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From the crowd to the market: The role of reward-based crowdfunding performance in attracting professional investors

Paolo Roma[a,*], Antonio Messeni Petruzzelli[b], Giovanni Perrone[a]

[a] Università degli Studi di Palermo, Viale delle Scienze (Building 8), 90128, Palermo, Italy
[b] Politecnico di Bari, Viale Japigia 182, 70126, Bari, Italy

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ABSTRACT

We focus on new technology-based entrepreneurial ventures engaging in reward-based crowdfunding and examine the effect of their performance in such funding channel on the likelihood of securing subsequent funding from professional investors. We also study how this effect is influenced by the presence of patents granted for the new product idea and the entrepreneur social capital. Results from a sample of technology projects launched on Kickstarter demonstrate that pledging a higher amount of money in crowdfunding can ignite professional investors' interest and thus help secure subsequent funding. However, this positive evidence is effective only when complemented by the presence of patents or a large network of social ties.

1. Introduction

Crowdfunding is a novel method for funding a variety of new projects, allowing founders of for-profit, cultural, or social projects to solicit funding from many individuals, i.e., the crowd, in return for future products/rewards or equity (Mollick, 2014). Interestingly, crowdfunding projects can vary substantially in both goal and magnitude, ranging from small artistic projects to new entrepreneurial initiatives seeking hundreds of thousands of dollars in seed capital (Schwienbacher and Larralde, 2012). The impressive impact of crowdfunding is quantified by some striking figures. Indeed, the amount of money raised in crowdfunding reached about $16 billions across the globe in 2014 and it is expected to grow dramatically in the next few years (Barnett, 2015). Two forms of crowdfunding currently dominate the scene: reward-based (or product-based) crowdfunding and equity-based crowdfunding (Belleflamme et al., 2014). In the first form, e.g., Kickstarter, entrepreneurs solicit individuals to fund their projects in exchange for rewards commensurate with the level of funding provided. Typical rewards comprise the product that will be commercialized by the entrepreneur if the project is successful. In the second form of crowdfunding, e.g., Crowdfunder, entrepreneurs ask individuals to finance the project in exchange for a share of equity securities.

Due to the extraordinary pace at which crowdfunding is growing and the consequent number of large-scale initiatives taken in several countries, e.g., the JOBS act in the US, academic research has recently commenced investigating the multi-faceted nature of this phenomenon. Particularly, a few empirical studies have examined the determinants of success of crowdfunding campaigns (Mollick, 2014; Ahlers et al., 2015; Colombo et al., 2015), whereas other works have explored the underlying dynamics behind the behavior of contributors of such campaigns, i.e., the backers, (Ordanini et al., 2011; Burtch et al., 2013; Agrawal et al., 2014b; Burtch et al., 2015; Cholakova and Clarysse, 2015; Kuppuswamy and Bayus, 2015). Furthermore, scholars have also investigated the differences in the way backers assess the quality of artistic projects as compared with art experts (Mollick and Nanda, 2016). Finally, a few theoretical studies have focused on the comparison of different forms of crowdfunding (Belleflamme et al., 2014).

While the extant literature has certainly enhanced our understanding of the internal dynamics of a crowdfunding campaign, scant attention has been devoted to the intriguing relationship between the crowdfunding phenomenon and traditional forms of new venture financing, such as angel and VC investments.[1] In particular, little is known on whether, for new technology-based entrepreneurial ventures utilizing reward-based crowdfunding, a better performance in such funding channel can increase the likelihood to secure subsequent (real) investments from professionally organized financial resource providers, such as angel and VC investors (hereafter referred to as professional investors in line with the prior literature, e.g., Nofsinger and Wang, 2011; Kotha and George, 2012). Indeed, many projects in reward-based crowdfunding platforms, e.g., Kickstarter, are launched by new entrepreneurial ventures that aim at marketing innovative technology-

* Corresponding author.
E-mail addresses: paolo.roma@unipa.it (P. Roma), antonio.messenipetruzzelli@poliba.it (A. Messeni Petruzzelli), giovanni.perrone@unipa.it (G. Perrone).

[1] A notable exception is Drover et al. (2017), who use experiments to understand whether various angel and crowdfunding attributes influence VCs' early-stage screening decisions.

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based products for the mass market. For these projects, crowdfunding can only broaden the "friends and family" slice of informal investing (Shane, 2013) as the amount raised by single projects in these platforms is usually below $1 million (Caldbeck, 2013). Thereby, tech entrepreneurs naturally need to rely on subsequent rounds of funding from professional investors to lead to growth and large-scale production (Segarra, 2013; Drover et al., 2017). Under the circumstances, reward-based crowdfunding can provide entrepreneurs and potential professional investors with information about the value placed by potential future customers on the new product idea, which helps dissipate the surrounding noise in terms of market potential (Agrawal et al., 2014a). In support of this view, Barry Schuler, managing director of DFJ Growth, a company investing in Formlabs, a low cost 3D-printing startup that raised $2.95 million on Kickstarter in 2012, referred to the crowdfunding campaign as "an ultimate test market" (Cao, 2014). Similar views have been expressed by other venture capitalists, such as Chris Arsenault from iNovia Capital and Alfred Lin from Sequoia Capital (Immen, 2012; Kolodny, 2013). In the same vein, serial tech entrepreneur Phil Windley echoed: "The primary reason I like the idea of Kickstarter is that it validates an idea. […] The money we'll make is likely small potatoes compared to what we'd raise in a typical funding scenario […]. But the big payoff is the information about the potential market we'll get" (Conner, 2013).

In this paper, we focus on new technology-based entrepreneurial ventures engaging in reward-based crowdfunding, and examine how their performance in such funding channel influences the access to subsequent funding from professional investors. We also study how the effect of the performance in the crowdfunding campaign is influenced by two crucial determinants of new venture financing that have been extensively underscored in the prior literature, namely the presence of patents granted for the given product idea (Lee et al., 2001; Baum and Silverman, 2004; Heeley et al., 2007; Graham and Sichelman, 2008; Helmers and Rogers, 2011; Conti et al., 2013a,b; Hsu and Ziedonis, 2013; Haeussler et al., 2014) and the entrepreneur social capital (Venkataraman, 1997; Stuart et al., 1999; Uzzi, 1999; Shane and Cable, 2002; Shane and Stuart, 2002; Batjargal and Liu, 2004).

Hence, our contribution is twofold. First, we add to the nascent literature on crowdfunding by shedding light on the informative role of the performance in reward-based crowdfunding for professional investors. In this respect, the present research also contributes to the extant literature on the determinants of new technology-based venture financing by introducing a new element at disposal of professional investors for their funding decisions, namely the performance in the crowdfunding campaign. We argue that, for new technology-based entrepreneurial ventures engaging in reward-based crowdfunding, a superior performance should be associated with a more probable access to funding from professional investors. This is because the crowdfunding performance can supplement the role of existing signals by informing about the quality aspect related to the market potential of the new venture's product idea, and thus alleviating this type of uncertainty suffering professional investors. Second, we offer unique contribution by proposing that, for new technology-based entrepreneurial ventures engaging in reward-based crowdfunding, the performance in the crowdfunding campaign and the two above mentioned determinants of new venture financing (i.e., patents and entrepreneur social capital) act as complements as the latter two inform about different quality aspects of the new venture and thus diminish different types of uncertainties. Specifically, patents unveil new venture's technological capabilities, and thus reduce the uncertainty about the technological viability of the new product idea and its value appropriability. The entrepreneur social capital alleviates the uncertainty about the new venture's capabilities to access the resources required to successfully implement the business initiative.

To test our arguments we considered all the entrepreneurial projects falling in the category Technology of the most important reward-based crowdfunding platform worldwide, i.e., Kickstarter, in a period ranging from its inception to the end of 2012. For each of the 105 technology-based entrepreneurial projects included in our final sample, we gathered data on funding (e.g., seed capital, Series A, B, …, mezzanine) received from professional investors after the crowdfunding campaign, the amount of money pledged (i.e., the amount reached at the end of the campaign), which is our main measure of performance reflecting the informative role of reward-based crowdfunding, the patents granted for the given new product idea, the entrepreneur social capital, and a number of additional controlling factors. In our setting potential endogeneity may arise as a consequence of omitted aspects of the new venture that are possibly correlated with both crowdfunding performance and ex-post financing from professional investors. To mitigate this risk, we carefully monitor each entrepreneurial project and its related events for sufficiently long periods before, during, and after the crowdfunding campaign. We also control for the quality aspects of the entrepreneurial project using the set of new venture's attributes suggested in the prior literature on new venture financing (Baum and Silverman, 2004) and on crowdfunding (Ahlers et al., 2015). In addition, we provide strong evidence that our results are robust and are unlikely to suffer from endogeneity bias with the support of carefully chosen Instrumental Variables (IVs) and the Heckman selection model.

Our results reveal that pledging a higher amount of money in the crowdfunding campaign can ignite professional investors' interest and thus help new technology-based entrepreneurial ventures secure subsequent funding. However, interestingly, this positive effect emerges (and becomes more intense) only when it is complemented by the presence of patents granted for the new product idea, which proves technological viability and exclusive protection, or when the entrepreneur has built a large network of social relationships and thus can benefit from a large pool of strategic resources. This suggests that, while professional investors interpret the relevant performance in crowdfunding as a positive signal from the market, they still need to be reassured about the real new ventures' capabilities to successfully implement the business initiative and profitably capture the relative value revealed by the crowd.

The remainder of the paper unfolds as follows. In § 2 we present our theoretical arguments and the relative hypotheses. In § 3, we describe the data, the variables and the methods adopted in this paper. In § 4, we present our empirical findings. In § 5, we resort to IVs and the Heckman selection model to further address endogeneity concerns, and perform a number of additional analyses for robustness checks. Finally, we provide implications for theory and practice and conclude in § 6.

2. Theory and hypotheses

2.1. The role of the performance in reward-based crowdfunding

A central tenet in the entrepreneurship literature is that because the quality of new ventures often cannot be observed directly, professional investors need to heavily rely on observable attributes to infer about the overall quality of a new entrepreneurial project and reduce the numerous sources of uncertainty (e.g., technology, market, competition, resource availability, entrepreneur capabilities) surrounding it (Stuart et al., 1999; Shane and Cable, 2002; Baum and Silverman, 2004; Hsu and Ziedonis, 2013; Ahlers et al., 2015). Several attributes have been found to positively influence new entrepreneurial venture attractiveness to potential professional investors, including entrepreneur human and social capital, the initial money raised from friends and family, as well as the presence of patents (Stuart et al., 1999; Shane and Venkataraman, 2000; Shane and Cable, 2002; Hsu, 2007; Conti et al., 2013a,b; Helmers and Rogers, 2011; Hsu and Ziedonis, 2013; Haeussler et al., 2014). These attributes help unveil relevant quality aspects of the new venture and thus are certainly important to alleviate professional investors' uncertainty and potential information asymmetries. However, they provide relatively scarce, or at least indirect, indications on the new venture's quality aspect that specifically pertains to the value