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### Individual crowdfunding practices

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## Individual crowdfunding practices

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This study investigates characteristics of individual crowdfunding practices and drivers of fundraising success, where entrepreneurs can tailor their crowdfunding initiatives better than on standardized platforms. Our data indicate that most of the funds provided are entitled to receive either financial compensations (equity and profit-share arrangement) or nonfinancial benefits (final product and token of appreciation), while donations are less common. Moreover, crowdfunding initiatives that are structured as nonprofit organizations tend to be significantly more successful than other organizational forms in achieving their fundraising targets, even after controlling for various project characteristics. This finding is in line with theoretical arguments developed by the contract failure literature which postulates that nonprofit organizations may find it easier to attract money for initiatives that are of interest for the general community due to their reduced focus on profits.

**Keywords:** crowdfunding; nonprofit; pre-ordering

*JEL Classification:* G32; L11; L13; L15; L21; L31

### 1 Introduction

What determines the success chances of entrepreneurs to reach their capital targets through crowdfunding? Crowdfunding changes sharply how capital is allocated and represents a viable alternative in channeling outside capital to entrepreneurial ventures. Furthermore, the amount raised through crowdfunding increased dramatically in recent years.<sup>1</sup> Crowdfunding helped to raise about \$1.5 billion of capital in 2011, according to a global survey conducted by *Crowdsourcing.org*.<sup>2</sup> However, little is known about the characteristics of crowdfunding practices and which practices are associated with fundraising success.<sup>3</sup>

In this study, we derive characteristics of *individual crowdfunding* practices by means of hand-collected data of 44 initiatives and then we examine drivers of fundraising success. We deliberately excluded initiatives launched using crowdfunding platforms since they have received greater attention in the literature (see, e.g., Agrawal, Catalini, and Goldfarb 2011; Hildebrand, Puri, and Rocholl 2011). In our context, individual crowdfunding practices relate to practices in which entrepreneurs do not make use of a 'structured' crowdfunding platform – such as *Kickstarter*, *RocketHub*, *IndieGoGo*, *MyMajorCompany*, and *Prosper* – to fund their venture. In such platforms, the process of raising funds is standardized, in

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contrast to individual initiatives where entrepreneurs can shape the process according to their specific needs. As will become clear below, this enables entrepreneurs to offer a greater variety of compensation to the crowd, including active involvement into the process itself.

Our hand-collected data are helpful in providing a better understanding of how such individual practices are structured and what motivates them. Perhaps surprisingly, only a limited fraction of initiatives is based on donations. In 91% of cases, crowdfunders receive either nonfinancial benefits (e.g., token of appreciation and right to receive the venture's product) or financial compensation (e.g., equity, revenue, and profit-share arrangements) in return for financial contributions. Individual crowdfunding initiatives take the form of pre-ordering of the product in more than one-third of our sample. Interestingly, nonprofit entrepreneurs represent 10% of individual initiatives covered by our study, while 36% of initiatives take place as a company.

In more than one-third of cases, crowdfunders' investments may be qualified as 'active', in the sense of financial contribution with a promise of compensation in addition to direct involvement in the venture they fund. This is a specific feature of individual practices where the crowdfunding process can be tailor-made. Direct involvement – for instance, participation in the decision-making, provision of time and expertise – allows entrepreneurs to extract more easily additional value from crowdfunders. This may in turn increase the level of community benefits provided to crowdfunders. We illustrate this with the following examples. The South African singer, *Verity Price*, produced her album through her own crowdfunding campaign. She set up a website where over 2000 crowdfunders participated in the creative content of her album by having a say regarding, e.g., songs recorded and artworks used. The crowdfunders of *MyFootballClub* are actively associated with the management of their football club by voting, among others, on budget, club officials, kit supplier contracts, and transfer deals. Furthermore, the crowdfunders' community is able to raise new ideas for activities at the club that are discussed and subject to approval via a vote by the community.

Another point worth stressing is that crowdfunding seems to involve relatively small amounts of capital. Although entrepreneurs raised on average around €150,000 from their crowdfunding campaign, the distribution is skewed; the median amount is merely around €6400. For the sake of comparison, seed capital invested by business angels is typically between \$25,000 and \$500,000, and deals involved by venture capitalists can be even larger (Linde and Prasad 2000).<sup>4</sup> In the theoretical part of this paper (see Section 4), we rationalize this stylized fact as follows. Compared with traditional funding, crowdfunding has the advantage of offering an enhanced experience to crowdfunders and, thereby, of allowing the entrepreneur to practice a behavior-based price discrimination and extract a larger share of the crowdfunder surplus; the disadvantage is that the entrepreneur is constrained in her choice of prices by the amount of capital that she needs to raise: the larger this amount, the more prices have to be twisted so as to attract a large number of crowdfunders in the first period, and the less profitable the price discrimination scheme.

In addition, entrepreneurs' motivations in using crowdfunding are further examined through a questionnaire sent to entrepreneurs of individually crowdfunded venture. This survey highlights, in particular, the significant role played by crowdfunding campaigns in getting public attention on the venture and/or on its products.

Finally, we examine what drives the success chances of crowdfunding. This is done through multivariate analyses. A striking result is that nonprofit organizations are significantly more likely to achieve their target level of capital in comparison with other organizational forms such as a corporation and freelance. This result appears robust to different econometric specifications. This finding is consistent with the notion that nonprofit

entrepreneurs find it easier to attract capital by donors and other sources, since their focus is not purely profit-driven (Glaeser and Shleifer 2001). As theoretically shown in the latter paper, profit-driven organizations may be prone to focus too much on profits at the expense of other dimensions such as quality of the product or service provided. This in turn may not be desired by donors and other sources aimed at fostering specific initiatives.

We structure the paper as follows. The following section reviews the related literature. Section 3.1 discusses data collection and defines the variables used. Section 3.2 describes key characteristics of individual crowdfunding practices, based on our hand-collected data-set. Section 4 presents a model of individual crowdfunding practices based on a simple extension of Belleflamme, Lambert, and Schwienbacher (2012; henceforth referred to as BLS). Section 5 provides the results of multivariate analyses on the determinants of crowdfunding success. Finally, Section 6 concludes.

## 2 Related literature

The literature on crowdfunding, and especially on individual crowdfunding practices, is still embryonic. BLS (2012) compare two dominant forms of individual crowdfunding practices (as shown in Section 3.1), where crowdfunders are offered either to pre-order the product or to advance an amount of money in exchange for a share of future profits. In either form, crowdfunders enjoy a community-based experience that confers them extra utility (community benefits) with respect to other consumers or investors. The authors show that entrepreneurs prefer pre-ordering if the initial capital requirement is relatively small, and the profit-sharing for larger capital amount. Their conclusions come from the crucial role played by the kind of community benefits that both forms of crowdfunding confer. In their case analysis of an equity-based individually crowdfunded start-up, Schwienbacher and Larralde (2012) also stressed the need for building a community of crowdfunders which enjoys additional utility from their participation. Both papers have implications for entrepreneurial ventures in attracting outside finance at their initial stage, beside other financing sources such as banks, friends & family, business angels, or even venture capital.

The literature on crowdfunding also extends to the study of platforms. Agrawal, Catalini, and Goldfarb (2011) study the geographic dispersion of investors in an online crowdfunding platform that enables musicians to raise money to produce their album. Although the geographic distance between the entrepreneur and the investors increases, they find that geography still plays a role at early financing stages. Along the same lines, Ward and Ramachandran (2010) estimate the extent to which demand for crowdfunding projects is driven by peer effects. They show that crowdfunders are influenced by the success or failure of related projects and use the actions of other crowdfunders as a source of information in their funding decisions.<sup>5</sup>

As mentioned in Section 1, *Crowdsourcing.org* provided an early survey analysis of crowdfunding platforms. They estimated the size of the crowdfunding market at \$1.5 billion in 2011. Although somewhat impressive, the size of the crowdfunding market remains relatively smaller than other sources. The Global Entrepreneurship Monitor (GEM) 2009 report assessed the size of informal investment (i.e., entrepreneurs themselves, friends & family, and business angels) at 11.3% of Gross Domestic Product in China, 1.5% in the USA, and 0.8% in France, among others.<sup>6</sup> According to the GEM report, informal investment is far more important than venture capital (see also Wong 2010).

Most strikingly, this survey conducted by *Crowdsourcing.org* shows that equity-based crowdfunding models tend to raise larger amount of capital than reward-based

crowdfunding models,<sup>7</sup> which is in line with BLS's (2012) predictions. However, reward-based models represent the majority of platforms.

Mollick (2012) provides another empirical study aiming at understanding the underlying dynamics of the recent rise of crowdfunding. Using data from *Kickstarter* (the largest crowdfunding platform at this date), the author examines, like us, the determinants of success in crowdfunding ventures, as well as their geographic distribution. Among the chances of success that the study highlights are the networks of founders and also the signals of the underlying quality of the project. Intermediary crowdfunding platforms, such as *Kickstarter*, are particularly helpful in these two matters. In contrast, individual entrepreneurs who launch their own crowdfunding initiatives, like the ones we consider in this paper, have a harder time in activating a network or in signaling the quality of their projects. This explains why these two variables are absent from our analysis. On the other hand, as individual crowdfunding initiatives are not as standardized as intermediated ones, entrepreneurs have a wider array of available strategies; this allows us to include into our analysis other variables related to the interaction between the entrepreneur and the crowd.

Finally, when crowdfunding practices emerge in nonprofit organizations, they can be related to the strand of the literature devoted to choice of an organizational form (for-profit vs nonprofit). Ghatak and Mueller (2011) develop a theoretical framework of labor donation theory to investigate under which conditions nonprofit organizations can provide a better alternative to motivated workers than other forms of organization. Their results built on Glaeser and Shleifer (2001), whose work models the incentives of an entrepreneur who chooses between a for-profit and nonprofit organizational form. Rooted in the contract failure literature, Glaeser and Shleifer (2001) argue that profit incentives might lead to undesirable outcomes from the point of view of donors who value the noncontractible outcome of the entrepreneurial venture. Motivating an agent on a contractible task (effort in reducing costs or boosting output) might lead to undesirable outcomes since another noncontractible task (effort in enhancing quality) might be neglected. They show that nonprofit is attractive for entrepreneurs because lower financial incentives in the nonprofit is compensated for by the increase in donations (see Bilodeau and Slivinski [2004] for a similar argument).

### 3 Empirical analysis of individual crowdfunding practices

In this section, we first describe our data-set and the variables that we use; then, we report a number of summary statistics.

#### 3.1 Data collection and variables

To shed light on the structure and characteristics of individual crowdfunding practices, we hand-collected data from various sources on all crowdfunding initiatives that we could possibly identify on the Internet. Data collection took place at the end of 2009 and early 2010. Since there was no database available or even listing of individual initiatives, we relied on the Internet to construct our sample. One advantage is that entrepreneurs using crowdfunding as a way to collect funds typically use the Internet to do so, as well as social networks and blogs. This helped us identify cases to construct our sample.

Our focus is on individually crowdfunded ventures, which excludes all initiatives made by crowdfunding platforms. The identification of entrepreneurs relying on crowdfunding has been done in two steps. Initially, we made the Internet research on individually crowdfunded ventures that are explicitly associated with the word of 'crowdfunding'. This

search did not allow us to find a sufficient number of such entrepreneurs. In a second step, we decided to revisit the definition of crowdfunding.<sup>8</sup> That is, we selected all entrepreneurs who use the Web 2.0 to generate funds for their investments via a large number of Internet users. This step was essential because some entrepreneurs have recourse to crowdfunding without knowing that their own fundraising is a kind of 'crowdfunding'. In total, we identified 69 cases and we managed to collect sufficient (but still partially incomplete) information on 44 of them.

We also complemented our data-set through a questionnaire sent to the 69 cases identified, during the months of December 2009 and January 2010. In total, we received 19 completed questionnaires (some only partially). The response rate in this survey is therefore around 32%. Despite the high response rate, the total sample remains relatively small, which inevitably raises some statistical concerns. In particular, this may induce some small-sample bias for which it is difficult to control; however, crowdfunding is a nascent phenomenon so that our data-set of 44 initiatives converges towards the entire population at the beginning of 2010.

All the variables employed in the analysis are defined in Table 1. We use two measures that reflect the funding outcome: *funds raised* is the total funds raised by the entrepreneur since the starting date of her crowdfunding campaign; and *success*, which scales *funds raised* by the amount of funds targeted. These variables capture the extent to which the personal crowdfunding campaign of an entrepreneur is successful. We then identify the type of organizational form adopted by the entrepreneur. Dummy variables *company* and *nonprofit* capture the type of organizational form – namely for-profit company and nonprofit association, respectively; other organizational forms (observed but not measured) are typically freelance and project-based initiatives. More precisely, *company* and *nonprofit* differ on the use of profits. The former may distribute them to persons who exercise control over the firm (e.g., limited liabilities companies), while the latter barred from distributing them to their controlling members or boards (e.g., charitable foundations and NGOs). Nonprofit organizations may instead use profits as perquisites and, so, do not allow enrichment from persons exercising control over the organization.<sup>9</sup>

We include in our analysis a set of variables reflecting key characteristics of individual crowdfunding practices: *pre-ordering* is equal to one if the entrepreneur presales the product/service before production takes place; *active implication* is equal to one if crowdfunders are involved in the venture they fund in one way or another (e.g., in the management and in the creative process); *social networks* is equal to one if at least one online social network or blog is used by the entrepreneur besides her own website; *product* is equal to one if the entrepreneur provides a product as opposed to a service; and *number of crowdfunders* is the number of crowdfunders having participated in the funding of the venture.

To explore the influence of the type of crowdfunding model, we include three dummy variables capturing whether the individual crowdfunding practice is equity-, reward-, or donation-based. This is the same classification adopted in the report of *Crowdsourcing.org*. Equity-based crowdfunding is defined as a model in which crowdfunders receive a financial compensation (e.g., equity, revenue, and profit-share arrangements). In contrast, reward-based crowdfunding allows crowdfunders to receive a nonfinancial benefit in return to their financial contributions (e.g., credit on an album, pre-ordering of products or services). In donation-based crowdfunding, crowdfunders make only donation without any kind of return.<sup>10</sup> We therefore differentiate the type of organizational form from the crowdfunding model, which is defined below. That is, nonprofit organizations do not imply necessarily donation-based crowdfunding model,

Table 1. Definition of variables.

Variable	Definition
Funding outcome:	
Funds raised	Total funds raised (in € at 2009 market prices) by the entrepreneur between the starting date of her crowdfunding campaign until the beginning of 2010.
Funds targeted	Total funds expected initially (in € at 2009 market prices) from the crowdfunding campaign by the entrepreneur.
Success	Ratio of <i>funds raised</i> to <i>funds targeted</i> .
Organizational form:	
Nonprofit	Dummy = 1 if entrepreneur is working on behalf of a nonprofit-making association.
Company	Dummy = 1 if the crowdfunding initiative is structured as a company.
Crowdfunding characteristics:	
Pre-ordering	Dummy = 1 if entrepreneurs presale the product/service before production takes place.
Active implication	Dummy = 1 if crowdfunders are involved in any way whatsoever in the venture they fund.
Social networks	Dummy = 1 if at least one of the following communication methods is used: Facebook, Twitter, blogs, LinkedIn, MySpace; these methods are characterized by facilitating social networking.
Product	Dummy = 1 if the goal of the venture is the making of a product (conversely a service).
Number of crowdfunders	Total number of crowdfunders per 100 crowdfunders.
Crowdfunding models:	
Equity-based model	Dummy = 1 if crowdfunders receive compensation in the form of equity in the venture they fund, revenue, or profit-share arrangements.
Reward-based model	Dummy = 1 if crowdfunders receive a nonfinancial benefit in return for financial contributions. Nonfinancial benefits often take the form of a token of appreciation or the pre-ordering of products or services.
Donation-based model	Dummy = 1 if crowdfunders make only donation without any kind of return (i.e., philanthropic or sponsorship-based incentive).
Date of establishment and start of crowdfunding campaign:	
Starting year	Year at which the crowdfunding campaign started.
Starting after 2007	Dummy = 1 if the crowdfunding campaign started in 2007 or later.
Age	The time span between the starting date of the crowdfunding campaign and the establishment date of the organizational form.
Country of registration:	
USA	Dummy = 1 if the registered office of entrepreneur is located in the USA.
Europe	Dummy = 1 if the registered office of entrepreneur is located in a European country.

and vice versa. Nonprofit organizations may indeed reward their crowdfunders through nonfinancial compensation.

Another category captures the age of the crowdfunding practice. We identify the year at which the crowdfunding campaign started by the inclusion of the variable *starting year*. The variable *starting after 2007* is equal to one if the crowdfunding campaign does not start prior 2007, and zero otherwise. *Age* measures the time span between the starting date of the crowdfunding campaign and the establishment date of the organizational form. Finally, we look at the region of the world where the registered office of the

entrepreneurial venture is located with the inclusion of the following dummies: *USA* and *Europe*; other regions are captured in the constant.

### 3.2 Characteristics of individual crowdfunding practices

Table 2 reports summary statistics (in Panel A) and survey outputs (in Panel B). Not surprisingly, summary statistics confirm that crowdfunding is a recent phenomenon. Over 84% of the entrepreneurs have used crowdfunding for their venture most recently only (variable *starting after 2007*), i.e., since 2007. Entrepreneurs start on average their crowdfunding campaign 1.5 years after having started their business/activity (mean value of *age* equals 1.54). Thirty percent of entrepreneurs are from the USA and 55% from Europe.

In terms of funding outcome, entrepreneurs have raised on average around €150,000 through their individual crowdfunding campaign; the median value is however substantially lower, namely close to €6400. Hence, amounts pledged by crowdfunders remain rather limited as compared with business angels or venture capitalists (e.g., Linde and Prasad 2000). Although the large discrepancy observed between the minimum and the maximum amount raised via crowdfunding, entrepreneurs have reached on average 62% of the amount they initially targeted.

Of interest are also the organizational forms adopted by entrepreneurs resorting to crowdfunding: 10% of crowdfunding initiatives are nonprofit organizations, while 36% are structured as a company; the remaining initiatives (representing 54% of our sample) stem from entrepreneurs who have recourse to crowdfunding, for instance, as freelance or in connection with a specific project only.

Interestingly, in 36% of cases, crowdfunders are offered to pre-order the product or the service. In more than one-third of our sample, crowdfunders act as active players in the venture they fund through involvement in the creative process, in the decision-making, or in various operating tasks. This variable *active implication* captures crucial characteristics of individual practices. On the one hand, active involvement by the crowd may increase the level of community benefits. On the other hand, the entrepreneurs' preference for individual crowdfunding practice as compared with standardized crowdfunding platform may be motivated by its ability to extract value from crowdfunders more easily. Indeed, it allows the entrepreneurs to involve their crowdfunders in tasks with value added – such as time and expertise – whose implementation via a standardized platform is not adapted whereas the flexibility of the individual practice makes it possible.

Regarding media usage, 78% of entrepreneurs used specific communication methods that facilitate social networking. The goal of the venture is the making of a product in half the initiatives. It is worth noting that individual crowdfunding initiatives attracted the participation of about 1700 crowdfunders on average.

Our study distinguishes different crowdfunding models. Pure donation constitutes 9% of our sample. Other models provide (financial or nonfinancial) return to their crowdfunders. The equity-based crowdfunding model is used in 30% of the cases, whereas reward-based crowdfunding model is adopted in 61% of the cases. This pattern is in line with the survey conducted by *Crowdsourcing.org*.

Our survey provides further characteristics. Panel B of Table 2 depicts that 63.2% of individual crowdfunding practices are managed by a single founder, 15.8% by two founders, and 21.1% by three founders (the highest number of founders observed in our sample). Seventy percent of these founders hold a university degree, while 10% are still attending university.



Table 2. Characteristics of crowdfunded projects: summary statistics and survey output.

<i>Panel A: summary statistics</i>						
Variables	Mean	SD	Median	Min.	Max.	No of obs.
<i>Funding outcome:</i>						
Funds raised	149,406.10	307,682.30	6431.13	35.73	1,123,563.00	30
Funds targeted	596,286.90	1,045,869.00	90,000.00	59.55	5,359,272.00	35
Success	0.62	0.85	0.43	0.00	4.50	30
<i>Organizational form:</i>						
Nonprofit	0.10	0.29	0.00	0.00	1.00	44
Company	0.36	0.49	0.00	0.00	1.00	44
<i>Crowdfunding characteristics:</i>						
Pre-ordering	0.36	0.49	0.00	0.00	1.00	44
Active implication	0.36	0.49	0.00	0.00	1.00	44
Social networks	0.78	0.42	1.00	0.00	1.00	44
Product	0.50	0.51	0.50	0.00	1.00	44
Number of crowdfunders	17.27	43.51	0.80	0.03	210	31
<i>Crowdfunding models:</i>						
Equity-based model	0.30	0.46	0.00	0.00	1.00	44
Reward-based model	0.61	0.49	1.00	0.00	1.00	44
Donation-based model	0.09	0.29	0.00	0.00	1.00	44
<i>Date of establishment and start of crowdfunding campaign:</i>						
Starting year	2007.84	1.67	2008	2002	2009	32
Starting after 2007	0.84	0.37	1.00	0.00	1.00	32
Age	1.54	2.23	1.00	0.00	9.00	26
<i>Country of registration:</i>						
USA	0.30	0.46	0.00	0.00	1.00	44
Europe	0.55	0.50	1.00	0.00	1.00	44
<i>Panel B: additional statistics based on survey output</i>						
Questions	Answers (%)	No of obs.				
<i>1. Number of founders</i>						
One founder only	63.2%	19				
Two founders exactly	15.8%	19				
Three founders exactly	21.1%	19				
<i>2. Question: 'Do founders hold a university degree?'</i> <sup>a</sup>						
Yes	70.0%	19				
No	20.0%	19				
Still attending university	10.0%	19				

<b>3. Question: 'Do crowdfunders expect to receive return or reward from their investment?'</b>						
Yes	76.5%	17				
No, they only make a donation	23.5%	17				
<b>3. bis. Sub-question: 'If yes, what kind?'</b>						
Direct cash payment (other than dividends from shares)	22.2%	9				
Shares/stock, including dividends in the future	33.3%	9				
Right to receive own product	66.7%	9				
Other	66.7%	9				
<b>4. Question: 'If you give investors shares, do you allocate voting rights to them?'</b>						
Yes	18.2%	11				
No	81.8%	11				
<b>5. Question: 'If other sources of finance than crowdfunding are used, please specify which one(s).'</b>						
Bank loan	0.0%	9				
Contributions from family and/or friends	18.8%	9				
Business angel	18.8%	9				
Founder's own money	25.0%	9				
Government subsidy	18.8%	9				
Other	43.8%	9				
<b>6. Question: 'What constitutes your main motivations for using crowdfunding?'</b> <sup>a,b</sup>						
Raise money	High relevant	Relevant	Neutral	Somewhat relevant	Not relevant at all	
Getting public attention for my company/project	92.9%	7.1%	0.0%	0.0%	0.0%	
Validate my product/service before selling it (market survey)	64.3%	21.4%	7.1%	0.0%	7.1%	
	35.7%	21.4%	7.1%	0.0%	35.7%	

Note: All the variables in Panel A are defined in Table 1. Information shown in Panel B was collected through the survey.

<sup>a</sup> If more than one founder involved, we consider each founder separately.

<sup>b</sup> No of obs. = 14 for all the three motivations listed. Respondents could also cite other motivations; they are not listed here explicitly.

Raising money was a strong motivation for all respondents, getting public attention was relevant (or highly relevant) for over 85%, and obtaining feedback for the product/service offered was relevant (or highly relevant) for about 60% of the respondents. Many of them combine crowdfunding with other sources of finance, notably with own money, friends & family money, business angel and government subsidy. Consistently with Panel A, 76.5% offer their crowdfunders a reward, mostly in the form of right to receive the product (66.7% of the cases of these 76.5% of the sample) or shares that may yield dividends in the future (33.3%). Direct cash payment is expected in 22.2% of the cases where a reward/return is promised. We note that, in 66.7% of the cases, other forms of reward are offered, e.g., being credited on an album or a film, receiving the possibility to transfer money to a charity of one's choice.

Several of these variables are correlated with each other, as evidenced in Table 3. While some correlations are intuitive, others are worth being discussed. Individual crowdfunding initiatives taking place as a company tend to involve more often active implication from crowdfunders; companies are more likely to enable crowdfunders to provide input or vote on the project. One possible reason is that projects done outside a company may be smaller and simpler; also, interacting with the crowd for a particular task requires an organizational structure that companies possess. This correlation is also in line with the notion that investors may require more control than for other organizational forms; our simple correlation, however, does not offer any conclusive evidence on whether this is actually a main driver. Conversely, nonprofit organizations offer active involvements of crowdfunders less often; this leads to think that their projects require little input from crowdfunders; also, conversely to companies, crowdfunders may put more trust into nonprofit organizations; but again, this claim is highly speculative here. An interesting positive correlation exists between *active implication* and *reward-based model*, whereas the correlation is negative with *equity-based model*. This suggests that reward-based models are more conducive to integrate crowdfunders within the organization than equity-based models.

Lastly, Table 3 shows that the correlation between *company* and *funds raised* is positive and statistically significant, suggesting that companies tend to generate higher amounts of money from their crowdfunding campaign. Compellingly, the variable *success* is positive and significantly correlated with the dummy variable *nonprofit*. Though suggestive, this evidence does not allow us to ascertain that nonprofit organizations are drivers of success of crowdfunding initiatives and even less to say something on the channel through which nonprofit organizations operate as drivers of success. The following two sections explore these issues further, respectively, from theoretical and empirical viewpoints.

#### 4 Theoretical framework

In this section, we propose a simple theoretical model that allows us to explain why *nonprofit organizations may be more successful in using crowdfunding* while incorporating important findings of the survey analysis as ingredients for the modeling set-up. We also compare the choice of opting for crowdfunding with the outcome of traditional funding, in order to investigate scenarios in which crowdfunding is an optimal choice for entrepreneurs. The model is adapted from BLS (2012) where it is assumed that the crowdfunders enjoy some additional utility with respect to the other consumers of the venture's product. This assumption reflects the fact (which we have amply documented above) that entrepreneurs resorting to crowdfunding use the Internet to maintain an interaction with their funders so as to provide them with so-called 'community benefits'. Moreover, we incorporate the

Table 3. Correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Funds raised	1.00											
(2) Success	0.32*	1.00										
(3) Nonprofit	0.02	0.49***	1.00									
(4) Company	0.68***	-0.01	-0.24	1.00								
(5) Active implication	0.16	-0.08	-0.24	0.41***	1.00							
(6) Social networks	0.03	0.07	-0.02	0.13	0.01	1.00						
(7) Product	0.31*	0.29	0.00	0.09	0.00	0.07	1.00					
(8) Number of crowd funders	0.36*	0.27	0.17	0.35*	0.38**	-0.25	-0.07	1.00				
(9) Equity-based model	0.20	0.01	-0.20	0.03	-0.28*	0.23	-0.15	-0.31*	1.00			
(10) Reward-based model	-0.11	0.01	-0.24	0.11	0.41***	-0.09	0.14	0.34*	-0.82***	1.00		
(11) Donation-based model	-0.15	-0.03	0.73***	-0.24	-0.24	-0.22	0.00	-0.06	-0.20	-0.40***	1.00	
(12) Age	0.42*	-0.08	0.14	-0.03	-0.39**	-0.25	0.11	-0.30	0.05	-0.19	0.19	1.00

Notes: All the variables are defined in Table 1. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

following additional key findings of the previous section into our analysis. We focus on crowdfunding experiences where consumers are invited to pre-order the product. The advantage of this form of crowdfunding is that advanced sales allow the entrepreneur to identify (and reward) the most eager consumers, and thereby to practice price discrimination. The drawback is that the revenues collected through advanced sales must be large enough to cover the initial capital requirement, which may actually restrict the scope for profitable price discrimination. This is the trade-off that we address in this model. The main result of the analysis is that crowdfunding is preferred to traditional funding as long as the capital requirement stays below some upper bound, which increases with the level of community benefits. Insofar as nonprofit entrepreneurs are more likely to offer larger community benefits than for-profit entrepreneurs (in the spirit of Glaeser and Shleifer 2001), it can be concluded that nonprofit entrepreneurs are also more likely to prefer crowdfunding over traditional funding.<sup>11</sup> We now develop this argument in details.

#### 4.1 Set-up

An entrepreneur needs an amount of capital equal to  $K$  to launch a new product. There is a unit mass of consumers who are identified by  $\theta$ , with  $\theta$  uniformly distributed on  $[0,1]$ . The parameter  $\theta$  is a taste parameter that measures the consumer's willingness to pay for one unit of the product (by assumption, consumers buy one or zero unit). If the unit price of the product is  $p$ , then a consumer of type  $\theta$  derives surplus  $U = \theta - p$ .<sup>12</sup>

The entrepreneur can choose between the two ways of financing the initial capital requirement: traditional funding or crowdfunding. Our modeling of the former encompasses a wide array of financing sources such as equity financing (venture capital, business angel, and friends & family) and bank loans as long as they do not involve extra nonmonetary benefits similar to what the crowd would obtain.

If the firm chooses *traditional funding*, then the sequence of decisions is as follows. In period 1, the entrepreneur incurs the fixed cost  $K$ , which is financed through, e.g., a bank loan. Then, in period 2, the entrepreneur sets a uniform price for its product, and consumers decide to buy or not. Denoting by  $p_t$  this uniform price, the indifferent consumer would be such that  $\theta - p_t = 0$ . The entrepreneur would then choose  $p_t$  to maximize  $p_t(1 - p_t)$ , where we assume that the marginal cost of production is equal to zero.<sup>13</sup> Consequently, the entrepreneur would set  $p_t = 1/2$ , all consumers with  $\theta \geq 1/2$  would purchase the product, and gross profits would be equal to  $1/4$ . We record for further reference that under traditional funding, the entrepreneur achieves a net profit equal to

$$\Pi_t = \frac{1}{4} - K. \quad (1)$$

This constitutes a worthwhile benchmark for comparison with crowdfunding.

The alternative to traditional funding is *crowdfunding based on pre-ordering*. The timing of the game is now as follows. In the first period, the entrepreneur sets the pre-ordering price  $p_c$  (with subscript letter  $c$  for 'crowdfunders') and consumers decide whether or not to pre-order at that price. If they do, they are offered some rewards by the entrepreneur, which increase their willingness to pay for the product. In particular, a consumer of type  $\theta$  who pre-orders the product is willing to pay up to  $\theta(1 + \sigma)$ , where  $\sigma$  measures the magnitude of the community benefits stemming from the crowdfunding experience. Let  $n_c$  denote the mass of crowdfunders. If  $n_c p_c < K$ , insufficient capital has been collected and the game stops. The crowd then receives its money back. Otherwise,

if  $n_c p_c \geq K$ , the game moves to the second period where the entrepreneur sets  $p_r$ , the price for consumers who did not pre-order in period 1 (with subscript letter  $r$  for ‘regular consumers’). Those consumers then decide to buy or not (observing all the previous steps).

#### 4.2 Optimal choice of financing source

As we solve the game backward for its subgame-perfect Nash equilibrium, we start by analyzing the second period. Suppose that  $n_c p_c \geq K$ . Then the indifferent consumer between pre-ordering and not is identified by a taste parameter  $\theta_c = 1 - n_c$ . Consumers who can potentially buy the product at period 2 are such that  $\theta \in [0, \theta_c]$ . Facing  $p_r$ , they buy iff  $\theta \geq p_r$ . Hence, the entrepreneur chooses  $p_r$  to maximize  $p_r(\theta_c - p_r)$ . The optimal price and second-period profit are easily found as  $p_r(\theta_c) = \theta_c/2$  and  $\pi_2(\theta_c) = \theta_c^2/4$ .

We can now move to the first period and identify the indifferent consumer between pre-ordering and not as the consumer for whom  $\theta_c(1 + \sigma) - p_c = \theta_c - p_r$ . Using the value of  $p_r$  that we have just derived, we find:  $\theta_c = 2p_c/(1 + 2\sigma)$ . We can then write the entrepreneur’s maximization program in period 1 as

$$\max_{p_c} p_c \left( 1 - \frac{2p_c}{1 + 2\sigma} \right) + \frac{1}{4} \left( \frac{2p_c}{1 + 2\sigma} \right)^2,$$

under the following constraints

$$\pi_1 \equiv p_c \left( 1 - \frac{2p_c}{1 + 2\sigma} \right) \geq K, \text{ and } 0 \leq \frac{2p_c}{1 + 2\sigma} \leq 1.$$

The unconstrained optimum is given by the first-order condition:  $p_c^* = (1 + 2\sigma)^2/2(1 + 4\sigma)$ .<sup>14</sup> The first constraint is satisfied if  $\pi_1 \geq K$ , which can be rewritten as

$$K \leq \frac{\sigma(1 + 2\sigma)^2}{1 + 4\sigma^2} \equiv \bar{K}.$$

We have thus two cases to distinguish. First, if  $K \leq \bar{K}$ , then the entrepreneur can set the price  $p_c^*$ . The total profit at the unconstrained optimum is then computed as

$$\Pi_c = \pi_1 + \pi_2 - K = \frac{1}{4} + \frac{\sigma^2}{1 + 4\sigma} - K. \tag{2}$$

Second, if  $K > \bar{K}$ , then the unconstrained optimal price and number of crowdfunders are insufficient to cover the capital requirement. Then  $p_c$  is computed as the solution to  $\pi_1 = K$ . This equality defines a polynomial of the second degree in  $p_c$  that has real roots as long as  $K < (1 + 2\sigma)/8 \equiv \hat{K}$ . Put differently, there is a threshold for the initial capital requirement above which the entrepreneur is unable to finance her venture through crowdfunding and pre-ordering. In BLS (2012), we show that the entrepreneur is then constrained to charge a lower price to crowdfunders:  $\bar{p}_c = \frac{1}{4}(1 + 2\sigma + \sqrt{(1 + 2\sigma)(1 + 2\sigma - 8K)}) < p_c^*$ . It follows that  $\bar{\pi}_1 = K$ , while  $\bar{\pi}_2$  (which is equal to

the total profit) is computed as

$$\bar{\Pi}_c = \bar{\pi}_2 = \left( \frac{\bar{p}_c}{1 + 2\sigma} \right)^2 = \frac{1}{16} \left( 1 + \sqrt{1 - \frac{8K}{1 + 2\sigma}} \right)^2. \quad (3)$$

We are now in a position to *compare the two funding mechanisms*. First, it is obvious from expressions (1) and (2) that crowdfunding is preferred to traditional funding for  $K \leq \bar{K}$ . Second, for  $K > \bar{K}$ , we compute from expressions (1) and (3) that

$$\bar{\Pi}_c \geq \Pi_t \Leftrightarrow K \leq \frac{2\sigma(2\sigma + 1)}{(4\sigma + 1)^2} \equiv \tilde{K}.$$

Collecting the previous results, we can state the following:

**Proposition 1.** (Optimal Financing Source) The entrepreneur prefers to finance the initial capital requirement  $K$  through crowdfunding as long as  $K$  is not larger than  $K_{\text{up}} = \max\{\tilde{K}, \bar{K}\}$ . Otherwise (and if  $K < 1/4$ ), she opts for traditional funding.

We check that  $K_{\text{up}} < \hat{K}$ ,  $K_{\text{up}} = \bar{K}$  for  $\sigma \leq 1/2$ , and  $K_{\text{up}} = \tilde{K}$  for  $\sigma > 1/2$ . The intuition behind Proposition 1 is quite simple. On the one hand, crowdfunding has the advantage of offering an enhanced experience to some consumers and, thereby, of allowing the entrepreneur to practice a form of behavior-based price discrimination, which has the potential to increase profits by extracting a larger share of the consumer surplus. On the other hand, the disadvantage is that the entrepreneur is constrained in the first period by the amount of capital that she needs to raise. This distorts the price discrimination strategy of the entrepreneur. The larger this amount, the larger the number of consumers that have to be attracted to cover it, which eventually reduces the profitability of the pre-ordering scheme. Empirical observations presented in Sections 2 and 3.2 confirm this prediction.

### 4.3 For-profit versus nonprofit organizations

We now enrich our model by considering that before choosing her source of financing (crowdfunding vs traditional funding), the entrepreneur also decides upon the organizational form of her venture: for-profit status or nonprofit status. The status of the firm has the following implication: under the nonprofit status, the entrepreneur is restricted in her ability to distribute profits to herself. In particular, we make the following set of assumptions. As in the so-called ‘contract failure literature’ and, especially, in Glaeser and Shleifer (2001), we assume that regardless of the status of the firm, the entrepreneur’s utility is an increasing function of the quality of the community benefits that she provides to her crowdfunders. That is, the entrepreneur gets a higher (lower) utility if the quality  $\sigma$  of the community benefits that she provides exceeds (falls short) of some exogenously determined level  $\bar{\sigma}$ . This can be justified either by referring to some altruistic preference of the entrepreneur (her desire to provide better quality than what is available on average) or as a reduced form of some reputation mechanism that would be at work in a richer model with asymmetric information and repeat purchases.

More precisely, we adopt the following framework. We focus on cases where crowdfunding allows the venture to achieve the optimal price discrimination scheme. That is, we take  $K \leq \bar{K}(\sigma) = \sigma(1 + 2\sigma)^2 / (1 + 4\sigma)^2$ . Net profits are then given by  $\Pi_c(\sigma) = \frac{1}{4} + \frac{\sigma^2}{1 + 4\sigma} - K$ , which are higher than under traditional funding. It is easily checked that  $\Pi'_c(\sigma) > 0$  and  $\Pi''_c(\sigma) > 0$ .

We assume that the cost of community benefits for the entrepreneur is given by  $C(\sigma)$  with  $C' > 0$  and  $C'' > 0$ . We also let  $b > 0$  denote the marginal utility for the entrepreneur

of increasing the quality of the community benefits. We posit then the following utility functions. If the venture is for-profit, the entrepreneur earns the venture's profits as income; she then chooses  $\sigma$  to maximize the quasi-linear utility function:

$$U_F = \Pi_c(\sigma) - C(\sigma) + b(\sigma - \bar{\sigma}).$$

In contrast, if the venture is nonprofit, the entrepreneur is forced, because of the nondistribution constraint, to consume profits as perquisites. We assume that the entrepreneur strictly prefers cash to perquisites; her utility from perquisites is thus modeled as a fraction  $0 < \delta < 1$  of the profits, which leads to the following utility function

$$U_N = \delta(\Pi_c(\sigma) - C(\sigma)) + b(\sigma - \bar{\sigma}).$$

Maximizing utility with respect to  $\sigma$  allows us to define the optimal level of community benefits for a for-profit ( $\sigma_F$ ) entrepreneur and for a nonprofit ( $\sigma_N$ ) entrepreneur, respectively, as

$$\begin{cases} \Pi'_c(\sigma_F) - C'(\sigma_F) + b = 0, \\ \delta(\Pi'_c(\sigma_N) - C'(\sigma_N)) + b = 0. \end{cases}$$

As  $\delta < 1$ , we have that  $C'(\sigma_N) - \Pi'_c(\sigma_N) = b/\delta > b = C'(\sigma_F) - \Pi'_c(\sigma_F)$ . Then, a sufficient condition to have  $\sigma_N > \sigma_F$  is that  $C'(\sigma) - \Pi'_c(\sigma)$  increases with  $\sigma$ , or that  $C''(\sigma) > \Pi''_c(\sigma)$ . Take, for instance,  $C(\sigma) = (\gamma/2)\sigma^2$ ; then, the condition  $C''(\sigma) > \Pi''_c(\sigma)$  is equivalent to  $\gamma > 2/(4\sigma + 1)^3$ , which is certainly satisfied if  $\gamma \geq 2$ .

This result (which mirrors Proposition 1 in Glaeser and Shleifer 2001) shows that if the cost of providing community benefits increases faster than the venture's profit, then *a nonprofit entrepreneur using crowdfunding will choose a larger level of community benefits than a for-profit entrepreneur*. The intuition is clear: because the nonprofit entrepreneur has to consume profits as perquisites, which she values less than cash, she puts a relatively larger weight than the for-profit entrepreneur on the noncash benefit of raising the quality of community benefits, which leads her to provide larger community benefits.

Now, remark that  $\bar{K}(\sigma) > 0$ , i.e., the threshold under which crowdfunding is always preferred to traditional funding increases with the level of community benefits. Then,  $\sigma_N > \sigma_F$  implies that  $\bar{K}(\sigma_N) > \bar{K}(\sigma_F)$ . There exists therefore a range of capital requirements,  $K \in [\bar{K}(\sigma_F), \bar{K}(\sigma_N)]$ , that nonprofit entrepreneurs are able to finance through crowdfunding while for-profit entrepreneurs are not.<sup>15</sup>

The former result may explain why *nonprofit organizations tend to be more successful than for-profit organizations in using crowdfunding*: by credibly committing to provide larger community benefits to crowdfunders, they extend the range of initial capital requirements that can be financed through crowdfunding.

## 5 Empirical analysis of determinants of crowdfunding success

The previous sections derived empirical predictions on drivers of crowdfunding success, in particular with respect to the organizational form adopted by the entrepreneurial firm. The theoretical model concludes that, ceteris paribus, nonprofit organizations should be able to raise larger amounts and thereby be more successful in attaining their targeted funds. In this section, we empirically investigate these predictions based on our collected sample of individual crowdfunding initiatives.



Table 4. Nonprofit organizations and the amount of funds raised: OLS regressions.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Nonprofit <sup>a</sup>	2.62* (1.45)	1.19 (1.18)	1.80 (1.45)	3.69* (2.01)	3.58** (1.38)	3.29*** (1.11)	2.08** (0.96)	3.04** (1.14)	3.67** (1.50)	4.09*** (1.05)
Company <sup>a</sup>						3.78*** (0.86)	2.87*** (0.74)	3.60*** (0.85)	4.16*** (0.94)	3.30*** (0.91)
Active implication	4.26*** (1.01)	2.15*** (0.93)	3.33*** (1.08)	4.32*** (1.08)	5.68*** (1.07)	2.61*** (0.86)	1.45* (0.76)	2.36*** (0.85)	2.17** (0.94)	3.86*** (0.95)
Social networks	-0.01 (1.08)	-0.56 (0.85)	0.47 (1.05)	-0.45 (1.22)	-1.20 (1.13)	-0.63 (0.83)	-0.88 (0.68)	-0.45 (0.82)	-0.58 (0.91)	-1.58* (0.86)
Product	3.10*** (0.86)	2.58*** (0.68)	3.10*** (0.82)	3.23*** (0.89)	2.94*** (0.91)	3.19*** (0.65)	2.78*** (0.54)	3.03*** (0.62)	3.13*** (0.67)	3.23*** (0.69)
In (Funds targeted)		0.46*** (0.11)					0.34*** (0.09)			
Number of crowdfunders			0.02* (0.01)					0.01 (0.01)		
Equity-based model				1.72 (2.14)					0.44 (1.62)	
Reward-based model				1.12 (1.96)					1.27 (1.46)	
Age					1.18 (0.36)					0.61* (0.32)
<sup>a</sup> Test diff. ( <i>p</i> value)						0.71	0.46	0.66	0.79	0.55
<i>F</i> statistics ( <i>p</i> value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted <i>R</i> <sup>2</sup>	0.50	0.70	0.64	0.47	0.65	0.71	0.81	0.75	0.71	0.80
No of obs.	30	30	29	30	22	30	30	29	30	22

Notes: The dependent variable in all the regressions is the natural logarithm of *funds raised*. All the variables are defined in Table 1. The method of estimation is OLS. A constant term is included in all the regressions, whose coefficient is not reported. Numbers in parentheses are standard errors. The row for the test of difference reports the *p* values for the null hypothesis of equality of coefficients on *nonprofit* and *company*. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

Table 5. Nonprofit organizations and fundraising success: Tobit regressions.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nonprofit <sup>a</sup>	1.29*** (0.45)	0.99** (0.46)	2.67*** (0.47)	1.00* (0.52)	1.34*** (0.45)	0.99** (0.47)	2.67*** (0.47)	1.06** (0.51)
Company <sup>a</sup>					0.20 (0.34)	-0.01 (0.35)	0.04 (0.30)	0.35 (0.44)
Active implication	0.01 (0.31)	-0.29 (0.34)	-0.02 (0.25)	-0.28 (0.40)	-0.06 (0.34)	-0.27 (0.35)	-0.02 (0.29)	-0.46 (0.46)
Social networks	-0.08 (0.33)	0.08 (0.33)	-0.56* (0.29)	0.08 (0.42)	-0.11 (0.33)	0.09 (0.34)	-0.55* (0.29)	0.05 (0.42)
Product	0.40 (0.26)	0.49* (0.26)	0.53*** (0.21)	0.57 (0.34)	0.39 (0.26)	0.48* (0.26)	0.52*** (0.21)	0.59* (0.34)
Number of crowdfunders		0.01 (0.00)				0.01 (0.00)		
Equity-based model			2.18*** (0.50)				2.15*** (0.51)	
Reward-based model			1.81*** (0.46)				1.80*** (0.46)	
Age				-0.12 (0.14)				0.52 (0.39)
<sup>a</sup> Test diff. ( <i>p</i> value)					0.04	0.06	0.00	0.28
LR $\chi^2$ (df) ( <i>p</i> value)	0.04	0.03	0.00	0.12	0.06	0.04	0.00	0.15
Pseudo <i>R</i> <sup>2</sup>	0.14	0.17	0.33	0.15	0.14	0.18	0.33	0.16
No of obs.	30	29	30	22	30	29	30	22

Notes: The dependent variable in all the regressions is *success*. All the variables are defined in Table 1. The method of estimation is Tobit. A constant term is included in all the regressions, whose coefficient is not reported. Numbers in parentheses are standard errors. The row for the test of difference reports the *p* values for the null hypothesis of equality of coefficients on *nonprofit* and *company*. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

We examine two dimensions of crowdfunding outcome: the total amount raised by the entrepreneur (the variable *funds raised*), and the total amount raised as compared with the entrepreneur's initial target (the variable *success*). Our findings are summarized in Tables 4 and 5. We focus particularly on the relationship between the nonprofit organizational form and fundraising outcome, controlling for other potential determinants of funds raised.

Table 4 shows Ordinary Least Squares (OLS) regressions on the natural logarithm of *funds raised*. This table exhibits that nonprofit organizations tend to attract larger amounts of money than other forms (columns 1–5), although the coefficient is not always statistically significant. When controlling for *company*, our other important form of organization, *nonprofit* clearly becomes strongly significant. However, this compares *nonprofit* with forms other than companies. The latter form also raises significantly more money than these other forms and the difference between *nonprofit* and *company* is never statistically significant [see the row *Test diff. (p value)* at the bottom of the table]. These results change little across specifications.<sup>16</sup> In contrast, Table 5 provides evidence in support of our main theoretical prediction that nonprofit entrepreneurs are more successful than for-profit entrepreneurs, including those organized as a company. We estimate Tobit models because the dependent variable, *success*, is left censored by construction (i.e., the lower limit is equal to zero). The coefficient of *nonprofit* is large (columns 1–8) and also statistically different from the coefficient of *company* in all specifications (columns 5–8). The effect is also economically meaningful: compared with other organizational forms, nonprofits tend to raise 129% more funds than targeted through crowdfunding (using the coefficient in column 1). Compared with for-profit entrepreneurs structured as company (the variable *company*), the economic impact is given by the difference between the two coefficients, which represents 114% more than targeted funds (using coefficients in column 5). This is remarkable and, as shown in Section 4, can be interpreted in line with the contract failure theory that these organizations are better at attracting outside funds because of their possible stronger focus on the social outcome than on monetary gains. Although we cannot exclude a possible bias due to the self-reporting of targeted amounts, any bias is likely to occur for all the initiatives; therefore, there is no specific reason to expect that entrepreneurs of nonprofit organizations are prone to understate more than entrepreneurs of other organizational forms. In other words, such a bias would inflate values of the variable *success* but it is likely to be similar across all initiatives.

According to Tables 4 and 5, other potential determinants appear to affect the amount raised in crowdfunding initiatives and success. For instance, the variable *active implication* enters positively and significantly in all the regressions in Table 4, implying that direct involvement by the crowd exerts an important role on the amount of funds raised. Hence, by involving crowdfunders into venture's activities, which confers them higher community benefits, entrepreneurs extend the levels of capital that are financed through crowdfunding. However, this result is not supported in the alternative measure, as shown in Table 5. Next, the use of social networks does not seem to enhance the amount of funds raised, while entrepreneurial initiatives that make a product tend to attract larger amounts of capital than those that offer a service (in Table 5 only significant in some specifications). This result may be mechanical, as activities that make a product will on average require larger investments than for providing a service. Indeed, the former may require significant production facilities that lead to major capital expenditures upfront. A second possible explanation for this positive effect may stem from the fact that the crowdfunders may be more tempted to provide money if they expect a tangible outcome; one reason could be that the provision of a product is

contractible and thus less subject to uncertainty about quality (Hart and Moore 1988). In this case, they may favor initiatives that make a product as opposed to a service.

These results are generally robust to the inclusion of additional control variables. For instance, including *funds targeted* (in italic) into the regression of Table 4 does not affect our diagnostics on differences (or the lack thereof) between nonprofits and for-profits. However, the variable is positive and significant, in line with intuition. Indeed, this variable is likely to capture financial needs of the entrepreneur. Age of the firm (captured by the variable *age*) does not affect amounts raised nor success of the crowdfunding initiative.<sup>17</sup> This suggests that delaying the crowdfunding campaign from the establishment date of the entrepreneurial activity has no effect on the amount collected. Finally, the choice of crowdfunding model (*equity-based model* and *reward-based model*) seems to affect success rate of the initiative (Table 5), but not the amount raised (Table 4). Compared with donation-based models (captured by the constant term), we therefore conclude that the effect of model choice on outcome is unclear in our analysis, or at best weakly against donation-based models.

These tests should be viewed as weak tests for one of the predictions of our theoretical model. Given the small sample size and limitations in the control variables available, these results should be taken with care. Still, they provide useful insights on what drives the success of crowdfunding initiatives and on the specificities of nonprofit organizations.

## 6 Conclusion

This paper examines characteristics of individual crowdfunding practices and drivers of fundraising success. To our knowledge, this is the first study directly dealing with individual crowdfunding practices based on a hand-collected data-set. We document evidence that the individual crowdfunding practice is a way to develop venture's activities through the process of fundraising, where entrepreneurs may tailor their crowdfunding campaign better than on standardized platforms. This enables entrepreneurs to offer a large variety of compensation to the crowd, including active involvement in terms of time and expertise. We also find that such individual initiatives generate on average small amounts of capital comparatively to other financing sources. Furthermore, the questionnaire sent to entrepreneurs highlights that crowdfunding allows them to attract attention on their own venture. This can become a vital asset, especially for artists or entrepreneurs in need to present their talent and product to the 'crowd' (as potential customers). In other cases, it is a unique way to validate original ideas in front of a specifically targeted audience. This may in turn provide insights into market potential of the product offered.

We also document that nonprofit organizations positively affect the success chances of entrepreneurs to reach their capital targets. The empirical evidence from multivariate analyses supports our theoretical predictions that nonprofit entrepreneurs tend to be more successful in using crowdfunding. In our setting, the reduced focus on profits by such entrepreneurs is viewed by crowdfunders as a credible commitment to provide larger community benefits and, thereby, extends the range of initial capital requirements that can be pledged through crowdfunding.

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## Notes

1. The potential of crowdfunding in boosting economic activity led, in April 2012, the US Congress to pass the Jumpstart Our Business Startups Act, designed to make easier for start-ups and small businesses to raise funds by, among other measures, protecting crowdfunders (i.e., the individuals who participate to the crowdfunding mechanism).
2. The report “Crowdfunding Industry Report: Market Trends, Composition and Crowdfunding Platforms” (May 2012) is released by Crowdsourcing LLC and Massolution. An abridged version is available at [www.crowdsourcing.org](http://www.crowdsourcing.org).
3. At the exception of Mollick (2012), see the literature review below.
4. Sohl (2003) reports that the typical angel early-stage round (seed or start-up) ranges between \$100,000 and \$2 million, while venture capitalists are in the \$10 to \$15 million range. This is in line with Ibrahim (2008), see also Freear, Sohl, and Wetzel (2002), Wong (2010), and Goldfarb et al. (2012).
5. Relatedly, there are several papers on the peer-to-peer lending platform *Prosper* (see, e.g., Hildebrand, Puri, and Rocholl 2011; Lin, Prabhala, and Viswanathan 2012; Zhang and Liu 2012).
6. Global Entrepreneurship Monitor: [www.gemconsortium.org](http://www.gemconsortium.org).
7. See Table 1 for a definition of equity- and reward-based crowdfunding models.
8. A detailed definition is provided in BLS (2012).
9. See, for instance, Hansmann (1996) for extensive developments.
10. The report of *Crowdsourcing.org* also identifies lending-based models. Our sample does not contain such models. This is expected since lending-based crowdfunding is better suited for platforms, which are beyond the scope of our analysis.
11. In BLS (2012), we also consider crowdfunding initiatives that compensate crowdfunders by offering them a share of the venture’s profits. Qualitatively similar results to those presented here can be obtained for this alternative form of crowdfunding (namely that crowdfunding is preferred to traditional funding when the required capital is relatively small, and that nonprofit organizations are more likely to be successful in raising funds through crowdfunding).
12. This problem was initially examined by Mussa and Rosen (1978).
13. In this linear model, this assumption is made without loss of generality. Prices can simply be reinterpreted as markups above a constant marginal cost.
14. We check that the second set of constraints is satisfied. We compute indeed  $\theta_c^* = (1 + 2\sigma)/(1 + 4\sigma)$ , which is clearly positive and smaller than unity.
15. The same result holds for initial capital requirements between  $\bar{K}$  and  $\bar{K}$  (where the entrepreneur is constrained in her price discrimination scheme). We check indeed that  $\bar{\Pi}_c''(\sigma) < 0$  (meaning that the condition  $C''(\sigma) > \Pi''(\sigma)$  is always satisfied) and that  $\bar{K}'(\sigma) > 0$ .
16. Untabulated regressions also show that these results do not change if we use bootstrap method for estimating standard errors. The statistics were obtained from 200 replications resampled from the actual data-set.
17. The number of observations drops, however, due to data availability.

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