

# When the Crowd Is Too Crowdy: The Relationship between the Number of Investors and Follow-up Company Growth in Equity Crowdfunding

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## Abstract

Equity crowdfunding platforms allow small ventures to raise money and find new investors among retail individuals. In this work we aim at analysing the relationship between the number of equity investors registered in the crowdfunding round and the follow-up growth of revenues reported by investee firms. We find support for the ‘curse of the crowd’ hypothesis, according to which a larger number of investors registered at the end of the equity crowdfunding campaign is associated to lower growth in the revenues, in the short run. We posit that this effect is attributable to coordination costs, possible conflicts and low incentive for investors to spend efforts in value-adding activities.

## 1. Introduction

Crowdfunding is the practice of financing a project by raising funds from a crowd, typically through the Internet, relying on specialized platforms acting as intermediaries. There are several typologies of crowdfunding, distinguished according to the reward received by crowd-investors, in exchange for their monetary contributions. More in detail there are four typologies: donation-based, reward-based, lending-based, and equity-based models. In the latter model, pledgers become shareholders of the company raising funds. While the literature points out potential opportunities and threats arising when (typically small) companies open their ownership structure to (potentially many) crowd investors, there is scarce empirical evidence on the relationship between the number of investors in an equity crowdfunding campaign and the follow-up operating performance of the investee company. On the one

hand, according to the ‘wisdom of the crowd’ hypothesis, a larger number of investors can increase the brand awareness for the company, enrich the skills and cultures available and increase the potential for valuable contributions; on the other hand, according to the ‘curse of the crowd’ hypothesis, raising money from many investors can increase agency costs, complexity, potential conflicts and time spent to manage the relationship with shareholders, which could be more wisely dedicated to the management of the venture.

In this paper, we aim at filling this gap, by looking at the Italian market. We collect data about the equity crowdfunding campaigns successfully closed by 54 issuers and we relate the follow-up performance to the number of investors. We find that a larger number of investors is significantly and negatively correlated with the growth of the revenues in the short run (‘curse of the crowd’ hypothesis).

The remainder of this work is organised as follows. Section 2 reviews the existing literature on equity crowdfunding, focusing on the relationship between the operating performance and the fundraising campaign. Section 3 develops our research hypothesis. Section 4 describes the sample and the empirical analysis, while Section 5 concludes.

## 2. Literature review

Equity crowdfunding has been defined as “a method of financing whereby an entrepreneur sells equity or equity-like shares in a company to a group of (small) investors through an open call for funding on Internet-based platforms” (Ahlers *et al.*, 2015). While most of the existing contributions in the literature on equity crowdfunding explore the determinants of the campaign success and the amount of money raised (Vismara, 2016; Vulkan *et al.* 2016; Block *et al.*, 2018; Malaga *et al.*, 2018; Barbi and Mattioli, 2019; Borello *et al.*, 2019; Ralcheva and Roosenboom, 2019), the academic debate is still in its infancy and leaves ample room for further research (Mochkabadi and Volkmann, 2019).

Crowdfunding may bring several benefits for capital-seeking businesses, that can be both financial and non-financial. In the literature there are some advantages that are frequently emphasized from different scholars, and they have been summarized in a framework developed by Macht and Weatherson (2014). First, crowdfunding in many cases is used to fill the gap between the entrepreneurs’ own financial resources and traditional sources of external financing. As a matter of fact, any person with access to the Internet could potentially become a crowd-funder (Hurley, 2012). Being open to everyone, crowdfunding is useful in reaching very large numbers of potential backers, shortening the process of searching for investors. Moreover, it is not only faster, but it also gives the possibility to address people worldwide, eliminating the problem of geographic proximity (Agrawal *et al.*, 2015). Then, a crowdfunding campaign gives much more exposure to businesses and entrepreneurs compared to more classic financing methods. This factor, summed to a sort of bandwagon effect (if one person invests, others follow), results in the facilitation to find further financings, that appears to be typical of crowdfunding campaigns (Vismara, 2018). Lastly, crowdfunding makes seeking external financing suitable also for businesses without a solid track record and valuable collaterals, which are usually not appealing for traditional sources of funding (Collins and Pierrakis, 2012).

Usually, entrepreneurs engage in equity crowdfunding campaign to leverage on their users’ and customers’ base (Giudici and Rossi Lamastra 2018); usually they place on the market a

small fraction of the company equity capital and maintain the control on the business, also recurring to the issuance of non-voting stock (Cumming *et al.*, 2019).

Yet, crowd-funders are unsophisticated investors, so they are likely unable to provide value-added activities typically brought by professional investors (e.g., business angels and venture capitalists; see Hornuf and Schwienbacher, 2018). Investing in equity capital of small entrepreneurial ventures is very risky; investors must trust in the due diligence outcome made by crowdfunding platforms (or cannot rely on any due diligence activity at all) and the risk of opportunistic behavior and moral hazard is high (Agrawal *et al.*, 2015).

Giudici (2015) highlights that the management of crowd-backed start-ups can be complex, since these firms lack competences, time and resources to manage a wide plethora of investors, this challenging the usual corporate governance rules. In the post-campaign phase, information asymmetry is increased by factors such as the geographical distance between investors and the entrepreneur. Moreover, the lack of repeated interactions between the entrepreneur and crowd funders, since an equity crowdfunding campaign is often a one-time event for the former, increases the probability of moral hazard.

Additionally, equity crowdfunding involves a series of considerable risks also for entrepreneurs (Vulkan *et al.*, 2016): if a campaign fails to reach its target, there is a potential negative image effect; moreover, the company has to disclose sensitive information on the product and on its financial performances.

### 3. Research design

Our research objective is to examine if the number of investors backing an equity crowdfunding campaign is positively or negatively correlated with the investee company's follow-up performance.

Starting from the analysis of the literature, we may introduce motivations predicting either a positive or negative effect.

On the one hand, collecting money from a large number of new shareholders may create a certain 'hype', increase legitimacy, brand awareness and the exposure of the company on the market (Brown *et al.*, 2017). The result of the increased publicity is beneficial, considering that early-stages ventures are characterized by a limited marketing budget (Giudici *et al.*, 2020). Then, relying on a large crowd of investors enables entrepreneurs to benefit from the so called 'wisdom of the crowds' (Surowiecki, 2004), that is to say, the collective skills and knowledge added by investors from diverse backgrounds, with expertise in different fields, to the intangible capital of the company. By tapping experts and professionals of the industry among the investors, entrepreneurs can obtain important feedbacks and ideas (Collins and Pierrakis, 2012; Stanko and Henard, 2016) and test new releases of the product/service prior to the launch on the market through open innovation (Giudici and Rossi Lamastra, 2018).

We introduce our research hypothesis H1a ('wisdom of the crowd' hypothesis):

*H1a: the number of investors in an equity crowdfunding campaign is positively correlated with the follow-up operating performance.*

On the other hand, we highlighted that the relationship with a large number of investors can be problematic, especially for small ventures, either because of information spill-over, expropriation risk or for the governance complexity and the time spent to manage relations

and potential conflicts with investors (Giudici, 2015). The larger is the number of new investors, the more likely will be a leakage of valuable information to competitors, as well as the risk of litigation among managers and shareholders. When the ownership structure is excessively fragmented, the incentive for pledgers to spend time and efforts to add value to the business project is lower, since most of the benefits will be expropriated by other pledgers. Moreover, as Signori and Vismara (2016) highlight, firms which attracted a larger number of investors in an equity crowdfunding campaign are less likely to issue further equity and secure additional funding, this limiting the opportunity to access new finance.

We introduce our alternative second hypothesis H1b ('curse of the crowd' hypothesis):

*H1b: the number of investors in an equity crowdfunding campaign is negatively correlated with the follow-up operating performance.*

#### 4. Data and empirical analysis

In order to test our research hypotheses, we collect data from all successful equity crowdfunding campaigns in Italy, from 2014 to 2017. The equity crowdfunding industry started in Italy in 2014, after the issuance of a specific law allowing start-up companies to raise money on authorised platforms. We have the unique opportunity to analyse the inception phase of the industry at a country-level, without limiting the attention to one or few crowdfunding platforms.

Our database is made up by 54 issuers. We collect data about the crowdfunding campaign (i.e., money raised, equity stake offered, number of investors), the company characteristics (business type, location, age, size in term of asset value) and the follow-up operating performance. In detail, we trace the value of revenues in the year before the campaign (time -1) and in the following two years (time 0 and 1). We do not rely on data about the net profit or the operating margin (EBIT or EBITDA) because in many cases they are negative.

Table 4.1 summarises the definition of the variables and reports some basic statistics.

The number of investors is comprised between 2 and 285; the mean value is 56.2 while the median value is 42.5. We see that all companies are very young and small, because in Italy in the period considered only start-up companies have been allowed to access equity crowdfunding. The minimum value of the revenues is zero, at the year of the campaign but also in the two following years. Mean and median values are increasing, this highlighting different paths of growths for the investee companies.

Variable name	Definition	Mean value	Median value	Min	Max
<i>Money_raised</i>	Money collected at the end of the equity crowdfunding campaign	€ 256,645	€ 200,000	€ 54,288	€ 1,000,227
<i>Investors</i>	Number of investors in the campaign	56.2	42.5	2	285
<i>Stake</i>	Equity stake offered in the campaign (%)	9.8	8.7	0.8	25.6
<i>Age</i>	Company age at the crowdfunding campaign	1.2	1	0	5

Variable name	Definition	Mean value	Median value	Min	Max
<i>Assets</i>	Accounting value of the asset (at the time of the campaign)	€ 991,581	€ 419,375	€ 41,000	€ 5,000,563
<i>Revenues (t = -1)</i>	Accounting value of the revenues (year before the campaign)	€ 123,594	€ 10,487	0	€ 1,821,321
<i>Revenues (t = 0)</i>	Accounting value of the revenues (year of the campaign)	€ 221,946	€ 55,245	0	€ 2,223,054
<i>Revenues (t = 1)</i>	Accounting value of the revenues (year after the campaign)	€ 347,798	€ 110,159	0	€ 3,094,896

Table 4.1. Variable description and basic statistics. Sample: 54 issuers from 2014 to 2017.

We run an econometric OLS model where the dependent variable is the operating performance of the companies, in term of revenue growth<sup>1</sup> and the independent variable is the number of investors that financed the company. We control for other variables, comprising the business of the company, its location around Italy and the year of the campaign, through industry dummies, regional dummies and time dummies, respectively:

$$\text{Operating performance} = f(\text{Investors}, \text{Control variables}, \text{Time dummies}, \text{Industry dummies}, \text{Regional dummies})$$

Table 4.2 reports the estimates of the regression model. We run two alternative models, for sake of robustness. In Model (1) the dependent variable is the increase in the log of revenues, comparing the year after the campaign with the year before while in Model (2) we compare the year after the campaign with the year of the campaign.

Model	(1)	(2)	(3)	(4)
Dependent variable	Log (1+ <i>Revenues</i> (t = 1)) – Log (1+ <i>Revenues</i> (t = -1))	Log (1+ <i>Revenues</i> (t = 1)) – Log (1+ <i>Revenues</i> (t = 0))	Log (1+ <i>Revenues</i> (t = 1)) – Log (1+ <i>Revenues</i> (t = -1))	Log (1+ <i>Revenues</i> (t = 1)) – Log (1+ <i>Revenues</i> (t = 0))
Log (1+ <i>Investors</i> )	-2.269 *** (0.725)	-0.507 * (0.262)	-2.854 *** (0.748)	-0.856 ** (0.517)
Log (1+ <i>Investors</i> ) <sup>2</sup>	-	-	0.624 (0.691)	0.035 (0.091)
Log (1+ <i>Age</i> )	-5.883 ** (2.240)	-1.457 (1.632)	-5.935 ** (2.317)	-1.264 (1.538)
Log (1+ <i>Assets</i> )	-1.351	0.234	-1.389	0.378

<sup>1</sup> We performed a normality test for the dependent variable, confirming that the distribution may be proxied by a Gaussian function.

Model	(1)	(2)	(3)	(4)
Dependent variable	Log (1+ Revenues (t = 1)) – Log (1+ Revenues (t = -1))	Log (1+ Revenues (t = 1)) – Log (1+ Revenues (t = 0))	Log (1+ Revenues (t = 1)) – Log (1+ Revenues (t = -1))	Log (1+ Revenues (t = 1)) – Log (1+ Revenues (t = 0))
	(1.495)	(0.148)	(1.476)	(0.149)
Stake	-2.573 (2.784)	-1.364 (1.359)	-2.879 (2.845)	-1.667 (1.579)
Time dummies	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Constant	15.003 (17.789)	9.756 (10.032)	14.678 (16.017)	9.387 (9.947)
R-squared	47.28%	24.23%	49.23%	27.56%
F-test	2.64 ***	1.31 *	2.78 ***	1.78 **

Table 4.2. Econometric analysis. OLS models. Variables are defined in Table 4.1. Sample: 54 issuers from 2014 to 2017. Robust standard error in parentheses \* p < .10; \*\* p < .05; \*\*\* p < .01

We notice that the number of the investors is negatively associated with the dependent variable in both the models, validating the ‘curse of the crowd’ hypothesis. In unreported regressions, we limit the sample to start-up companies only (45 observations) and the results are virtually unchanged.

In Model (3) and Model (4), we replicate the OLS regression introducing the squared of the number of investors, in order to look for non-linear effects. The coefficient is positive, but not statistically significant; thus, we do not find a U-shaped relationship: there seems to be no beneficial effect in attracting a large number of investors.

## 5. Conclusions

The number of pledgers in crowdfunding campaigns is often considered as a proxy of the offering success. Yet, small companies could find detrimental to involve a relevant number of new shareholders in the ownership.

This work explored the Italian market for equity crowdfunding, analysing the correlation between the number of investors and the *ex post* growth of revenues in the follow-up period. The results corroborates the ‘curse of the crowd’ hypothesis, against the ‘wisdom of the crowd’ alternative. Larger number of investors funding the campaign are associated to a lower increase in the revenues in the following year.

The results of our work are relevant for several reasons. First, the growth of investee companies in the short run may be predicted looking at the number of investors. Therefore, investors should give priority to companies raising money from a limited number of funders. Second, companies willing to attract a large number of investors should put in place governance mechanisms and contractual provisions as to limit the threats of information spill-

over and complexity in investor relations, by issuing, for instance, non-voting stock in case of small contributions, or adopting a nominee structure, with investors grouped in an investment vehicle. Finally, our results challenge the ‘wisdom of the crowd’ paradigm, confirming that, as Giudici and Rossi Lamastra (2018) posit, there is no evidence at the moment that in equity crowdfunding a large number of pledgers brings a significant value added to the entrepreneurial project.

We acknowledge that our analysis is not exempt from limitations. The number of issues considered in the sample is limited and most of the bidders are start-ups with no significant turnover; therefore, we report just a preliminary evidence and we leave further analyses to the future. We cannot exclude that the negative correlation that we find between the number of investors and the investees’ operating performance is true in the short run, but may revert in the long run. At the moment, unfortunately, it is not possible to extend the analysis, because we lack accounting data for a significant sample, provided that in Italy the industry started in 2014.

### Keywords:

crowdfunding; investors

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