behavior of crowd funders, as well as a clear linkage between marketing effort and the success of crowd-funded projects (Lin *et al.*, 2009).

In addition, some researchers have provided insights into the effect of social capital on the crowdfunding performance. Social network sites are important platforms for project sponsors to pledge for financial supports from fans and friends with the same or like interests (Bechter *et al.*, 2011). And the amount of capital collected has a positive relationship with the number and complexity of the founders' social network, the bigger the scale, the more money collected (Lin *et al.*, 2009; Hui *et al.*, 2012). Further study on three multidimensional of social capital, social network ties, obligation and shared meaning, has shown that there is significant relationship between these 3 specified social capitals and the crowdfunding performance in both China and the U.S. (Zheng *et al.*, 2014).

This study extends the prior efforts to examine the effect of social capital on the success of crowdfunding project from a new perspective of internal and external social capital. Burt (2009) classifies social capital into two types, internal and external. The former refers to the social capital of a collectivity embedded in internal of the network, while the latter can be potentially accessed or are actually mobilized for actions of members of the collectivity. Current studies on crowdfunding mainly concerning the external social capital of the individual project proponents, using the fans of the proponents' Facebook or Weibo (Mollick, 2014; Zheng *et al.*, 2014). But these studies neglect the facts that founders in the same crowdfunding platform are under the same regulation, interest and even with the same aims, and their internal actions inside the platform may have effect on the crowdfunding performance. This paper is one of the first to investigate into the internal as well as external social capital of the proponents. We test our research hypotheses by using data from the biggest CF platform in China, say Crowdfunding Net, and the results of the study on both internal and external social capital will help the platforms with regulation-design and contribute to the sponsors with some techniques of establishing social capital to improve their crowdfunding performance.

The remainder of this paper is organized as follows. First, we put forward with basic knowledge on crowdfunding and the literature of internal and external social capital. In part 2, we put forward with research model and our hypotheses. Then we present our data compilation and empirical study. And finally, we discuss the results and draw some implications for practitioners and scholars.

## Literature review

### *Crowdfunding*

The concept of crowdfunding evolved from ideas like micro-finance and crowdsourcing (Morduch, 1999; Afuah & Tucci, 2012; Howe, 2006). It emphasizes the openness and the use of web 2.0 technology (Lin *et al.*, 2009). Now, crowdfunding is regarded as a novel and an effective channel of fundraising for minor and small entrepreneurs, individual painters, musicians and traditional folk handcrafters (Ordanini *et al.*, 2011; Ordanini, 2009). To these people and utilities, lacking of sufficient tangible assets to be pledged to financial investors make them unable to get loans from traditional financial intermediaries and investors (Casamatta & Haritchabalet, 2014; Chen *et al.*, 2009; Hellmann, 2007; Kirsch *et al.*, 2009; Shane and Cable, 2002). Concerning the definition of crowdfunding, there are general and special ones. The former is defined as “an open call, essentially through the internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in

order to support initiatives for specific purposes” (Schwienbacher & Larralde, 2010). The special definition, which is more preferable in the context of entrepreneurs, shows that “crowdfunding refers to the efforts by entrepreneurial individuals and groups-cultural, social, and for-profit to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using internet, without standard financial intermediaries” (Mollick, 2014). In this paper we use the special definition, excluding some internet financial models such as lending-based crowdfunding and equity-based crowdfunding. And it should be noted that equity-based crowdfunding is illegal in China up to now (Benhua, 2013).

Originated from the music and publishing industries, crowdfunding has been applied to every field of our lives, such as electronic appliances, publishing, donation, agriculture, culture, entertainment, microfilm, etc. In crowdfunding, participants and funders enjoy active involvement and participation in the development and application of creative ideas, design, and even the marketing, besides the ordinary investment decision (Sánchez-González & Palomo-Torres, 2014). Crowdfunding featured not only in the wide range of potential projects and founding goals, but also in the nature of the funding effort (Belleflamme *et al.*, 2014). Giudici *et al.* (2012) classify projects according to the sponsors’ objectives. They offer four different typologies: donation, lending, reward-based and equity-based model.

With the application of Web 2.0, the firms, especially the micro and minor entrepreneurs, have access to outsource their internal business and financial needs from individuals. And the crowdfunding platforms are set to facilitate the fundraising and support innovation projects. It is estimated that there are more than 450 active CFPs, and the majority be based in North America and Europe as of Dec. 2012. Among the four models of crowdfunding platforms, the reward-based is the largest in terms of number of CFPs, expanding at the high rate of 79% CAGR (Massolution, 2013). These online platforms provide an environment purposely designed for early stage entrepreneurs, organizations and individuals to post their small-amount programs. By using the internet, crowdfunding platforms provide mechanism of communication and exchange of views, sharing of feedback for improving the project. There are columns and icons like remarks and updates to facilitate the exchange of information between the founders, backers and other people of interest (Giudici *et al.*, 2013). Moreover, mechanism of social capital is used in crowdfunding platform. In practice, initiators or the founders always provide their accounts of Facebook, Weibo, Tencent QQ and Tencent QQ group to broadcast their projects to more people (Mollick, 2014; Zheng *et al.* 2014). And this mechanism is applied by the famous crowdfunding platforms worldwide, such as Kickstarter in USA and Demohour and ZhongchouNet in China.

### ***Social capital theory***

Originated from the terms as ‘culture turn’ (Barnes, 2001) and ‘relational turn’ (Bathelt & Glückler, 2003), social capital means ‘the norms, values, networks, reciprocity or trust which is held in a community and can lead to positive social and economic outcomes’ (Huber, 2009). And in the field of business and management, social capital is regarded as the actual and potential resources embedded within the network (Nahapiet & Ghoshal, 1998).

Social capital can be classified in different general categories. In the information and management literature, social capital comprises 3 dimensions, namely structural, relational and cognitive respectively (Nahapiet & Ghoshal, 1998). While in the regional studies and economic geography literature, social capital characterizes in collective efficacy, social trust and reciprocity, and the social integration at the individual level and collective level (Harpham *et al.*, 2002; Coleman & Coleman, 1994; Woolcock & Mill, 2001). According to Lin, resources which can be accessed and mobilized for the activities of the collectivity are called ‘internal social capital’ of the collectivity. And the resources that individual members of the collectivity can access and mobilized are called external social capital (Leana & Pil, 2006). This kind of classification offers a new way of characterization with alternative perspectives for operationalization and investigation of causal mechanisms (Huber, 2009).

It should be emphasized that social network itself does not represent social capital (Huber, 2009), but where Social capital is embedded in (Coleman, 1988). There are two types of social network in the context of crowdfunding. The first is the social network that inside the crowdfunding platforms, namely the internal social network. The second is the social network that the founders developed by themselves outside the crowdfunding platforms, say external social capital (Zheng *et al.* 2014). Both of these two types can help the founders access to more social capital, which in turn may lead to more fundraising (Mollick, 2014).

### **Research model and hypotheses**

Our main objective here is to understand whether social capital may affect crowdfunding performance. According to Franz, social capital refers to the resources embedded in social network which can be potentially accessed or are actually used by individuals for actions. And it can be divided into two categories, internal and external (Huber, 2009). Following Franz, We define a proponent’s social capital as the overall resources that are either embedded within the crowdfunding platforms, or those resources existed outside the platforms. In this case,

the former is named the internal social capital, and the latter external one. Based on this social capital classification, we develop the research model shown in Figure 1. The dependent variable is crowdfunding performance. Two types of social capital, namely internal social capital and external social capital are identified as independent variables. We also model type of the campaign as the moderator variable. Here we set that type=1 when the project is a for-profit one, and type=0 for a non-profit project. We also include the crowdfunding goal and the campaign duration of the project as control variables.

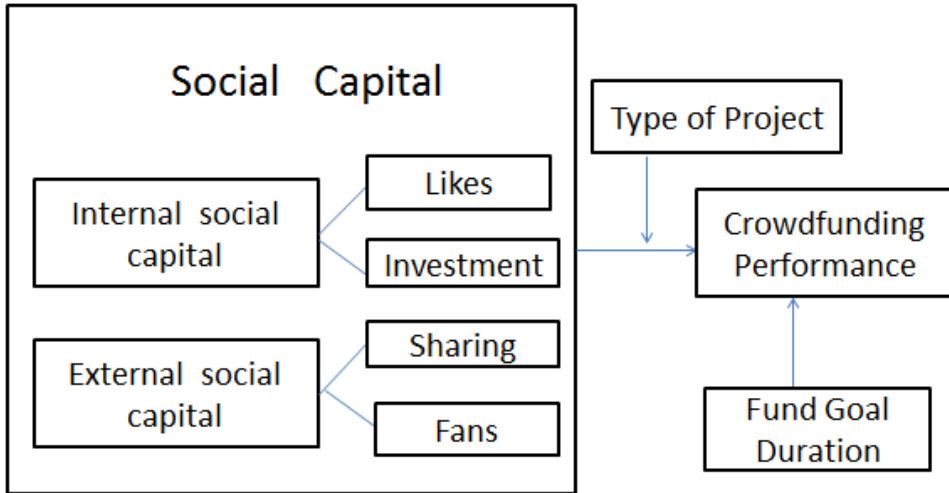


Fig.1. *Research Model*

***Internal social capital***

A collectivity can be regarded as a social network which consists of actors (members) who can potentially bring their resources to bear and relationship between them (Huber, 2009). And social capital ‘refers to the norms and networks that facilitate collective action’ (Schuller *et al.*, 2000). So, in the first step, we take the crowdfunding platforms as a collectivity, because the platform is a network consisting of all the proponents, who is under the same trading regulations and with the same purpose and interest. In this study, we focus on the number of a founder’s internal social capital in the collectivity, i.e. the crowdfunding platform.

Internal social capital refers to the relationship among the members in the collectivity (Huber, 2009). The quality or strength of the relationship is evaluated by using of trust, norms, obligations, and identification (Nahapiet & Ghoshal, 1998). Following Carrie (2006) who defines the internal social capital as the

relations among teachers in public school, here we identify the internal social capital as the relationship between the initiators within a platform. In crowdfunding platform, all the founders post their projects onto the website, and acquire information from other projects. They can find some other projects of interest or valuable. For these projects, two actions may be carried forth. They can either press the icon 'like' to show their interest and make it much more attractive and appealing to the potential investors, or they can invest in other proponents' projects directly to help to reach its funding goal, which is named the 'like' and 'support' in the platform respectively (Zheng *et al.*, 2014).

Prior studies have found that internal social capital exert significant effects on the members' knowledge sharing intention. Actions like showing 'like' to other projects can increase the appealing of the project, which means the more amount of 'like' a project gets, the more appealing the project appears to the potential investors. And actions like 'support' can be considered as an obligation. Obligation is a duty perceived by an individual to undertake future actions in response to another individual, which is called a 'credit slip' held by an individual (Nahapiet & Ghoshal, 1998). In the context of crowdfunding, investment between different founders can be regarded as a symbol of trust and close relationship (Zheng *et al.*, 2014). And reciprocity here exists in crowdfunding as a basic element of human behavior, can lead to investment (Burt, 2009). From the reciprocity perspective, a founder can create and maintain his or her social capital by pledging in the projects of the others (Zheng *et al.*, 2014). When a founder invests in another project, they may establish strong ties with each other, which is much more effective and vigorous than the former mentioned action of 'like'. Previous studies have found that relational closeness and relational trust positively increase social capital and performance (Moran, 2005). The high relationship developed in the interaction between the proponents in the crowdfunding platform suggests that the projects are more likely to be trusted, recommended and funded. Therefore, we propose that:

H1a: Actions of 'like', the praise to other projects, are positively associated with crowdfunding performance.

H1b: Actions of 'support', the obligation to fund other projects, are associated with crowdfunding performance positively.

### ***External social capital***

Besides the internal relationship inside the crowdfunding platform, founders have ties with people outside the platform. Resources that individual members of a collectivity can be potentially accessed or actually mobilized through external relationship are called external social capital (Leana & Pil, 2006). Social capital of individuals has gained extensive attention and a number of studies show the



correlation between ‘individual’ social capital and economic performance. It is recognized that individual social capital is a robust predictor of entry into nascent entrepreneurship. And the role of external social capital in funding new ventures has long been noted to be important (Mollick, 2014; Zheng *et al.*, 2014; Hsu & Lin, 2008; Shane & Cable, 2002).

In this study, there are two kinds of external social capital set in the platform. One is the social capital of individual founders, which has been explored widely (Mollick, 2014; Zheng *et al.*, 2014; Hsu & Lin, 2008; Shane & Cable, 2002). Like the western proponents prefer to provide Facebook account on kickstarter, the Chinese founders choose to provide Weibo account to facilitate the broadcast of his or her project and expand information exchange. Another type of external social network set through the use of ‘sharing’ or hyperlinks, as it is called. Just as hyperlinks to other websites are offered to help users share information in Twitter (Lovejoy *et al.*, 2012), hyperlinks to Renren, WeChat, QQ zone and Douban etc. are offered in Chinese crowdfunding platforms for the same purpose. And all these third-party websites connected are the most popular ones in China. These hyperlinks can make the project get more followers and thus broadcast the project to more and more audiences. Dreamore, a famous crowdfunding platform dealing with microfilm, recommends the proponents make full use of active social network such as Weibo, Douban and Renren to improve their success. Here we define the amount a project’s hyperlinks to other media as “sharing” of a project. Therefore, we propose that:

H2a: the amount of fans of a proponent is positively associated with crowdfunding performance.

H2b: the amount of sharing of a project is positively associated with crowdfunding performance.

### ***Type of the project***

Mollick (2014) categorizes the crowdfunding into four types according to the type of return on investment, namely the patronage, lending, reward-based, and the equity model. Studies on crowdfunding have proved that the funding performance of non-profit projects is much better than that of the for-profit ones and non-profit campaigns appear to have above-average success (Schwienbacher & Larralde, 2010; Belleflamme *et al.*, 2013; Pitschner & Pitschner-Finn, 2014; Carvajal *et al.*, 2012). The reason lies in that the funding goals of non-profit projects are always small, easy to achieve. And some non-profit organizations prefer to use social media as a one-way communication channel to communicate with its stakeholders and tend to adopt social media for public relations (Lovejoy *et al.*, 2012; Curtis *et al.*, 2010). Individual projects that announced their non-

profit motives can establish both trustworthiness and confidence in relative quality with platform contributors (Read, 2013). Most of the non-profit projects posted on the Chinese crowdfunding platforms are initiated by individuals and small team, like voluntary support in education, calling for help for a specific affairs, etc. Although the team or the individuals has little external social capital, they tried to make their project to be a subsidiary of a big public welfare program or organization, so they can employ the Weibo account of the public welfare program or organization, whose fans of Weibo account remains a big figure. While for for-profit campaigns, the projects are heterogeneous from one another, and their social capital differs greatly. Since crowdfunding is a novel channel of fundraising for newly found entrepreneurs or individuals with innovation ideas, their social network of the new founder always remains scarce, leading to less exposure and broadcasting. Based on the situations discussed above, we formulate hypothesis 3:

H3: The types of projects mediate the effect of social capital on crowdfunding performance. In other words, the effects of social capital on for-profit projects are more powerful than on the non-profit ones.

## Research method

### *Data collection*

There are more than 10 active crowdfunding platforms in China. Some are comprehensive platforms such as Demohour and ZhongchouNet, some are professional platforms, such as musickid and Tmeng. We check in the Alexa and find the top 5 crowdfunding websites in China.

Table 1. *Top 5 crowdfunding websites in China.*

Crowdfunding platform	ZType	Alexa Ranking
Demohour, <a href="http://www.demohour.com/">http://www.demohour.com/</a>	donations/rewards	22,916
ZhongchouNet, <a href="http://www.zhongchou.cn/">http://www.zhongchou.cn/</a>	donations/rewards	24,983
Dreamore, <a href="http://www.dreamore.com/">http://www.dreamore.com/</a>	rewards	31,044
Musikid, <a href="http://www.musikid.com/">http://www.musikid.com/</a>	rewards	116,091
Tmeng, <a href="http://www.tmeng.cn/">http://www.tmeng.cn/</a>	rewards	738,633

Note: *as of Dec.10, 2014.*

Demohour is the first crowdfunding platform set in China in 2011, but it gave up crowdfunding model in April 2014<sup>4</sup>. So we choose the second one, say ZhongchouNet ([www.zhongchou.cn](http://www.zhongchou.cn)) as our data source. ZhongchouNet is founded in Feb. 2013, and act as a comprehensive platform. There are 8 categories of projects included, technology products, philanthropic projects, publishing, entertainment, arts, agriculture, organization and others.

We collect data from the public archive of the crowdfunding website Zhongchou.cn manually, using the data between Feb.1, 2013 to Oct. 31, 2014. Data concerning the project including the goal of fundraising, duration of the campaign, final pledge over the goal. Data about the founders of the project include the number of projects the founder likes besides his own, the number of projects the founder support/invest in other founders' projects, the number of fans of the entrepreneur's social network of Weibo, and numbers of sharing of a project. In the ZhongchouNet, some proponents provide their Weibo account in the description of the project, or in their responding to the remarks, so we choose to identify the account of social capital by text-searching in the description of the project and the remarks. To identify the non-profit projects, we follow the way of Pitschner and Pitschner-Finn (2014) had done before. Concerning the number of sharing of a project, there's a series of icons providing the number of the sharing to other social capital media such as Renren, WeChat and QQzone. After getting the founders' social network account, we log in to the Weibo account, and get the numbers of fans of the Weibo account.

We collected 1231 projects from ZhongchouNet. We exclude projects whose goal of fundraising are extremely low and extremely high; say those below RMB500 and those listed in the top 1% of the most successful projects (Pitschner & Pitschner-Finn, 2014). And finally, we get a sample of 862 projects.

We also collect data for two control variables. One is the goals of target, measured as the total amount of money that an entrepreneur aims to raise for a particular project. The other one, campaign duration, is measured by planed duration from the start to the expiration of a project (Mollick, 2014; Zheng *et al.* 2014).

## Results and discussion

Data concerning the crowdfunding goal, Int-L, Ext-F and Ext-S are log-transformed. Since not all the project founders provide Weibo accounts, some projects' social network ties appear to be 0. In order to include all the projects in

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<sup>4</sup>Zhang you. Why Demorehour gave up crowdfunding? Available at: <http://www.demohour.com/groups/112825/posts/246915?page=55>

the sample, we use the equation of  $\ln(\text{social capital} + 1)$ , to make all the variables valid even if the social capital is 0. The variable definition and descriptive analyses are presented in table 2. The mean of the ratio of pledge over goal amounts to 485%, indicating that the average final amount pledged is 4.85 times that of the funding goal. Among all the projects, about 84% are for-profit projects. Concerning the internal social capital, mean of Int-L, Int-I, Ext-S and Ext-F are 4.44, 1.14, 2.13 and 2.98 respectively. The average duration time is 38.5 days per project, conforming to the previous study results of 40.93(Mollick, 2014; Zheng *et al.* 2014).

Table 2. Variable Definition and Descriptive Statistics

Variables	Minimum	Maximum	Mean	Variable description
Crowdfunding performance	0	8	4.85	Ratio of pledge over goal
funding goal	6.215	15	8.94	$\ln(\text{funding goal})$
duration	2	187	38.46	Duration of campaign in days
Type	0	1	.84	Dummy=1 if the project is a for-profit one; 0 otherwise
Int-L	0	327	4.44	$\ln(\text{number of likes of other proponents' project} + 1)$
Int-I	0	33	1.14	Number of investment in other proponents' project + 1)
Ext-S	0	6	2.13	$\ln(\text{numbers of sharing of a project} + 1)$
Ext-F	0	21	2.8	$\ln(\text{number of fans of a proponent's Weibo account} + 1)$

Note: target capital in ten thousands. Valid N=862.

We control for the duration and log of the project goal, and use stepwise regression to test the effects of internal and external social capital on the crowdfunding performance (Mollick, 2014; Zheng *et al.* 2014). The results are presented in table 3. Model 1 tests the control variables, model 2 and 3 test variables of internal and external social capital respectively. We add the moderating variable to test the moderating effects of project type in model 4-8. In model 8, all the variables are included so as to get the overall effects.

Table 3. Regression results

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Fund goal	-12.325***	.003	-.061**	.003	-.061**	-.078***	-.065***	-.096***
Duration	0.547**	.001	-.001	.002	.001	.002	.001	-.001
Type				-.095	-.188**	-1.987***	-.821***	-1.832***
Int-L		-.002		-.002		-.002		-.002
Int-I		.007		.007		-.003		-.007
Ext-S			.322***		-.327***		.089	.097
Ext-F			-.022***		-.024***		-.039*	-.037*
Int-L*type						.385***		.259***
Int-I*type						.016		.028
Ext-S*type							.289***	.162**
Ext-F*type							.019	.016
R square	0.014	.003	.117	.004	.121	.133	.136	.186
F	6.013***	.702	27.991***	.734	23.231**	18.458***	18.98***	17.456***

Notes: here \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

### Dependent variable: crowdfunding performance

As for the fixed variables alone, the results show that the funding goal has a negative relation with the crowdfunding performance significantly ( $p < 0.05$ ), conforming to the previous studies, showing that the higher the goal set, the less possibility of the success (Mollick, 2014; Zheng *et al.* 2014; Pitschner and Pitschner-Finn, 2014). The duration period of the project is positive to the success, still indicating that the longer the duration sets the higher the possibility to reach the aim. And the moderator, the type of the project, has a negative effect on the project success in all the 5 models (Model 4-8) significantly, showing that a for-profit project being less likely to achieve their funding aims.

Belleflamme *et al.* (2013) found that non-profit campaign appears to have above-average success. And Pitschner *et al.* (2014) further assess the relative funding performance of for-profit and non-profit campaigns using a big dataset of 50,000 projects collected from the Kickstarter and find that non-profit projects are significantly more likely to reach their funding goals, which is consistent with our finding.

Concerning the effects of the internal social capitals, we test two types of internal capital, Int-L and Int-I. We find that Int-L has a negative and Int-I has a positive relationship with the dependent variable respectively, though not significant in model 2 and model 4, supporting H1b and non-supporting H1a. Results of Int-I conforms to some previous studies (Zheng *et al.* 2014; Barnes *et al.*, 2011; Buchan *et al.*, 2002; Colombo *et al.*, 2015). This finding confirms the function of

reciprocity, which is a well-known hallmark of internal social capital (Zheng *et al.* 2014; Nahapiet & Ghoshal, 1998; Portes, 2000). In the case of crowdfunding, proponent's direct investment in other projects can trigger reciprocity through a feeling of perceived obligation. And the proponent who has received investment from a certain proponent may feel obliged to payback, which is named specific reciprocity (Coleman & Coleman, 1994). The return of specific obligation then can be regarded as one kind of internal social capital. The CrowdfundingNet platform display the numbers and names of projects that proponents have supported in their public profile, so that all the proponents can check and tell who is the friend and real backer inside the platform and thus allow the internal backer to establish a reputation of giver (Bolino *et al.*, 2002). This mechanism may lead to more investments and thus lead to the success of a project. Another internal social capital named Int-L shows negative relationship with funding success, the possible reason may lie in the following 2 aspects: firstly, there are two kinds of mechanism of 'like' designed in the platform, one is the praise for the project from the outside persons, another is the 'like' that a proponent take for other projects internally. The scale of the former is greater than the latter, and too many internal contacts may lead to the risk of homologation and creative thinking, which diminishes the effect of the Int-L (Portes, 2000; Burt, 2004). Secondly, compared to Int-P, which requires real investment and support to another project, the Int-L is less helpful and reimbursement, which may lead to lower effects. Therefore in our sample, the Int-L relates negatively to the funding success.

For the external social capitals, results show that the Ext-F is negative and Ext-S is positive to the crowdfunding performance significantly (both at  $p < 0.01$ ), as shown in model 3 and 5, non-supporting H2a and supporting H2b. The former is different from the previous results (Mollick, 2014; Zheng *et al.* 2014). For The Ext-F being negative, the possible reason may be that we can only collect the fans of the founders' Weibo account, which appears to be only a part of a founder's external social capital. In China, the founders often provide one or more accounts of the following media: Weibo, Tencent QQ or QQ group and Wechat etc. But only fans of the Weibo account are available publicly, which make our calculation of fans of external social capital limited only to Weibo and thus decrease the number of fans and lead to a negative correlation. The former variable, Ext-S, is a new variable not used before, and the positive effects show that introducing the project though hyperlink provided by the platform may be an efficient way (Lovejoy *et al.*, 2012). When a project is transferred to other social media through hyperlink, the propagate effect is strengthened, thus improving the performance.

With respect to the moderating effect of the moderator, all the 4 interactive terms have positive relationship with the crowdfunding success, and only 2 variables, Int-L and Ext-S, show significant positive effects at  $p < 0.01$ , which conforms to our hypothesis H3. The results certify that for those for-profit projects, the more the social capital established, internal and/or external, the greater the

crowdfunding performance could be achieved, as shown in model 5, 6, 7 and 8, conforming to the previous studies that social capital can improve the crowdfunding success (Mollick, 2014; Zheng *et al.* 2014; Colombo *et al.*, 2015). And the most important finding here lies in that the moderating effect of the type of the project has a positive effect in improving the funding success, providing the possible way to achieve the success for those for-profit projects. We know that most of the for-profit projects are proposed by minor entrepreneurs and creative individuals; they do not have the backup of large organizations or programs like those of non-profit projects. So they have to try to expand the influence of their projects through internal and external social media. Mechanisms of setting up Int-L, Int-P and Ext-S are provided in the crowdfunding platform, and gaining Ext-F may depend on the work of the founders themselves. And according to the analyses, the best and the most effective way to expand the social capital here in crowdfunding platform are to improve the Int-L and Ext-S.

## **Conclusions**

### ***Limitation***

There are several limitations in this study. First, we measured the Ext-F of external social capital by the number of fans of a founder's Weibo account, neglecting other social network media such as QQ, QQ group and Wechat, which are very popular in Chinese daily lives and the crowdfunding platform as well. Further research should include other social network media to test the overall effects of fans of a proponent. Second, when we collect data of Int-I of internal social capital, we did not differentiate the time of the investment, whether before or after the expiration of his or her own project launched on the platform. According to previous studies (Mollick, 2014; Zheng *et al.* 2014), the number of project a founder invested before the expiration of his or her own projects is used to measure the obligation ties between the founders. The way they collect this data may be more reasonable, because only when the founder invest in other projects before the expiration time of his or her own project, can the founder who got the investment pay back to invest in his or her project. Further studies should collect data according to the explicit time of each investment. Third, we did not consider the time series of pledging and project category.

### ***Implications***

The paper has interesting implications for management and design of the crowdfunding platforms, as well as a guide to the campaign founders to promote his or her projects. Our results did not confirm that the internal social capital has significant effects on the success of the campaign, but it is not always the truth.

The proponent should take the type of the project into consideration. For those for-profit campaigns, the moderating effect of the internal and the external social capital is positive, with the Int-L and Ext-S both significant. So we suggest that proponents of for-profit projects should build their internal and external social capital to promote the crowdfunding performance. Our study had shown that Int-L is more helpful than Int-I, and we advise that founders prefer to click on the thumbs-up button of other proponents' projects, say Int-L here, than to be backers, say Int-I, because in the case of the latter, too much investment internally could be regarded as some kind of fraudulence made to achieve the target capital in the platform. And as for external social capital building, we suggest that the proponents encourage more 'share of the project' by using the mechanism of 'sharing' or 'hyperlink' on the platform, since sharing has wider spread space and strength than each individual's external social capital, such as Weibo and Facebook. With respect to the design and management of crowdfunding platform, we advise that the design of social capital and social network of the proponents' should be taken into consideration, because the platform itself should be regarded as the intermediaries of social capital (Colombo *et al.*, 2015). But the intensity of the social capital should be taken into consideration, for too much social capital, especially the investment on others' campaign may lead to the sense of fraudulence.

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