Venture Capital Funding After Crowdfunding Success: A Study of Successful Kickstarter Campaigns

Tamanna Tasneem

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By: Tamanna Tasneem

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Signed by the final Examining Committee:

_____Examiner
Dr. Juliane Proelss

_____Examiner
Dr. Yu Shan

_____Supervisor
Dr. Denis Schweizer

Approved by _____

Dr. Nilanjan Basu, Graduate Program Director, MSc. In Finance

_____

Dr. Kathleen Boies, Associate Dean, Research and Research Programs

Date August 29, 2020

ABSTRACT

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Tamanna Tasneem

For start-ups, a successful crowdfunding campaign could generate significant opportunities to access additional funding resources. This paper contributes to advancing our understanding of how characteristics of a successful Kickstarter campaign may determine a start-up's follow-on fundraising performance, with a special focus on future VC financing. We draw on 483 successfully crowdfunded projects on Kickstarter and more than 80 follow-on venture capital (VC) investments throughout the period 2010-2018 to investigate how various venture quality attributes (e.g. high pledged amount, strong social media alliance) and uncertainties (e.g. large number of backers) contribute to the subsequent increase (or decrease) in VC investments. Our results show that larger public investments (i.e. pledge amount) signal greater public confidence, translating into significant rise in the *probability* and *amount* of subsequent VC financing. We also find that founders' professional connections (in LinkedIn) factor in the venture's future funding success by raising both the *probability* and *number* of subsequent VC rounds. Statistically significant results were found supporting our hypothesis that VCs tend to devalue a large crowd of backers, presumably due to future market loss concerns. Both the *probability* and the *number* of follow-on VC rounds were negatively affected by a high number of backers. Finally, we show that serial creators with back-to-back crowdfunding successes are more likely to go back to the crowd for future funding needs which translates into higher *probability*, *number* and size of subsequent crowdfunding rounds. However this strong association was not found to be negatively affecting the degree of future VC involvement.

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1. Introduction

Over the last decade, we have been observing the growing emergence of crowdfunding within the early-stage financing industry; allowing founders of entrepreneurial, cultural, or social projects to solicit funding from many individuals, i.e., the crowd, in return for future rewards or equity (Mollick 2014). Traditionally, entrepreneurs with innovative ideas in need of financing have relied on supply of capital from venture capital investors (VCs) and angels, in addition to more traditional intermediaries, such as commercial banks (Chemmanur and Fulghieri 2014). For a long time, these were commonly the most sought-after sources of external financing available to start-ups, due to the uniqueness of their operations and investment practices. Beyond supplying the necessary capital, one of the most important ways in which intermediaries such as VCs nurture entrepreneurial firms is through a combination of intensive monitoring, help in developing high-quality management teams, and contacts and credibility with suppliers and customers (Sapienza, 1992; Barney, Busenitz et al, 1996; Sapienza et al. 1996). Not surprisingly, this form of 'coaching' is documented to have led to stronger growth and performance in portfolio firms (Chemmanur et al., 2010; Bertoni et al. 2011; Chemmanur et al., 2011; Puri and Zarutskie, 2012; Hellmann and Puri, 2002; Croce et al., 2013; Aggarwal et al. 2015).

Thus, for any start-up company, the capability to raise equity capital from a venture capitalist or a syndicate of venture capitalists constitutes a crucial and visible achievement. However, to receive VC funding business ideas undergo a profound selection process through a specialized investor, making the number of start-ups that eventually receive investments from VCs incredibly low. In 2019, VCs made investments worth $55 billion US dollars, although that capital was only distributed across 2,771 deals, compared to the nearly 32.5 million businesses in the US[1].

Crowdfunding, as an alternative funding source for early start-ups, has, therefore, rapidly gained popularity by allowing founders to bypass the venture capital industry and supporting products and ideas which would otherwise not be pursued. The growth of the crowdfunding industry has been phenomenal, with the size of the world crowdfunding market expected to reach USD 28.8 billion by the end of 2025- a 16 percent increase from the cumulative average growth rate in 2018.[2] Since its founding, in 2009, Kickstarter, a leading platform for reward-based crowdfunding worldwide, has launched more than 472,000 crowdfunding campaigns, with 37.49% successfully funded by more than 17 million individuals.[3] A typical reward-based crowdfunding campaign is intended to communicate the project's mission and vision readily and is designed to collect modest amounts from a large number of backers (Mollick et al. 2015). This form of crowdfunding treats funders as early customers, allowing them access

[1] https://www.statista.com/chart/11443/venture-capital-activity-in-the-us/

[2] https://www.marketresearch.com/QYResearch-Group-v3531/Global-Crowdfunding-Size-Status-Forecast-12411297/

[3] See https://www.kickstarter.com/help/stats

to the products produced by funded projects at an earlier date, better price, or with some other special benefit. And through their investments, individual backers express their interest in using the product and their belief in its successful development. Products are therefore not developed based on the perceptions and wishes of imaginary customers. (Kaminski et al., 2019).

However, as for any other funding mechanism in the capital markets, crowdfunding also has its fair share of challenges and criticisms. While supporters of crowdfunding say it can be interpreted as a positive signal of market acceptance by monitoring early adopter consumers' reactions (e.g., Strausz, 2017), critical voices argue that turning to crowdfunding indicates a failed "litmus test" of being able to convince a reputable professional investor. Furthermore, given that project backers are usually less sophisticated and inexperienced individuals, they may not choose to pledge for a start-up based on the same amount of background experience or with the screening expertise of professional investors, such as VCs or angel investment organizations (Bonini et al. 2019).

Nevertheless, there has been a fundamental shift in these beliefs with more research findings supporting the view that the crowd actually makes accurate, expert-like assessments (Mollick and Nanda, 2015), and relies on signals (Ahlers et al., 2015; Mollick, 2013). Contrary to the notion that backers are a group of mostly 'uncoordinated amateurs' prone to choose 'lemon' projects, it has been showed that aggregated group decisions tend to be more accurate than decisions by individuals in which only a single decision maker relies on his sole assessment (Budescu and Chen, 2014; Larrick, Mannes, and Soll, 2011). Mollick and Kuppuswamy (2014) went on to demonstrate that, over 90% of successfully crowdfunded projects remained ongoing ventures 1-4 years after their campaign and such success provided the creators access to outside funders. To be specific, high sums of (reward-based) crowdfunding, collected fast by start-ups is found to have a positive effect on VC managers' funding decisions (Mödl, 2018). Kaminski et al. (2019) showed that crowdfunding volume and VC investment volume are strongly correlated and concluded that an increase in crowdfunding investments Granger causes subsequent VC investments. While a successful campaign does not necessarily guarantee the support of VCs, crowdfunding investors surely fulfil a complementary role to VC investors' decisions, by providing them with information towards new products and product categories, particularly in sectors where the crowds are end users.

This paper examines how VCs interact with crowd-based decision making in a reward-based crowdfunding context, considering successful fundraising as strong quality signals. We base our research on the premise that capital investments by VCs entail a high degree of uncertainty and a large difference between the knowledge of capital-seeking entrepreneurs and capital-providing investors (themselves) about the true quality of a start-up (Amit et al., 1998; Busenitz et al., 2005; Gompers & Lerner, 2001). As a result, they tend to address this asymmetric information problem by relying on signals of quality, that are observable at the time of the investment decision helping them to correlate with the non-observable determinants of the start-up quality (Hoenig & Henkel, 2015; Stuart et al., 1999). This thesis therefore seeks to identify the impact and effects of certain observable characteristics of a successful crowdfunding campaign on VCs' subsequent screening decision.

We draw on 483 successfully crowdfunded projects on Kickstarter, a globally recognized reward-based crowdfunding platform, and more than 80 follow-on venture capital (VC) investments throughout the period 2010-2018 to investigate how various venture quality attributes (e.g. high pledged amount, strong social media alliance) and uncertainties (e.g. large number of backers) contribute to the subsequent

increase (or decrease) in VC investments. Furthermore, the effect of successful entrepreneurs' strategy of serial product launch (to leverage the existing backer-base) on follow-on VC funding has also been explored. We simultaneously examine the effects of these signals on follow-on crowdfunding and non-crowdfunding rounds (e.g. debt financing, equity crowdfunding and others) too.

Our results show statistically significant empirical evidence that higher pledged amounts significantly raise the *probability* of getting subsequent VC financing. We also found significantly positive association between pledged amount and the *number* of follow-on VC rounds and the *amount* that is subsequently raised through VCs. Next we find that having well-connected CEOs or founders (in LinkedIn) is significantly positively correlated to both the *probability* (of securing) and *number* of subsequent VC rounds. However, *amounts* subsequently raised from VCs were not found to be significantly correlated to the number of connections the founder has in LinkedIn. Statistically significant results were found supporting our hypothesis that VCs tend to devalue a large crowd of backers due to governance or future market loss concerns. Both the *probability* and the *number* of follow-on VC rounds were negatively affected by a high number of backers although no significant link was found between backer size and *amounts* raised from follow-on VC rounds. In our fourth and final analysis, we move away from the VCs and shed light on the founders' perspective. Here we find statistically significant results showing that entrepreneurs who've successfully crowdfunded multiple projects are more likely to return to the crowd for future financial needs; in other words, higher number of prior successful campaigns translates into higher *probability*, *number* and size of subsequent crowdfunding rounds. However this strong association was not found to be negatively affecting the degree of future VC involvement, as initially hypothesized.

This paper adds to several streams of academic literature, the first being the emerging field of crowdfunding (e.g. Agrawal, Catalini, and Goldfarb, 2015; Ahlers et al., 2015; Lehner, Grabmann, and Ennsgraber, 2015; Cumming and Johan, 2016; Mollick, 2013, 2014; Mollick and Kuppuswamy, 2014; Mollick and Nanda, 2015; Schweizer & Zhou, 2017; Günther et al. 2018; Cumming, Hornuf et al., 2019; Proelss et al, 2019 to name a few). Second, our study is also related to the literature on venture capital selection criteria (Baum & Silverman, 2004; Hall & Hofer, 1993; MacMillan et al., 1985a; Shepherd, 1999; Tyebjee & Bruno, 1984) and extends the stream of research on the role of observable qualities that signal a new venture's quality (Amit et al., 1990; Conti et al., 2013; Haeussler et al., 2012; Hoenig & Henkel, 2015; Hsu & Ziedonis, 2008). We specifically draw from the school of literature that have shed light on the compatibility of crowdfunding with traditional venture capital. Ryu and Kim (2019) show that projects that experience a positive crowdfunding outcome may sometimes lose access to VC financing ex post. Colombo and Shafi (2016) find empirical evidence that successful crowdfunding can either facilitate or hinder VC financing ex post. Our paper complements these empirical papers by identifying different sources of quality signals and uncertainties inherent in a successful campaign that VCs observe and incorporate in their investment decision.

The structure of this study is as follows: section 2 formulates the testable hypotheses and elaborates on the related literature while developing each. Section 3 goes through the methodologies that we used in this study along with the descriptive statistics and regression equations. Next we present the empirical results gathered from the regressions in Section 4. Section 5 summarizes the findings and provides a discussion on and limitations of this study while suggesting the possible avenues for future researchers. Lastly, section 6 concludes the paper.

2. Literature Review and Hypotheses

Angels and Venture Capitalists (VCs hereafter) face high levels of information asymmetry when deciding whether to fund a company. Brand new companies have no track record or established product or service for investors to rely on; and oftentimes, these companies are merely an idea, prototype, or product in its infancy (Ibrahim, 2018). Due to new ventures' information opacity combined with a limited lending history, most new and small entities have problems with credit access from mainstream lending institutions like banks (Binks et al., 1992; Hsu and Ziedonis, 2013). Such difficulties hamper new innovative ventures from getting much needed seed and start-up capital (Colombo & Grilli, 2007).

Since investments are uncertain, investors often need to act on potential signals of quality. As per Spence (1973), surrounding the plethora of observable characteristics and attributes of a subject are the quality signals that will ultimately determine the selection process and justify taking the risks. In other words, these signals can reduce the asymmetry as they serve to inform potential investors about a company's quality when that quality is otherwise difficult to observe.

New companies which choose to crowdfund were previously said to signal a weak company suggesting that the choice sends a negative impression that the business was not able to secure traditional funding sources earlier (Herdrich, 2015). In other words, many of the start-ups that choose to pursue crowdfunding as a means of raising capital do so because they have no other options, and they may still struggle to raise traditional venture financing in future (Green et al., 2016). Further concerns were- while expert-based investing has a proven track record, crowd-based wisdom cannot be the best at judging new business ideas (Ibrahim 2016) meaning small investors are likely to lack the financial sophistication and experience of venture capitalists, who are generally highly knowledgeable about valuing start-ups and assessing founding teams (Freear, Sohl, & Wetzel, 1994). Not surprisingly, bandwagon effects have been reported too (Mollick, 2013), where additional investors come on board when momentum is building up. Adding to the list, there were also questions about lax disclosures and the potential for fraud (Hazen, 2012).

Arguing the opposite, several studies suggest that crowdfunding does not always send a negative signal—and in important respects is a better alternative than other means of early financing. It is well positioned to capitalize on the wisdom of crowds and, instead of adverse selection, the 'wisdom of the crowd' theory suggests that, in most cases, crowdfunders will do a relatively good job at picking winners (Schwartz, 2015). The crowd has been reported to be surprisingly rational in their decision making, despite the potential for herding and madness (Mollick and Nanda, 2015). Mollick (2013) even showed that, entrepreneurial quality is assessed in similar ways by both VCs and crowdfunders. The first empirical study to associate signaling with funding success was conducted by Ahlers et al. (2015) where results showed that small investors do effectively interpret observable signals of venture quality and level of uncertainty sent by the entrepreneur before committing their financial resources to certain projects.

Therefore, receiving crowdfunding can be viewed as a signal that crowd investors are convinced of the project's growth potential, i.e. a successful crowdfunding campaign shows potential future investors that a company has a real customer base and that there is demand for its product or service (Mollick, 2013; Agrawal et al. 2014; Beckwith, 2016; Mollick et al, 2016; Ibrahim, 2018). As a result, venture capitalists can potentially benefit from crowdfunding by having entrepreneurs eliminate some of the questions around whether a market exists for their product or service (Fleming et al., 2016). This, in turn, may

also lead a project to receiving VC investments, since it serves as a proxy for its commercial potential. Successful projects in crowdfunding are shown to be positively related with ex-post performance (Kim and Viswanathan 2019). Mollick et al. (2014) suggest that crowdfunding generates additional benefits, even after the end of a campaign, such as direct access to customers, media, employees, and, most importantly, to venture capitalists. Drover et al. (2015) show that crowdfunding can act as a certification, making it easier for firms to obtain financing ex post.

Evidently, VCs invest significant time and energy in the screening process and the evaluation of relevant quality signals (Amit et al., 1990; Hall & Hofer, 1993; Inderst & Müller, 2004). Research on the criteria venture investors use to evaluate potential deals indicates that, overall, VCs emphasize four broad categories of start-up characteristics when making investment decisions: the management team, the product or service, the market attractiveness, and the venture's financial prospects (Petty & Gruber, 2011). However, as the latent "value" of these characteristics are often opaque, it's understandable that VCs will resort to the quality signals coming from a crowdfunded campaign that correlate with these characteristics in order to guarantee themselves the minimum respectable return on investment. Generally speaking, start-ups raising large amounts on a crowdfunding platform are more likely to attract the attention of VCs. In other words, the larger the public investments (i.e. pledge amount) the greater the public confidence, meaning market-validation is revealed by the amount of money raised in the campaign. In this context, Colombo & Shafi (2016) and Kaminski et al. (2016) showed that larger collected crowdfunding pledges correlate with higher and faster follow-up funding by VCs. Therefore, in line with their hypotheses we are also interested in examining the association of pledged amount with future VC funding outcomes to see whether their findings hold for our dataset as well. For this purpose, we use three separate parameters, namely a) the *probability* of getting subsequent VC funding, b) the *number* of subsequent funding rounds and c) the *amount* raised in subsequent funding rounds. Hence, we formulate our first set of hypotheses as follows:

Hypothesis 1 (a): Larger amount of pledged money is positively associated with higher probability of future VC funding.

Hypothesis 1 (b): Larger amount of pledged money is positively associated with higher number of future VC funding rounds.

Hypothesis 1 (c): Larger amount of pledged money is positively associated with higher amount raised in future VC funding rounds.

Besides using the amount raised in the campaign as a signal for venture quality, anecdotally, VCs are increasingly conducting "due diligence" on social media platforms as well and reacting favorably to successful start-ups with effective social media performance. Social network ties have always been found to be important in crowdfunding (Borst et al., 2017; Lukkarinen et al., 2014). Early stage firms use social media to communicate with their target stakeholders, such as customers, backers and investors. Studies have shown that social media promotes word-of-mouth information diffusion (Aral et al., 2013; Chevalier & Mayzlin, 2006; Dellarocas, Zhang, & Awad, 2007; Forman, Ghose, & Wiesenfeld, 2008; Zhu & Zhang, 2010) and serves as a platform for greater consumer engagement with a product or brand (Chen, De, & Hu, 2015; Ghose & Han, 2011; Goes, Lin, & Au Yeung, 2014; Li & Wu, 2018; Miller & Tucker, 2013). Other group of studies further show that the use of social media can influence overall firm performance, including the success of early stage firms and their ability to obtain

financing (Mollick, 2013; Agrawal et al., 2010; Hsu, 2007; Shane and Cable, 2002). Previous research on social media with respect to crowdfunding involved studying the creators' or firms' Facebook accounts (Cumming et al. 2017; Chung et al., 2015; Rishika et al., 2013), Twitter account (Kaur et al. 2017; Jin et al. 2017), YouTube (Fietkiewicz et al. 2018) in addition to the product's websites. Taking inspiration from those papers, we too study the interaction between founder's social media alliance and the firm's future funding prospects, focusing on a more business-oriented media, LinkedIn, and its impact on the project's capability to attract future rounds of VC financing.

Unlike Facebook and Twitter, LinkedIn is designed to help the creators build network with companies, organizations, and professionals, among others. With its professional nature and its purpose to create business openings, it helps create legitimacy and build trust among investors (Vismara, 2018). And the advantages are twofold when it comes to enhancing future funding prospects. First, the very presence on a large social media platform, such as LinkedIn validates the project's authenticity by significantly lowering the chances of the campaign being fraudulent. As the argument goes, failure to provide legitimate information can incur emotional cost to the entrepreneurs once the fraud is uncovered to all their social media connections, thereby resulting in a loss of social capital (Baum and Silverman, 2004; Cumming, Hornuf et al., 2019). Second, the existence of various business-oriented interest groups in LinkedIn allows new or less experienced investors (i.e. potential backers) to take cues from the experts and connect with aspiring business owners online through the website, especially in times of uncertainty (Malaga & Mamonov, 2018). Statically, LinkedIn is more than 277% effective than Facebook and Twitter for lead generation.[4] Such professional connections not only factor in the success of the campaign itself but also determine the venture's future funding success by enabling the entrepreneur to be discovered and provide additional information to potential investors for a better evaluation of the quality of their probable ventures (Hoang & Antoncic, 2003; Stuart et al., 1999; Roma et al., 2017). Vismara (2018) pointed out that public profile of investors on LinkedIn plays a key role in attracting other investors in early days. In their study, Amsden & Schweizer (2018) found that well-connected CEOs or founders with 500+ connections significantly enhance ICO (Initial Coin Offerings) funding success (as measured by token or coin tradability), referring this as an indicator of broader networks, which correspond to greater social alliance capital.

In a nutshell, prior studies have attributed funding success to higher number of LinkedIn connections. Therefore, just like other characteristics of a successful campaign, founders' number of connections becomes a metric of interest for professional investors, i.e. the campaign's success further cements the necessity of incorporating those numbers in VC's decision-making process, as those networks can be used to rigorously promote and advertise the venture's future products.

Since most participating firms in Kickstarter are connected to LinkedIn, it is possible to determine how many LinkedIn connections each founder or other key personnel have and whether they have reached the 500+ contacts benchmark. We are hence interested in investigating the leverage of the project owner's social media alliance (measured by- a) presence in LinkedIn and b) founder's 500+ connections) and how it impacts its future funding prospects.

[4] In a recent (2018) study of over 5,000 businesses, HubSpot found that traffic from LinkedIn generated the highest visitor-to-lead conversion rate at 2.74%, almost 3 times higher (277%) than both Twitter (.69%) and Facebook (.77%).
Source: https://blog.hubspot.com/blog/tabid/6307/bid/30030/LinkedIn-277-More-Effective-for-Lead-Generation-Than-Facebook-Twitter-New-Data.aspx

Hypothesis 2 (a): Higher social media alliance is positively associated with the probability of getting future VC rounds.

Hypothesis 2 (b): Higher social media alliance is positively associated with the number of VC rounds received by the entrepreneur in future.

Hypothesis 2 (c): Higher social media alliance is positively associated with the amount raised in future VC rounds by the entrepreneur.

Clearly, the information obtained from the campaign (such as those discussed above) can guide the VC in making sensible investment decisions by enabling them to interpret the quality signals. Academics have also ventured to explore other attributes of a campaign and studied their effectiveness as quality signals, e.g. speed of collection (Mödl, 2018), speed of product delivery (Colombo et al. 2016), location and industry of the project (Ryu & Kim, 2016). However, signals originating from a campaign cannot only be sent on purpose but also unintentionally (e.g., Janney & Folta, 2003; Daily et al., 2005). Signaling theory emphasizes that signals *can* be productive, but *need not* always be (Spence, 1974a). Therefore, founders might – by primarily seeking the productive function (e.g. accessing financial resources) – involuntarily send unintended signals that might communicate negative information to receivers. It has been demonstrated that the entrepreneur's decision to run a crowdfunding campaign may introduce certain disadvantages to the VC. For instance, in their study, Roma, Gal-Or & Chen (2018) argued that, crowdfunding reduces the size of the future market for the VCs, given that they do not receive any portion of the contributions of the fans raised in the campaign. In contrast, as they state, "if the entrepreneur does not launch the campaign, fans become part of the future consumer population and the revenue generated from them are split between the VC and the entrepreneur." Therefore, if the group of backers is relatively big, this loss to the VC can be substantial as the reduced market size will directly affect future project revenues.

In contrast to such concern, a stream of literature has spoken of the importance of the number of people who contribute to a crowdfunding campaign. The more backers a campaign attracted, the more likely the product was to exceed financial goals when it's launched to the mainstream market (Stanko et al. 2017). For the community of professional investors this carries an important signal who do take into account the number of backers while making their decisions. Due to the high risk of backing start-ups, VCs many times do not invest until a company has validated the market, gained traction, and demonstrated it can execute the project[5]. And because backers put down money for a product that has yet to be produced, the number of backers may serve as an early indication of the enthusiasm for the product (Agrawal et al. 2014). Crowdfunding backers will often take an active role in the innovation conversation (Mollick, 2016, Stanko and Henard, 2016) by becoming engaged in product development alongside the innovating entrepreneur, as that experience is typically considered by backers to be a rewarding part of the process (Agrawal et al., 2014, Gerber et al., 2012).

However, while it has been established that backers are an important contributor to the later market success of the product, only a handful of researchers have attempted to explore the interaction between

[5] "Crowdfunding vs. seed funding: All money is not created equal" by Rebecca Grant. *Venture-beat,* June 24, 2013. http://venturebeat.com/2013/06/24/crowdfunding-vs-seed-funding-all-money-is-not-created-equal/2.

their size and the future prospect of VC involvement, i.e. whether VCs' uncertainty revolving future venture revenue outweighs the advantages of having a huge a backer-base.. Therefore, aligning with Roma et al. (2018) we are also interested in examining whether or not VCs tend to devalue a large crowd of backers due to future market loss concerns.

Hypothesis 3 (a): Higher number of backers is negatively associated with the probability of getting future VC rounds.

Hypothesis 3 (b): Higher number of backers is negatively associated with the number of VC rounds received by the entrepreneur in future.

Hypothesis 3 (c): Higher number of backers is negatively associated with the amount raised in future VC rounds by the entrepreneur.

It is important to mention that, large number of backers is almost always a natural outcome of a large pledge which we hypothesize (*Hypothesis 1)* to have a positive impact on future VC involvement. In other words, even if the group of backers is relatively big, VCs might still be optimistic of future revenues if the addressable market for the product concerned is big enough in the beginning. However, certain successful projects, despite garnering the attention of a large crowd, fail to raise a large sum due to low contribution per backer, presumably signaling the VCs that even when the product is good, there is no attractive margin to earn. We also test this by identifying the campaigns with a large backer base (in the highest 25th percentile) that raised lower pledges (in the lowest 25th percentile) to see how this interaction translates into the VCs investment decisions.

While the notion of our hypotheses so far has been based on the VCs perception of future opportunities and uncertainties related to a large crowd, it's also reasonable to address how entrepreneurs tend to capitalize on the power of the community of backers. After running a successful campaign and having experienced the viability of crowdfunding as a financing option, entrepreneurs often resort to using crowdfunding campaign another time to raise additional financial resources. There is evidence that successful first-time crowdfunding entrepreneurs launch subsequent (follow-up) crowdfunding campaigns expecting that past backers' pledges will trigger future pledges and often manage to raise larger amounts successfully. A great example is represented by Pebble Watch. The company initially participated in Y Combinator, but failed to raise a series A from VCs.[6] Therefore, the company turned to the crowdfunding website Kickstarter to raise additional funding. The first product launch raised more than $10M, while the second raised more than $20M.

In line with this series of events, 2015 Kickstarter statistics[7] showed that the success rate of the next project for a repeat creator with one previous successfully funded project is 73% while that of a creator with two such projects is 80%. Lee et al. (2018) even found that such serial creators who experienced successful initial crowdfunding are more likely to explore a new industry or product category in the crowdfunding market. To the VCs, such back-to-back successes possibly present them with a more seasoned and experienced serial entrepreneur with a better risk perception and a greater optimism to venture into a new territory. Nonetheless, the question remains as to whether or not, for these serial creators, crowdfunding still remains a lucrative funding option over the VCs.

[6] Source: Venture Beat. Article accessible at http://venturebeat.com/2012/04/18/pebble-smartwatch-rejected-vcs-kickstarter/

[7] https://www.kickstarter.com/blog/by-the-numbers-when-creators-return-to-kickstarter

Since crowdfunding is a tool that creators can use again and again, the average number of backers typically grows as creators fund multiple projects and leverage existing relationships with the community. And not only because of the strong backer-base, Colombo & Shafi (2016) showed that this strategy of serial product launch by the same firm also stems from the self-confidence that non-VC backed entrepreneurs gain after successfully shipping their promised product to customers:

> "Shipping proves the viability of the product with customers and makes entrepreneurs more self-confident about their execution ability, thereby rendering coaching by VC less attractive."

According to them, the availability of this mode of financial bootstrapping makes VC financing less appealing to entrepreneurs enabling them to avoid incurring dilution costs. In our final set of hypotheses, therefore, we reason that as entrepreneurs continue to choose to raise money through crowdfunding sites, and their projects become successful, the odds of subsequent VC involvement gradually decrease. The degree of an entrepreneur's association with crowdfunding can easily be measured by looking at the number of projects s/he has created in the crowdfunding platforms at his/her disposal. We consequently formulate our fourth hypothesis as follows:

Hypothesis 4 (a): Higher number of crowdfunding campaigns created by an entrepreneur negatively affects the probability of subsequent VC involvement for future projects.

Hypothesis 4 (b): Higher number of crowdfunding campaigns created by an entrepreneur negatively affects the number of subsequent VC rounds for future projects.

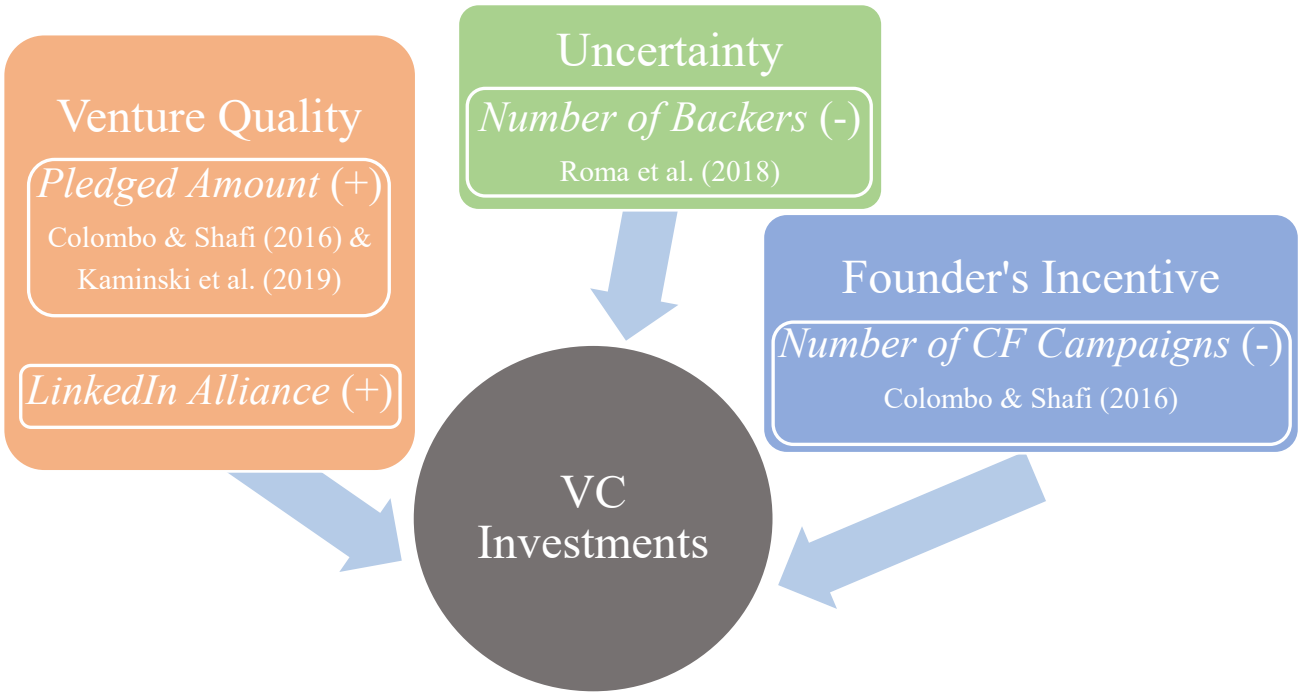
Hypothesis 4 (c): Higher number of crowdfunding campaigns created by an entrepreneur negatively affects the amount raised in subsequent VC rounds for future projects.

In summary, this thesis makes an attempt to explore the interaction between the quality signals coming from a successfully crowdfunded campaign and the subsequent increase (or decrease) in VC investments. From a signaling perspective (Spence, 1973) we argue that crowdfunding pledges, the entrepreneurs' affiliation with social media along with the size of the backer community can serve as critical quality signals about a project's viability in venture investor's decision-making processes. To conceptualize the development of the above hypotheses, we create a framework (Figure 1) categorizing these attributes under three driving forces, namely- venture quality, uncertainty and founder's incentive, which we believe are responsible for positively (or, negatively) affecting future VC funding outcomes.

Essentially, crowdfunding pledges reflect the "wisdom of the crowd" in "screening new venture offerings and voting with their individual investment pledges for the best ones" (Bruton et al., 2015) thereby informing VCs of the product's demand and market acceptance. Therefore, following Colombo & Shafi (2016) and Kaminski et al. (2019), we first hypothesize that crowdfunding volume (i.e. pledged amount) and subsequent VC investment (probability, number of rounds and amount) are positively correlated. Another aspect that is believed to indicate high venture quality is the level of association the entrepreneur maintains on a social media platform. LinkedIn, a prominent but often overlooked social network, was the primary choice for investigating the leverage of the owner's social media network for

our research due to its professional nature and we argued that firms (or, founders) with mass followers on this platform will positively influence their prospects of being selected by venture investors.

Figure 1: Factors affecting VC investments for a crowdfunded start-up



The third hypothesis addresses some of the VC's concerns with respect to the visible and oftentimes largescale involvement of the online backer community. Aligning with Roma et al. (2018) we reasoned that although the large size of backers may present a strong signal of market validity, VCs might be skeptical towards a reduced market and, therefore, will shy away from start-ups with large number of small investors. For our final hypothesis, we turned our focus towards the entrepreneurs' incentive to approach VCs and argued that, those who've successfully crowdfunded multiple projects are more likely to return to the crowd for future financial needs, thus, reducing (albeit not eliminating) the likelihood of future VC involvement.

3. Methodology

3.1 Sample and Descriptive Statistics

This research is based on data of all successful Kickstarter crowdfunding campaigns over the period from 2010 to 2017 in the fields of design, games and technology, raising at least five hundred thousand (500,000) US dollars. To construct our database, we include projects that ran outside the U.S. as well and therefore the currency conversion rates of the respective countries while maintaining the abovementioned threshold.

Kickstarter is the world's largest online reward-based crowdfunding funding platform, which has the mission to "help bring creative projects to life".[8] According to its website, more than USD $4.7 billion has been pledged to more than 176,000 successful projects[9] from its inception on April 28, 2009. Creators of projects apply for funding in fifteen different areas ranging from culture to technology. While campaigning for a project, they choose a deadline and a minimum funding goal. Individual funders (backers) can contribute small amounts of money starting from a few dollars. For their contributions they are offered rewards, which vary depending on the amount the backer contributes; including things like cards, t-shirts, cups, or to be one of the first that obtain the new product. Kickstarter operates on an All-or-Nothing basis, meaning that only when funding goals are reached the project creator will receive the pledged funds (Cumming, Leboeuf, and Schwienbacher, 2019) and if the goal is not reached by the deadline, the project ends without any funds collected. Moreover, potential and actual project backers may participate in online discussions and exchange their opinions about the project with the creator and among each other. Being a global funding platform for creative projects and nurturing a strong backer network and active online communication, Kickstarter, therefore, motivated our choice to employ it as the primary source of information although we have complemented our data using additional sources, such as Indiegogo, LinkedIn, and company homepages. We limited the sample to the period before the end of calendar year of 2017 so that we allow about at least one year[10] for the companies to receive venture capital after the finish of the campaign. All variables on subsequent financing, including VC, crowdfunding, angel investments, seed funds, debt and equity crowdfunding were obtained using manual searches for all the projects, companies and entrepreneurs in places such as news articles, *Crunchbase* website, and investors' blog-posts etc. The focus of this search was on- first, determining whether a project received follow-on investment, particularly VC, after successfully closing the crowdfunding campaign and second, if so, hand-collecting as many details on that funding round as possible (e.g. date the funding was secured, amount & currency, identity of the VCs).

Our final sample consists of n=483 Kickstarter projects and a total funding volume of $591.23 million USD pledged by a total of 5,106,804 backers. A median project raised USD 787,490. The chronological sequence of the initiation date, business categories, and raised volumes (in USD) of campaigns are

[8] https://www.kickstarter.com/charter/, accessed January 14th, 2020.

[9] See https://www.kickstarter.com/help/stats

[10] This was inspired by Colombo et al. (2016): "It is noteworthy to mention that in hindsight one-year cut-off is a reasonable timeframe to observe financing given that (a) the average number of days for firms ever receiving a round of financing after campaign is 289 days, and (b) on average, entrepreneurs estimate to ship within 112 days and actually deliver in 275 days.

shown in panel A of Table 1. We find that backers have spent approximately USD $169 million on projects categorized under 'Product design' (133 campaigns) - the highest among the 23 business categories covered by our sample. This is followed by Video Games (61 campaigns) which has raised the most money within the "Games" business category (USD $88 million). Campaigns by country for each respective year are shown in panel B of Table 1. Approximately 73% of the sample campaigns were launched by creators in the U.S. (352 projects), followed by creators in the U.K. (27), Canada (17), Australia (15) and Germany (9) among others.

--- please insert Table 1 about here ---

Using information from the campaign's webpage in Kickstarter, the LinkedIn pages associated with the campaign/creator and the hand-collected details on subsequent funding rounds, we create 27 dependent and explanatory variables along with additional controls encompassing the campaign features, creator characteristics, follow-on investments, association with LinkedIn and so on. See Table 2 for variable descriptions.

--- please insert Table 2 about here ---

Table 3 shows the descriptive statistics for all the dependent and explanatory variables along with the additional controls. Sample size is reduced to 330 for the variable *CEO LinkedIn 500+* (see Table 2 for variable description) since no LinkedIn accounts were available for the remaining projects in the sample. On the same note, of the total sample, 395 campaigns had a natural person(s) enlisted as its 'creator'(s) thereby reducing the sample size for the variable *Female Creator* accordingly. Table 4 shows the correlation between all the twelve independent and control variables.

--- please insert Table 3 and 4 about here ---

3.2 Variables

Dependent Variables: In the empirical analysis we attempt to examine how certain attributes of a successful crowdfunding campaign affect future VC investment outcomes; the outcomes being- a) whether a subsequent VC investment was secured or not; (b) the *number* of such follow-on rounds and (c) the *amount* raised through these rounds. In other words, to test each set of our abovementioned hypotheses we introduce three dependent variables- Subsequent VC Financing (0/1), Number of Subsequent Financing and Amount of Subsequent Financing. To supplement our empirical analysis, we also explore how a crowdfunding success influences the firm's overall funding future, considering other sources as well- i) fund raised from all types of sources combined (crowdfunding, seed funds, angel investors, venture capitalists, equity crowdfunding, debt financing and others)- *SubFin*, ii) fund raised from crowdfunding platforms only- *SubCF*, iii) fund raised from Kickstarter only- *SubKickstarter*, iv) fund raised from sources other than crowdfunding platforms- *SubFin_notCF*.

Independent Variables: To test the first interaction effect of pledged amount of a project on its future funding outcomes described in Hypothesis 1 above, we develop our first independent variable- *Ln(Pledged Amount)*, which represents the natural logarithm of the pledged amount in US dollars for each campaign. We use the natural log value of these variables to alleviate skewness concerns and to reduce the influence of outliers in the sample. Our next set of variables are associated with the project

owner's social media alliance, measured by- a) presence in LinkedIn and b) founder's 500+ connections. Therefore, in this set, our first variable of interest is *LinkedIn Page* which is a dummy variable that equals 1 if a link to a LinkedIn page of the creator(s) and/or the project is available, and 0 otherwise. The next variable is *CEO LinkedIn 500+* - a dummy variable that equals 1 if the CEO or founder (if no CEO is mentioned) has 500 or more contacts on LinkedIn, and 0 otherwise[11]. To test the effect of the number of backers on future funding outcomes, we include *No. of Backers* as our main explanatory variable for the third hypothesis. In addition, we also introduce the variable *Backers(Q_4) x Pledge(Q_1)* representing campaigns with a large backer base (top 25th percentile) and low pledge (bottom 25th percentile) to capture the effect of low-contribution-per-backer projects on future VC involvement. Finally, for our last set of hypotheses we introduce two more independent variables to measure the degree of an entrepreneur's association with crowdfunding. First, we use *No. of Projects Created in Kickstarter* - a count of the projects created by an entrepreneur in Kickstarter till date. This information is easily accessible from the campaign's Kickstarter page and enlists both successful and unsuccessful projects alike. However, entrepreneurs often opt for campaigning for their products simultaneously on multiple crowdfunding platforms or try other platforms after achieving success on one. Hence, we create our final explanatory variable *No. of all CF projects*- a total count of all crowdfunding projects ever created by the owner, irrespective of the platform.

Control Variables: We include a set of control variables that are expected to affect the decisions of subsequent funders. First, we include the characteristics of the project owners in our model. We assume that signals about the gender and composition of the project owners (a single independent person, company or organization) will signal entrepreneurial capacity and will influence the decisions of backers and future investors. Thanks to Kickstarter, we were able to include the total number of projects backed by the founder on Kickstarter as an additional control which, like the *No. of Projects Backed (Kickstarter),* incorporate the founder's level of engagement in crowdfunding activity.

Second, we control for a couple of campaign characteristics, e.g. goal or target amount, duration of the project and whether or not the project was marked as "Projects We Love". The goal of a project plays a crucial role in securing funding given that an entrepreneur needs to have a fine balance between raising enough funds and, at the same time, not asking too much. A project with a target amount set too high runs the risk of scaring off potential investors and being a failure (Frydrych et al., 2014; Mollick 2013), which, in turn, sends a negative signal costing the project's future "fundability" (i.e. affecting the entrepreneur's access to VC funding). We, therefore, use the natural logarithm of the project's goal- *Ln(Goal Amount)* as a control variable in our model. We also control for duration of the project (period of time in days in which projects can receive financial support from backers) due to its correlation with the campaign's funding success (or, failure). While Burtch et al. (2013) stated that longer funding durations will lead to greater awareness, more contributors thereby more success, Mollick (2014) showed duration decreases the chances of success as longer durations are a sign of lack of confidence. The final control in this category is the label "Projects We Love". The Kickstarter team often marks a stand-out project as such when it demonstrates a robust and sophisticated project page with a clear

[11] One limitation of using *CEO LinkedIn 500+* as an explanatory variable is that this information was manually collected for each individual CEO/founder at the time of data collection, which have changed over time; meaning the actual number of CEO connections could have been lesser at the time of the campaign, leading to the possibility that the higher number of connections in the later years came as a natural outcome of the earlier crowdfunding success.

description, captivating images or video, a creatively thorough plan for completion and an excited community, thereby garnering the most attention.

Lastly, we control for the industry the project belongs to (industry indicators) and the year it received the money raised from the campaign (year indicators). These time and industry fixed effect controls address the market-wide conditions that could potentially affect funding.

3.3 Main Analysis:

We begin with testing whether or not subsequent VC financing was secured. For this we employ a logistic regression model to analyze how our main explanatory variables- *Ln(Pledged Amount)*, *LinkedIn Page & CEO LinkedIn 500+*, *Ln(No. of Backers)* and *No. of Projects Created in Kickstarter* help explain our dependant variable *Subsequent VC Financing (SubVC)*, which equals 1 if the campaign secured VC funding after its crowdfunding success. The basic structure of our logistic regression model is as follows:

$$\begin{aligned} SubVC(0/1) = {} & \alpha + \beta_1.Ln(Pledged\ Amount) + \beta_2.LinkedIn\ Page + \beta_3.CEOLinkedIn500 \\ & + \beta_4.Ln(No.of\ Backers) + \beta_5.No.of\ Projects\ Created(Kickstarter) \\ & + \sum\nolimits_k \gamma_k.Additional\ Controls + \sum\nolimits_t \delta_t.Year_t + \sum\nolimits_c \varphi_c.Category_c + \varepsilon_t \end{aligned} \quad (1)$$

The variables under the Additional Controls block include *Female_Creator* (0/1), *Natural_Person* (0/1), *No. of Projects Backed (Kickstarter)*, *Ln(Goal Amount)*, *Duration* and *ProjectsWeLove* (0/1). We do not use *No. of all CF projects* simultaneously in the same equation since it is a linear function of the other explanatory variable *No. of Projects Created in Kickstarter*. In other words, the former is the sum of the latter and the number of CF projects created in other platforms, resulting in a correlation coefficient close to 1 (~0.974; see Table 4). Therefore, to avoid multicollinearity we use these two variables separately in Tables 5 to 7.

As explained above, we run the above regression for four (4) other dependent variables to explore how funding from other sources is affected: *SubFin* (0/1), *SubCF* (0/1), *SubKickstarter* (0/1) and *SubFin_notCF* (0/1) which represent funds secured from all sources combined, crowdfunding platforms only, Kickstarter only and all sources other than CF platforms respectively.

Next, we are interested in identifying the potential influence of the abovementioned explanatory variables on the *number* of subsequent VC financing. For this purpose, we employ a Poisson regression model as below:

$$\begin{aligned} \#SubVC = {} & \alpha + \beta_1.Ln(Pledged\ Amount) + \beta_2.LinkedIn\ Page + \beta_3.CEOLinkedIn500 \\ & + \beta_4.Ln(No.of\ Backers) + \beta_5.No.of\ Projects\ Created(Kickstarter) \\ & + \sum\nolimits_k \gamma_k.Additional\ Controls + \sum\nolimits_t \delta_t.Year_t + \sum\nolimits_c \varphi_c.Category_c + \varepsilon_t \end{aligned} \quad (2)$$

The dependent variable *#SubVC* represents the counts of subsequent VC rounds secured by the campaign after its success in Kickstarter. As before, we also further analyse how pledged amount, LinkedIn alliance, number of backers and number of CF projects affect the *number* of subsequent funding rounds from – all sources combined (*#SubFin),* crowdfunding platforms only (*#SubCF*), Kickstarter only (*#SubKickstarter*) and sources other than CF (*#SubFin_notCF*).

Finally we concentrate on the *amount* raised from subsequent rounds of financing and try to examine the changes in it stemmed from our main explanatory variables. For this purpose, we consider the following OLS regression model where the dependent variable *Ln(Amount_SubVC)* is the natural logarithm of the total amount (denominated in US dollars) raised by the entrepreneur from VCs after the initial campaign success:

$$\begin{aligned} Ln(Amount\_SubVC) \\ &= \alpha + \beta_1.Ln(Pledged\ Amount) + \beta_2.LinkedIn\ Page + \beta_3.CEOLinkedIn500 \\ &+ \beta_4.Ln(No.of\ Backers) + \beta_5.No.of\ Projects\ Created(Kickstarter) \\ &+ \sum_k \gamma_k.Additional\ Controls + \sum_t \delta_t.Year_t + \sum_c \varphi_c.Category_c + \varepsilon_t \end{aligned} \quad (3)$$

Apart from the amount raised form VCs, we also examine how total amounts raised from-all types of sources combined, crowdfunding platforms only, Kickstarter only and from sources other than CF are affected given the set of explanatory variables and controls.

4. Empirical Results

We present the multivariate results in Tables 5 to 7 summarizing evidence from the logistic, Poisson and OLS regressions respectively. Column (i) of Table 5 summarizes our results from multivariate logistic regressions for the determinants of *SubVC(0/1)* as in Equation (1). As expected, the coefficients of logged pledged amount are positive (row 1), that is in line with Hypothesis 1 (a), we find statistically significant empirical evidence that higher pledged amounts significantly raise the probability of getting subsequent VC financing (significant at 10% level). More precisely, a 2.72-fold [exp(1)=2.718] rise in logged pledged amount is associated with a 55% increase in the likelihood of securing future VC rounds. Funding from other sources are also found to be significantly affected by the amount pledged. In row (1) we also see higher pledge significantly raises the chances of securing- 1. overall subsequent financing [column (ii); significant at 1% level], 2. funding from CF platforms only (column (iii); significant at 5% level) and 3. from sources other than CF [column (v), significant at 5% level].

In rows 2 and 3, we present results of how the entrepreneur's LinkedIn alliance is related to the project's future fundability. As expected, we find that having well-connected CEOs or founders is statistically positively correlated to securing VC funding afterwards (see variable *CEO LinkedIn 500+* in column (i) of Table 5). Although we find no statistically significant impact for the variable *LinkedIn Page* despite the coefficients showing the expected positive signs as hypothesized under Hypothesis 2(a), we find that the broader networks brought about by CEOs with over 500 connections on LinkedIn greatly impacts

the probability of attracting future VC rounds. In other words, having a CEO or founder with 500+ connections increase the probability of a subsequent VC financing by 112% (significant at a 1% level). Apart from VC rounds, such CEOs/founders significantly increase the probability of the project obtaining funds from all sources combined [column (ii)] as well as funds from non-CF sources [column (iv)].

As proposed under Hypothesis 3(a), we observe a significant and negative relation between the *Ln(no. of backers)* and the *probability* of obtaining future VC rounds [row 4, column (i)], conforming to the notion that VCs assign a lower utility to projects with large crowds. This variable was also found to be negatively impacting (significant at 10% level) the probability of future non-CF rounds as well [column (v)].

For the fourth and final set of hypotheses which links the degree of an entrepreneur's association with crowdfunding with the odds of subsequent VC involvement, we find no statistically significant effect [row 5 & 6, column (i)], meaning we cannot reasonably conclude that higher number of crowdfunding projects translates into lower probability that entrepreneur will seek VC funding in future. Hypothesis 4(a) is thus rejected. However, the results in columns (iii) and (iv) show that the higher the number of CF projects created, the more the entrepreneur is likely to launch subsequent CF campaigns, particularly on Kickstarter- a strongly positive relationship significant at 1% level. Each additional number of successful CF project increases the probability of follow-up CF projects being created by the entrepreneur by 87% [row (5), column (iii)] and that of follow-up Kickstarter projects by 148% [column (iv)]. This finding supports the idea that positive responses from the crowdfunding market increases an entrepreneur's likelihood of becoming a serial crowdfunder (Butticè et al., 2017) and partially support our premise for Hypotheses 4 (a-c) that successfully crowdfunded entrepreneurs do and will continue to use this platform to raise additional financial resources. Although results do not indicate that this pattern will have an effect on future VC involvement.

Before moving on to the next step of our analysis, we check for possible cases of multicollinearity. We calculate the Variance Inflation Factors (VIF) for all the regression scenarios and find that the averages are below the critical value of 5 (Burchard et al. 2020). The maximum is 1.59 and the means range between 1.31 and 1.32. The reliability of the regression outputs, therefore, is not affected by multicollinearity.

--- please insert Table 5 about here ---

Table 6 shows our results for the Poisson regressions presented in Equation (2) focusing on the *number* of subsequent funding rounds from different sources. We find no statistically significant effect of pledged amount on log counts of future VC rounds [row 1, column (i)]. As such, we were unable to accept Hypothesis 1(b) where we hypothesized that larger amount of pledged money is positively associated with higher *number* of future VC funding rounds. However, we found that a rise in pledged amount translates into a statistically significant rise in- 1. the *number* of overall subsequent funding rounds [row (1), column (ii), at 5% level], 2. the *number* of future CF rounds [column (iii), at 10% level] and 3. the *number* of all future rounds other than CF [column (v), at 10% level].

Next, we found that the *number* of subsequent VC rounds is positively affected by better-connected

CEO or founders. Row (3) shows that the difference in the logs of expected counts of future VC rounds is expected to be 1.10 more for projects with CEOs who have 500+ connections in LinkedIn compared to those with CEOs having connections below the benchmark (significant at 1% level)- a finding in agreement with Hypothesis 2(b). Similarly, we also found that CEO's broader connections helped in increasing the firm's overall number of future funding rounds [column (ii), significant at 5% level] as well as the number of rounds other than CF [column (v), significant at 1% level]. Although the variable *LinkedIn Page* wasn't found to be significantly affecting future counts of VC rounds [row (2), column (i)], we found significantly positive relation between the variable and the *number* of future- 1. overall funding rounds [column (2), significant at 5% level]; 2. crowdfunding rounds [column (iii), at 10% level] and 3. Kickstarter rounds [column (iv), significant at 1% level], meaning having a LinkedIn page associated with the campaign has a positive effect on securing future CF rounds, particularly from Kickstarter.

In agreement with Hypothesis 3(b), our results in row (4) show a significant decrease (at 5% level) in the *number* of subsequent VC rounds associated with higher number of backers [column (i)] supporting the notion that VCs' skepticism towards a large backer base negatively affects how many VC rounds the campaign secures. Future counts of non-CF round were also found to be negatively affected by the variable *Ln(No. of Backers)* [column (v)].

We find no statistically significant evidence that higher number of CF projects created will negatively impact the *number* of subsequent VC rounds, as depicted in hypothesis 4(b). Rows (5) and (6) presents the coefficients, however none are statistically significant despite having the expected negative signs. As far as the future number of CF projects are concerned, we find similar results as in Table 5. One additional successful CF project will raise the difference in the logs of expected *number* of subsequent CF projects by 0.15 [row (6), column (iii), significant at 1% level] and that of subsequent Kickstarter projects by 0.14 [row (6), column (iv), at 1% level].

--- please insert Table 6 about here ---

Table 7 shows our results for the OLS regressions presented in Equation (3) focusing on how our independent variables affect *amount* raised from subsequent funding rounds from different sources. We find statistical significance for *Ln(Pledged Amount)* exerting positive impact on amount raised from future VC rounds [column (i); significant at 5% level]. Therefore, we accept Hypothesis 1(c) which stated that larger collected crowdfunding pledges correlate with higher amount of follow-up funding from VCs. *Ln(Pledged Amount)* also shows a positive relation with funding from- 1. all sources combined [column (ii); at 1% level]; 2. crowdfunding platforms [column (iii); at 1% level]; 3. Kickstarter [column (iv); at 1% level] and 4. non-CF sources [column (v); at 10% level].

However, we find little evidence in support of Hypothesis 2(c) as *amounts* subsequently raised from VCs were not found to be significantly correlated to the campaign's LinkedIn presence or the number of connections the founder has in LinkedIn [rows (2) & (3), column (i)]. Likewise, amounts raised from other sources didn't demonstrate any strong link to the variables *LinkedIn* and *CEO LinkedIn 500+*. Due to lack of statistical significance, we reject Hypothesis 3(c) as well backer size didn't demonstrate any significant relation with the amount raised from VCs afterwards.

The results of our OLS regressions provide no support for Hypothesis 4(c) either, meaning higher number of CF projects created have no statistically significant impact on the *amount* raised from subsequent VC rounds [rows (5) & (6), column (i)]. However, we found significantly positive relation between *No. of Projects created (Kickstarter)* and subsequent amount raised from CF platforms particularly Kicksarter (columns (iii) & (iv); at 1% level), indicating successful entrepreneurs take advantage of serial crowdfunding and manage to raise higher amounts from subsequent CF rounds.

--- please insert Table 7 about here ---

A closer look at our additional control variables also reveals some interesting patterns as to how these characteristics affect the firm's future financing. Our results show that probability of obtaining overall subsequent financing (all sources combined) is significantly negatively affected (at 1% level) when the project creator is a natural person(s) [Table 5, row (8), column (ii)]. Follow-on VC financing and crowdfunding probabilities were also found to be decreasing when the campaign was run by individuals instead of a business or organization. One reason could be that, small-scale projects run by one person or a small group of people meet their goals sooner than larger-scale projects that need repeat funding for product enhancement. However, further analyses are necessary to understand the dynamics of this argument.

The results also indicate a strong negative relationship between goal size and future crowdfunding outcomes. We find that a higher goal amount significantly reduces the *number* of subsequent financing rounds from all sources combined (at 1% level). The negative association is even stronger (at 1% level) when it comes to the *number* of future crowdfunding campaigns especially in Kickstarter [Table 6, row (10), columns (iii) and (iv)]. The negative association persists in case of the *probability* of getting future rounds as well. The results of the logit regression in Table 5 show that the higher the goal, the more it reduces the log-odds of having subsequent CF or subsequent Kickstarter rounds (significant at 5% level). One possible explanation of this pattern may lie in the fact that Kickstarter follows an "All-or-Nothing" (AON) financing model. Entrepreneurs that self-select into the AON model do so in order to signal to the crowd that they are committed to only undertake the project if enough capital is raised, which reduces the crowd's risk that undercapitalized projects will be undertaken, as under the "Keep it All" (KIA) model. The AON model, therefore reduces the risk to the crowd, thereby enabling the AON entrepreneurial firms to set higher goals. As a result, these AON campaigns are more likely to achieve their goal, despite the fact that their goals are larger on average (Cumming et al, 2019). Thus they raise more money in each campaign, meaning they are more likely to reach their overall project goal faster in fewer rounds, which translates into lesser need of running future campaigns.

We also find female-led projects to have a significantly negative relationship with subsequent *number* of crowdfunding, particularly Kickstarter, campaigns [Table 6, row (7)]. Similarly the *amount* raised from these campaigns are also negatively affected by the gender of the entrepreneur being female. Table 7, row (7) show a statistically significant decrease of 430,000 USD in raised *amount* from subsequent crowdfunding campaigns for women entrepreneurs compared to male entrepreneurs (at 10% level) and a significant 900,000 USD decrease (at 1% level) in the amounts raised from future Kickstarter campaigns for females. The possible explanation for this subsequent decrease in the *number* and *amount* of follow-on crowdfunding could be a mix of a shift in perception towards female founders and the female entrepreneurs' choice of the crowdfunding platform. Women, in particular, have an advantage

of the gender bias where they are deemed more trustworthy business owners than men[12], particularly among the younger millennial and Gen X generations[13]- a pattern that has translated into the recent finding that campaigns led by women are 32% more successful than those led by men[14]. In addition to this high success rate, female entrepreneurs selecting Kickstarter to run their campaign, hence the AON platform, is a clear signal to the crowd that the entrepreneur commits not to undertake the project if not enough is raised, which reduces the risk to the crowd. Therefore, on a similar note as to our previous argument, this enables them to set higher goals, raise more money, and be more likely to reach their stated goals faster, creating the abovementioned negative relationship.

5. Discussions and Limitations

The purpose of this study is to investigate the factors driving VCs responses to initial crowdfunding success of various Kickstarter campaigns. In spite of running a successful campaign the prospect of lack of VC funding afterwards still remains considerably high. We therefore attempted to identify certain characteristics of successful campaigns that either send investment quality signals to VCs or pose uncertainties. Drawing from the previous works on signaling theory, we show larger public investments (i.e. pledge amount) signal greater public confidence, meaning market-validation is revealed by the amount of money raised in the campaign, translating into significant rise in the *probability* and *amount* of subsequent VC financing. We also find that founders' professional connections (in LinkedIn) factor in the venture's future funding success by enabling the entrepreneur to be discovered and provide additional information to potential investors VC investors for a better evaluation of the quality of their products. In other words, having well-connected CEOs or founders (in LinkedIn) were found to be significantly positively correlated to both the *probability* (of securing) and *number* of subsequent VC rounds. Statistically significant results were found supporting our hypothesis that VCs tend to devalue a large crowd of backers, presumably due to future market loss concerns. Both the *probability* and the *number* of follow-on VC rounds were negatively affected by a high number of backers although no significant link was found between backer size and *amounts* raised from follow-on VC rounds.

We additionally hypothesized that VCs might still accept a large backer base if the addressable market for the product concerned is big enough in the beginning rendering the initial revenue loss as a result of the campaign negligible; and rather be skeptic of a large crowd with low contribution per backer. In Table 8 we present the regression results where the variable *No. of Backers* was replaced by

[12] "…previous research in the venture capital setting has shown that typically investors will invest in men, because they view them to be more competent … But what we found in crowdfunding is that the perception of competence is less important because this is such an early stage in a project; what's more important is whether or not, as a funder, you trust the individual behind it. And women, in particular, have an advantage because the gender bias amongst participants was that women are more trustworthy than men." - Regan Stevenson, assistant professor of management and entrepreneurship, Kelley School of Business, Indiana University, in an interview with Moneyish.
Reference link: https://nypost.com/2018/05/14/why-women-are-more-likely-to-be-funded-on-kickstarter/

[13]According to a recent study (2017) from payroll and HR solutions site Paychex. Reference link: https://www.paychex.com/articles/startup/what-makes-microbusinesses-trustworthy

[14] "Women unbound: Unleashing female entrepreneurial potential": report by PricewaterhouseCoopers (July 2017). Reference link: https://www.pwc.com/gx/en/about/diversity/womenunbound.html.

Backers(Q4)xPledge(Q1) to test whether campaigns with the number of backers at the highest 25th percentile and pledges at the lowest 25th percentile affect the VCs decision to partner with the campaign. We find no significant effect of our interaction variable on the *probability* and *number* of subsequent VC funding rounds (Models 1 and 2). However, results of the OLS regression show a positive association between campaigns with large number of backers but low pledges and the subsequent *amount* raised from VCs (significant at 5% level). The VIFs are below the critical threshold and show no sign of multicollinearity.

--- please insert Table 8 about here ---

Switching our focus on to the founder's incentive to look for VC funding we show that, serial creators with back-to-back crowdfunding success are more likely to gain self-confidence about their execution ability. We show that higher number of prior successful campaigns translates into higher *probability*, *number* and size of subsequent crowdfunding rounds. However this strong association was not found to be negatively affecting the degree of future VC involvement, as initially hypothesized, so we cannot reasonably conclude that higher CF success renders coaching by VC less attractive to entrepreneurs.

This study also sheds light on the broader picture of the firm's future funding trajectory. Pledged amount was not only found to be boosting the *probability* of obtaining subsequent VC funding, but also funding from all types of sources combined (e.g. crowdfunding, seed funds, angel investors, venture capitalists, equity crowdfunding, debt financing and others). The *number* and *amount* raised from all these sources were also found to be significantly positively associated with high pledges. As expected, the results also show that higher the pledge, higher the number of subsequent crowdfunding rounds and the amount raised through them, meaning successful entrepreneurs capitalizing on their initial campaign successes.

Consistent with previous research, similar positive results were found for CEOs' social alliance. *Probability* of the firm's subsequent funding rounds from all sources combined was found to experience a 64% rise [Table 5, column (ii)] thanks to the presence of a CEO with 500+ connections in LinkedIn. Similarly, we also found that CEO's broader connections helped in increasing the firm's overall *number* of future funding rounds. *Number* of funding rounds from non-crowdfunding sources also rise with having CEOs who have 500+ connections in LinkedIn compared to those with CEOs having fewer connections. Number of backers was found to be negatively affecting the *probability* and *number* of obtaining future non-CF rounds whereas high number of prior successful campaigns was found to be significantly raising the *probability*, *number* and *amount* of subsequent CF (particularly Kickstarter) rounds. Both these findings complement each other by allowing us to conclude that successful entrepreneurs do go back to the crowd for their future financial needs.

There are some limitations in our study, which may, however, offer opportunities for future research. Perhaps the most important limitation stems from the fact that we used manual searches to track VC funding histories of sample firms. In addition to browsing numerous news articles, company websites and investors' blog-posts pertaining to the project, company or entrepreneur(s) in question, we also utilized *Crunchbase*, a site that stores information on start-up activity and tracks risk financing within and across countries, including the number of investors involved and the type (e.g., VC, business angel, private equity, etc.). Full access for academic research on this platform is conditional on applying for a

license, which limited our information on subsequent VC funding rounds that we extracted from the site. Gaining complete access would have made more funding data available and allowed us to create a richer dataset for this study.

Another limitation is that this study is based on the sample from one single crowdfunding platform, Kickstarter, and utilizes the campaigns raising at least five hundred thousand (500,000) US dollars in the fields of design, games and technology. We know that many crowdfunding platforms (Indiegogo, Crowdfunder UK, RocketHub etc.) have different features that might affect the campaign coverage, the amount raised, and even its success or failure. Additional studies with crowdfunding projects collected from multiple reward-based platforms should hence be done to test the robustness of our results across platforms. Beyond reward-based platforms, crowdfunding has also expanded into many different directions in the past decade, including peer-to-peer lending, real estate, donation and equity-crowdfunding platforms. Of course, each of these platforms have their own unique features which could bring additional insights. This presents an interesting opportunity for future research.

Another possible extension of this study could be incorporating the geographic effects on VC funding since, among a variety of factors, proximity to funders has been strongly linked to receiving venture capital funding (Agrawal et al., 2011; Chen et al., 2010; Stuart and Sorenson, 2003a) due to the need of investors to monitor their investments. Therefore, introducing the big city clustering effect as a control alongside industry fixed effects may shed some light on how the geographic region (state) of the start-up under analysis affect its VC funding success.

Not all successful crowdfunding leads to the successful development and delivery of goods and services. Crowdfunded projects are at risk of delays, or even failure if initial resource endowments prove to be inadequate. Overfunded projects are even more vulnerable to delay, likely due to the increased complexity and expectations associated with large projects (Mollick 2014). Colombo & Shafi (2016) showed that, non-VC backed firms that show delay in delivering their product are less likely to receive initial external financing unless there is positive crowd feedback. As delays are common, it would be interesting to include the degree of delay as an additional control to investigate its effect on the firm's future fundability.

Lastly, as we have shown, raising more money with more backers from crowdfunding can sometimes adversely affect access to VC financing, an interesting future research question could be how to design campaigns to produce the most desirable outcomes for the entrepreneur.

6. Conclusion

For start-ups, a successful campaign could generate significant opportunities to access additional funding resources. This paper contributes to advancing our understanding of how a successful Kickstarter campaign may determine a start-up's follow-on fundraising performance, with a special focus on future VC financing. A 1% increase in the annual number of Kickstarter campaigns in one year leads to a 0.097% increase in the annual number of VC investments in the following year, a 0.092% increase in the subsequent year, and about a 0.067% increase in the third year (Sorenson et al., 2016). No doubt, successful campaigns do address the attention of VCs, that is, where the crowd provides

signals through aggregated investments, the VC market responds. However a successful campaign does not necessarily guarantee the support of VCs and it is vital to explore factors that have a considerable impact on their investment decisions. We draw a picture of a financing eco-system where not only VCs pay a great deal of attention to the venture quality and level of uncertainty that the firms provide but also the entrepreneurs' incentive to seek VC funding plays a key role. Our findings offer important implications for crowdfunding entrepreneurs seeking future endorsements from VCs. The results indicate that setting the right target that maximizes pledge is crucial and maintaining a robust network on LinkedIn is interpreted as a strong quality signal. Since a large backer base was found to be negatively impacting the chances and number of future VC involvement, designing an efficient reward structure to encourage higher contribution per backer might prove to be beneficial. We believe, however, that the list of the hypotheses used for this study is not exhaustive and future research can contribute to our understanding of the interconnection between these two markets.

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Table 1: Sample Selection

This table shows the campaign categories, as well as the number of campaigns and amounts raised in USD (Vol. in millions) for each respective year between 2010 and 2017 (panel A). Panel B shows the distribution of campaigns across different countries.

Panel A

Business Category	2010	Vol.	2011	Vol.	2012	Vol.	2013	Vol.	2014	Vol.	2015	Vol.	2016	Vol.	2017	Vol.	Total	Total
3D Printing	0	-	0	-	0	-	2	2.07	5	7.77	2	3.55	3	2.78	3	3.55	**15**	**19.72**
Architecture	0	-	0	-	0	-	0	-	0	-	0	-	1	0.68	1	0.51	**2**	**1.19**
Camera Equipment	0	-	0	-	1	0.55	0	-	2	2.68	4	2.83	4	2.72	5	6.81	**16**	**15.59**
Design	0	-	0	-	0	-	3	2.20	1	0.75	3	3.15	0	-	3	3.16	**10**	**9.26**
DIY Electronics	0	-	0	-	2	1.12	2	1.21	2	1.25	0	-	2	1.39	0	-	**8**	**4.97**
Fabrication Tools	0	-	0	-	0	-	0	-	1	0.63	2	1.70	2	2.41	2	2.01	**7**	**6.75**
Flight	0	-	0	-	0	-	0	-	2	2.16	1	0.88	0	-	0	-	**3**	**3.04**
Gadgets	0	-	0	-	0	-	1	0.50	1	0.65	9	8.72	11	8.38	8	8.20	**30**	**26.45**
Games	0	-	0	-	1	0.73	1	0.56	0	-	0	-	0	-	0	-	**2**	**1.29**
Gaming Hardware	0	-	0	-	2	11.03	1	1.11	0	-	0	-	1	0.50	0	-	**4**	**12.64**
Graphic Design	0	-	0	-	0	-	1	0.59	1	0.80	0	-	0	-	0	-	**2**	**1.39**
Hardware	0	-	1	0.83	2	1.41	11	10.30	15	12.95	9	9.79	11	12.56	3	2.08	**52**	**49.93**
Playing Cards	0	-	0	-	0	-	0	-	0	-	0	-	0	-	1	0.63	**1**	**0.63**
Product Design	1	0.94	0	-	9	16.72	12	11.33	12	23.83	28	39.75	46	46.23	25	30.21	**133**	**169.02**
Robots	0	-	0	-	0	-	0	-	0	-	4	3.41	0	-	1	1.15	**5**	**4.56**
Software	0	-	0	-	0	-	1	0.75	0	-	0	-	1	1.08	0	-	**2**	**1.83**
Sound	0	-	0	-	0	-	0	-	2	6.90	1	0.81	7	10.03	2	3.42	**12**	**21.17**
Space Exploration	0	-	0	-	0	-	1	1.51	1	1.05	2	1.96	0	-	0	-	**4**	**4.52**
Tabletop Games	0	-	0	-	4	5.65	10	11.64	2	1.82	11	20.52	20	25.87	11	12.06	**58**	**77.57**
Technology	0	-	0	-	5	6.54	4	3.19	4	5.05	11	13.46	9	11.46	2	1.37	**35**	**41.07**
Video Games	0	-	0	-	20	27.16	19	26.04	4	3.97	11	22.36	4	3.84	3	4.76	**61**	**88.12**
Wearables	0	-	0	-	0	-	0	-	2	1.47	5	5.66	9	9.84	4	8.09	**20**	**25.07**
Web	0	-	0	-	0	-	0	-	1	5.41	0	-	0	-	0	-	**1**	**5.41**
Total	**1**	**0.94**	**1**	**0.83**	**46**	**70.92**	**69**	**73.00**	**58**	**77,00**	**103**	**138.58**	**131**	**139.77**	**74**	**88.02**	**483**	**591.23**

Panel B

Country	2010	2011	2012	2013	2014	2015	2016	2017	Total
Australia	0	0	1	1	2	2	7	2	**15**
Belgium	0	0	0	1	0	1	0	0	**2**
Bulgaria	0	0	0	0	0	1	0	0	**1**
Canada	0	0	1	3	1	3	7	2	**17**
China	0	0	0	0	1	2	3	2	**8**
Czech Republic	0	0	0	0	1	0	0	0	**1**
Denmark	0	0	0	0	0	0	0	1	**1**
France	0	0	0	1	1	2	1	2	**7**
Germany	0	0	0	1	1	1	4	2	**9**
Hong Kong	0	0	0	0	0	0	0	1	**1**
Israel	0	0	0	0	1	1	1	2	**5**
Italy	0	0	0	0	0	2	1	0	**3**
Japan	0	0	0	2	1	4	1	0	**8**
Luxembourg	0	0	0	0	0	1	0	0	**1**
Netherlands	0	0	0	0	0	0	1	0	**1**
New Zealand	0	0	1	0	0	0	0	1	**2**
Norway	0	0	0	1	0	0	1	0	**2**
Poland	0	0	0	0	0	0	1	0	**1**
Russia	0	0	0	1	0	0	0	1	**2**
Slovenia	0	0	0	0	0	0	2	0	**2**
Spain	0	0	0	0	0	0	1	0	**1**
Sweden	0	0	1	0	1	2	2	0	**6**
Switzerland	0	0	0	0	0	1	2	2	**5**
Taiwan	0	0	0	1	0	0	0	1	**2**
United Kingdom	0	0	4	4	2	7	5	5	**27**
United Arab Emirates	0	0	1	0	0	0	0	0	**1**
United States	1	1	37	53	46	73	91	50	**352**
Total	**1**	**1**	**46**	**69**	**58**	**103**	**131**	**74**	**483**

Table 2: Variable Descriptions

This table gives a detailed description of all the dependent and main explanatory variables along with the additional controls used in our analysis.

Variable name	Description
	Dependent Variables
SubVC (0/1)	Dummy variable indicating whether a campaign secured VC funding after its crowdfunding success that equals 1 if a VC round is recorded for a campaign, and 0 otherwise.
SubFin (0/1)	Dummy variable indicating whether a campaign secured financing of any kind (e.g. crowdfunding, VC, angel, seed, equity crowdfunding, debt etc.) after its crowdfunding success that equals 1 if a financing round is recorded for a campaign, and 0 otherwise.
SubCF (0/1)	Dummy variable indicating whether a campaign raised funds from a crowdfunding platform post its crowdfunding success that equals 1 if a CF round is recorded for a campaign, and 0 otherwise.
SubKickstarter (0/1)	Dummy variable indicating whether a campaign raised funds from Kickstarter post its initial crowdfunding success that equals 1 if a Kickstarter round is recorded for a campaign, and 0 otherwise.
SubFin_notCF (0/1)	Dummy variable indicating whether a campaign raised funds from a source other than a crowdfunding platform post its crowdfunding success that equals 1 if such a non-CF round is recorded for a campaign, and 0 otherwise.
#SubVC	Total number of VC rounds secured by the campaign after its crowdfunding success.
#SubFin	Total number of financing rounds secured by the campaign from all types of sources (e.g. crowdfunding, VC, angel, seed, equity crowdfunding, debt etc.) after its crowdfunding success.
#SubCF	Total number of subsequent crowdfunding campaigns successfully conducted by the campaign creators after their crowdfunding success.
#SubKickstarter	Total number of subsequent Kickstarter campaigns successfully conducted by the campaign creators after their crowdfunding success.
#SubFin_notCF	Total number of subsequent financing rounds the campaign secured from all sources other than from a crowdfunding platform after the initial success.

Ln(Amount_SubVC)	Natural logarithm of the total amount raised from subsequent VC rounds. For rounds in other currencies, the USD equivalent is calculated based on the exchange rate on the day the round was secured.
Ln(Amount_SubFin)	Natural logarithm of the total amount of subsequent financing received from all types of sources (e.g. crowdfunding, VC, angel, seed, equity crowdfunding, debt etc.) after the crowdfunding success. For amounts in other currencies, the USD equivalent is calculated based on the exchange rate on the day the amount was raised.
Ln(Amount_SubCF)	Natural logarithm of the total amount raised from subsequent crowdfunding campaigns after the initial campaign success. For campaigns with amounts in other currencies, the USD equivalent is calculated based on the exchange rate on the day the campaign successfully ended.
Ln(Amount_SubKickstarter)	Natural logarithm of the total amount raised from subsequent Kickstarter campaigns after the initial campaign success. For campaigns with amounts in other currencies, the USD equivalent is calculated based on the exchange rate on the day the campaign successfully ended.
Ln(Amount_SubFin_notCF)	Natural logarithm of the total amount raised from all subsequent financing rounds except from a crowdfunding platform. For rounds with amounts in other currencies, the USD equivalent is calculated based on the exchange rate on the day the funding was raised.
	Independent Variables
Ln(Pledged Amount)	Natural logarithm of the total amount raised (in USD) by the campaign. For campaigns with amounts in other currencies, the USD equivalent is calculated based on the annual average exchange rate (corresponding to the year the campaign was launched).
LinkedIn Page	Dummy variable that equals 1 if a link to a LinkedIn page associated with the campaign or that of the creator(s) is provided, and 0 otherwise.
CEOLinkedIn500+	Dummy variable that equals 1 if the campaign CEO or founder (if no CEO is mentioned) has 500 or more contacts on LinkedIn, and 0 otherwise.
Ln(No. of Backers)	Natural logarithm of the total number of backers of the crowdfunding project.
Backers(Q4)xPledge(Q1)	Dummy variable that equals 1 if a campaign has the number of backers in the highest 25th percentile and the pledged amount in the lowest 25th percentile, and 0 otherwise.
No. of Projects Created (Kickstarter)	Total number of Kickstarter projects created by the creator since joining the portal.
No. of all CF Projects	Total number of crowdfunding projects created by the creator in all CF platforms including Kickstarter.

	Additional Controls
Female Creator	Dummy variable that equals 1 if the project creator(s) is a female, and 0 otherwise.
Natural Person	Dummy variable that equals 1 if the project creator is one/more than one natural person(s), and 0 otherwise.
No. of Projects Backed (Kickstarter)	Total number of Kickstarter projects backed by the creator since joining the portal.
Ln(Goal Amount)	Natural logarithm of the funding goal (in USD) set by the creator of the project before the start date of the campaign. For campaigns with amounts in other currencies, the USD equivalent is calculated based on the annual average exchange rate (corresponding to the year the campaign was launched).
Duration	Number of days between the campaign's end date and start date.
Projects We Love	Dummy variable that equals 1 if the project is marked as "Project We Love" in Kickstarter, and 0 otherwise.

Table 3: Summary Statistics

This table gives descriptive statistics (mean, standard deviation, min, and max) for the full sample (483 campaigns) shown in Table 1. All variables shown in this table are considered in subsequent analyses for testing our hypotheses, except for the variables concerning the amount raised from various sources (variables *11* to *15*) (see Table 2 for variable descriptions) whose natural logarithms are used in our regressions. Similarly the statistics for Pledged Amount (USD) and Goal Amount (USD) are also reported using their nominal values instead of their log values.

Variable	#Obs.	Mean	Std. Dev.	Min.	Max.
		Dependent Variables			
(1) SubVC (0/1)	483	0.13	0.34	0	1
(2) SubFin (0/1)	483	0.54	0.50	0	1
(3) SubCF (0/1)	483	0.43	0.50	0	1
(4) SubKickstarter(0/1)	483	0.28	0.45	0	1
(5) SubFin_notCF(0/1)	483	0.16	0.37	0	1
(6) #SubVC	483	0.17	0.47	0	3
(7) #SubFin	483	1.11	2.21	0	28
(8) #SubCF	483	0.90	2.16	0	27
(9) #SubKickstarter	483	0.68	2.11	0	27
(10) #SubFin_notCF	483	0.21	0.52	0	3
(11) Amount_SubVC	483	1,859,920	7,750,019.58	0	91,000,000
(12) Amount_SubFin	483	7,064,186	86,255,584.25	0	1,880,717,867
(13) Amount_SubCF	483	854,172	2,792,630.51	0	37,449,489
(14) Amount_ SubKickstarter	483	541,311	2,611,793.24	0	37,449,489
(15) Amount_SubFin_notCF	483	6,210,014	86,174,904.81	0	1,880,000,000
		Main Explanatory Variables			
(16) Pledged Amount	483	1,224,069.56	1,290,033.30	500,784	13,285226
(17) LinkedIn Page	483	0.76	0.43	0	1
(18) CEOLinkedIn500+	330	0.75	0.43	0	1
(19) No. of Backers	483	10,573.09	17,424.68	211	219,382
(20) No. of Projects Created (Kickstarter)	483	2.19	2.81	0	28
(21) No. of all CF Projects	483	1.40	2.75	0	27

Table 3: Summary Statistics (Cont'd)

Variable	#Obs.	Mean	Std. Dev.	Min.	Max.
		Additional Control Variables			
(22) Female Creator	395	0.11	0.31	0	1
(23) Natural Person	483	0.18	0.38	0	1
(24) No. of Projects Backed (Kickstarter)	483	21.28	43.09	0	328
(25) Goal Amount	483	160,446.87	254,072.76	5,000	2,004,811.55
(26) Duration	483	37.18	9.65	16	60
(27) Projects We Love	483	0.64	0.48	0	1

Table 4: Correlation Matrix

This table shows the Pearson correlation coefficients for the main explanatory variables and the additional controls. All of the following variables are considered in subsequent analyses for testing our hypotheses (see Table 2 for variable descriptions) except for Pledged Amount (USD) and Goal Amount (USD) whose natural logarithms are used in our regressions. ***, ** and * indicate statistical significance at least at a 1%, 5% and 10% level respectively.

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
(1) Pledged Amount	1											
(2) LinkedIn Page	0.07	1										
(3) CEOLinkedIn500	0.04	0.57***	1									
(4) No. of Backers	0.68***	0.04	0.00	1								
(5) No. of Projects Created (Kickstarter)	-0.05	-0.02	-0.05	0.01	1							
(6) No. of all CF Projects	-0.05	-0.02	-0.04	-0.01	0.97***	1						
(7) Female Creator	-0.12***	0.06	0.02	-0.04	-0.09*	-0.09*	1					
(8) Natural Person	0.06	-0.01	0.01	0.09**	0.11**	0.09**	-0.23***	1				
(9) No. of Projects Backed (Kickstarter)	0.15***	0.06	0.08*	0.27***	0.40***	0.38***	-0.02	0.21***	1			
(10) Goal Amount	0.07	0.03	0.04	0.10**	-0.08*	-0.10**	0.00	-0.09*	-0.03	1		
(11) Duration	0.04	-0.01	0.07	-0.06	-0.07	-0.03	0.00	-0.02	-0.02	-0.11**	1	
(12) Projects We Love	0.09**	0.18***	0.07	0.13***	0.05	0.00	-0.10**	0.00	0.08*	0.11**	-0.19***	1

Table 5: Multivariate Analysis of factors affecting the *probability* of subsequent financing

In this table, we apply logistic regressions to analyze how the factors surrounding a successful Kickstarter campaign affect subsequent funding, particularly future VC investments. The dependent variables for models (i), (ii), (iii), (iv) and (v) are *SubVC*, *SubFin*, *SubCF*, *SubKickstarter* and *SubFin_notCF* respectively, all of which equal 1 if funding from the respective source was obtained, and 0 otherwise. Under each model, two sets of results are reported since variables (5) and (6) were used separately to avoid multicollinearity. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(i)		(ii)		(iii)		(iv)		(v)	
Main Explanatory Variables										
(1) Ln(Pledged Amount)	0.55*	0.54*	0.58***	0.66***	0.48**	0.58**	0.20	0.11	0.66**	0.66**
	(0.33)	(0.33)	(0.22)	(0.25)	(0.23)	(0.28)	(0.29)	(0.31)	(0.31)	(0.31)
(2) LinkedIn Page	0.64	0.62	0.04	-0.03	0.05	-0.04	0.43	0.28	0.70	0.70
	(0.71)	(0.71)	(0.30)	(0.34)	(0.32)	(0.38)	(0.46)	(0.47)	(0.62)	(0.62)
(3) CEOLinkedIn500+	1.12***	1.12***	0.64**	0.72**	0.16	0.15	0.20	0.07	1.08***	1.08***
	(0.40)	(0.40)	(0.26)	(0.28)	(0.27)	(0.32)	(0.35)	(0.37)	(0.36)	(0.36)
(4) Ln(No. of Backers)	-0.35*	-0.35*	-0.16	-0.21	-0.12	-0.17	-0.02	-0.03	-0.32*	-0.32*
	(0.19)	(0.19)	(0.13)	(0.15)	(0.13)	(0.16)	(0.17)	(0.18)	(0.18)	(0.18)
(5) No. of Projects Created (Kickstarter)	0.05		0.70***		0.87***		1.48***		0.07	
	(0.07)		(0.12)		(0.13)		(0.18)		(0.06)	
(6) No. of all CF Projects		0.03		1.31***		1.81***		1.44***		0.07
		(0.07)		(0.15)		(0.19)		(0.16)		(0.06)
Additional Controls										
(7) Female Creator	-0.37	-0.38	-0.09	-0.08	0.18	0.30	-0.37	-0.60	-0.32	-0.33
	(0.40)	(0.40)	(0.28)	(0.30)	(0.28)	(0.34)	(0.39)	(0.40)	(0.37)	(0.37)
(8) Natural Person	-1.12*	-1.13*	-0.90***	-1.00***	-0.61*	-0.67*	-0.87**	-0.71	-0.86	-0.86
	(0.61)	(0.61)	(0.31)	(0.35)	(0.32)	(0.38)	(0.43)	(0.45)	(0.55)	(0.55)
(9) No. of Projects Backed (Kickstarter)	0.00	0.00	0.00	-0.01**	-0.01	-0.02***	-0.01*	-0.01*	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
(10) Ln(Goal Amount)	0.29*	0.28*	-0.08	0.07	-0.23**	-0.07	-0.38**	-0.36**	0.42***	0.43***
	(0.16)	(0.16)	(0.10)	(0.11)	(0.11)	(0.13)	(0.15)	(0.16)	(0.16)	(0.16)
(11) Duration	-0.01	-0.01	0.01	0.01	0.00	0.00	-0.01	-0.01	0.00	0.00
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
(12) Projects We Love	0.42	0.43	-0.02	0.23	-0.24	0.03	0.12	0.66*	0.39	0.41
	(0.37)	(0.37)	(0.24)	(0.27)	(0.24)	(0.29)	(0.34)	(0.37)	(0.35)	(0.35)
(13) Constant	-13.31***	-13.05***	-7.68***	-10.07***	-4.53	-7.54**	-3.45	-1.68	-17.41***	-17.44***
	(4.39)	(4.34)	(2.76)	(3.04)	(2.82)	(3.39)	(3.63)	(3.78)	(4.25)	(4.23)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	480	480	480	480	480	480	480	480	480	480
Pseudo R^2	0.23	0.23	0.16	0.29	0.20	0.40	0.43	0.48	0.25	0.25
Variance Inflation Factors (mean)	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31
Variance Inflation Factors (max)	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59

Table 6: Multivariate Analysis of factors affecting the *number* of subsequent financing

In this table, we apply Poisson regressions to analyze how the factors surrounding a successful Kickstarter campaign affect the number subsequent funding, particularly that of future VC investments. The dependent variables for models (i), (ii), (iii), (iv) and (v) are *#SubVC*, *#SubFin*, *#SubCF*, *#SubKickstarter* and *#SubFin_notCF* respectively. Under each model, two sets of results are reported since variables (5) and (6) were used separately to avoid multicollinearity. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(i)		(ii)		(iii)		(iv)		(v)	
Main Explanatory Variables										
(1) Ln(Pledged Amount)	0.34	0.34	0.23**	0.25**	0.19*	0.22*	-0.02	-0.01	0.39*	0.39*
	(0.23)	(0.23)	(0.10)	(0.10)	(0.11)	(0.11)	(0.13)	(0.14)	(0.21)	(0.21)
(2) LinkedIn Page	0.66	0.67	0.29**	0.31**	0.30*	0.32**	0.58***	0.58***	0.68	0.68
	(0.67)	(0.67)	(0.15)	(0.15)	(0.15)	(0.16)	(0.19)	(0.19)	(0.58)	(0.58)
(3) CEOLinkedIn500+	1.10***	1.10***	0.23**	0.23**	0.03	0.03	-0.04	-0.04	1.01***	1.01***
	(0.35)	(0.35)	(0.11)	(0.11)	(0.13)	(0.13)	(0.15)	(0.15)	(0.31)	(0.31)
(4) Ln(No. of Backers)	-0.30**	-0.30**	-0.11*	-0.10	-0.10	-0.09	-0.02	-0.01	-0.24**	-0.24*
	(0.13)	(0.13)	(0.06)	(0.06)	(0.07)	(0.07)	(0.08)	(0.08)	(0.12)	(0.12)
(5) No. of Projects Created (Kickstarter)	-0.02		0.14***		0.15***		0.14***		0.00	
	(0.07)		(0.01)		(0.01)		(0.01)		(0.06)	
(6) No. of all CF Projects		-0.04		0.15***		0.16***		0.15***		0.00
		(0.07)		(0.01)		(0.01)		(0.01)		(0.06)
Additional Controls										
(7) Female Creator	-0.46	-0.47	-0.21*	-0.23*	-0.21	-0.24*	-0.52***	-0.57***	-0.33	-0.33
	(0.29)	(0.29)	(0.12)	(0.12)	(0.14)	(0.14)	(0.18)	(0.18)	(0.26)	(0.26)
(8) Natural Person	-1.27**	-1.28**	-0.41***	-0.39***	-0.30**	-0.29**	-0.30*	-0.29*	-0.98**	-0.98**
	(0.55)	(0.55)	(0.13)	(0.13)	(0.14)	(0.14)	(0.16)	(0.16)	(0.49)	(0.49)
(9) No. of Projects Backed (Kickstarter)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(10) Ln(Goal Amount)	0.11	0.09	-0.14***	-0.11**	-0.27***	-0.24***	-0.35***	-0.33***	0.21*	0.22*
	(0.12)	(0.12)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)	(0.07)	(0.11)	(0.11)
(11) Duration	0.00	0.00	0.01*	0.01	0.01**	0.01*	0.01	0.01	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
(12) Projects We Love	0.31	0.30	-0.12	0.09	-0.25**	-0.21*	0.13	0.11	0.33	0.33
	(0.29)	(0.29)	(0.11)	(0.11)	(0.12)	(0.12)	(0.15)	(0.15)	(0.26)	(0.26)
(13) Constant	-17.15	-16.95	-0.51	-0.93	1.39	0.80	3.96**	3.63**	-20.77	-20.79
	(817.98)	(817.49)	(1.31)	(1.32)	(1.45)	(1.46)	(1.73)	(1.74)	(1432.42)	(1432.37)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	482	482	482	482	482	482	482	482	482	482
Pseudo R^2	0.23	0.23	0.33	0.35	0.37	0.40	0.49	0.50	0.24	0.24
Variance Inflation Factors (mean)	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31
Variance Inflation Factors (max)	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59

Table 7: Multivariate Analysis of factors affecting the *amount* of subsequent financing

In this table, we apply OLS regressions to analyze how the factors surrounding a successful Kickstarter campaign affect the amount raised from subsequent funding(in millions). The dependent variables for models (i), (ii), (iii), (iv) and (v) are *Ln(Amount_SubVC)*, *Ln(Amount_SubFin)*, *Ln(Amount_SubCF)*, *Ln(Amount_SubKickstarter)* and *Ln(Amount_SubFin_notCF)* respectively. Under each model, two sets of results are reported since variables (5) and (6) were used separately to avoid multicollinearity. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(i)		(ii)		(iii)		(iv)		(v)	
Main Explanatory Variables										
(1) Ln(Pledged Amount)	0.86**	0.83**	0.94***	0.93***	0.97***	0.97***	0.72***	0.70***	0.69*	0.66*
	(0.32)	(0.32)	(0.20)	(0.20)	(0.18)	(0.18)	(0.23)	(0.23)	(0.37)	(0.38)
(2) LinkedIn Page	0.64	0.55	0.15	0.15	-0.02	-0.03	-0.03	-0.02	0.53	0.47
	(0.95)	(0.95)	(0.30)	(0.30)	(0.26)	(0.26)	(0.35)	(0.35)	(1.23)	(1.23)
(3) CEOLinkedIn500+	0.56	0.54	0.17	0.17	-0.14	-0.14	-0.17	-0.18	-0.12	-0.15
	(0.47)	(0.47)	(0.24)	(0.24)	(0.22)	(0.22)	(0.26)	(0.27)	(0.57)	(0.57)
(4) Ln(No. of Backers)	0.19	0.18	-0.15	-0.15	-0.12	-0.12	0.00	0.00	0.15	0.16
	(0.20)	(0.20)	(0.12)	(0.12)	(0.11)	(0.11)	(0.13)	(0.13)	(0.25)	(0.25)
(5) No. of Projects Created (Kickstarter)	0.06		0.05		0.06**		0.09***		0.09	
	(0.06)		(0.03)		(0.03)		(0.03)		(0.07)	
(6) No. of all CF Projects		0.05		0.04		0.08***		0.08***		0.08
		(0.06)		(0.03)		(0.03)		(0.03)		(0.07)
Additional Controls										
(7) Female Creator	-0.17	-0.21	-0.21	-0.22	-0.43*	-0.43**	-0.90***	-0.91***	0.40	0.36
	(0.38)	(0.38)	(0.24)	(0.24)	(0.23)	(0.22)	(0.30)	(0.30)	(0.46)	(0.45)
(8) Natural Person	0.47	0.42	-0.53*	-0.52*	-0.19	-0.18	-0.44	-0.43	-0.26	-0.33
	(0.80)	(0.80)	(0.29)	(0.29)	(0.24)	(0.24)	(0.31)	(0.31)	(0.86)	(0.86)
(9) No. of Projects Backed (Kickstarter)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
(10) Ln(Goal Amount)	0.09	0.09	0.22**	0.22**	-0.02	-0.01	0.02	0.02	0.36	0.38
	(0.19)	(0.20)	(0.10)	(0.10)	(0.09)	(0.09)	(0.11)	(0.11)	(0.24)	(0.24)
(11) Duration	-0.03	-0.02	0.00	0.00	0.02*	0.02*	0.01	0.00	-0.04*	-0.03*
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
(12) Projects We Love	0.04	0.08	0.05	0.07	-0.19	-0.16	-0.29	-0.25	0.18	0.22
	(0.46)	(0.46)	(0.23)	(0.23)	(0.20)	(0.20)	(0.27)	(0.27)	(0.51)	(0.51)
(13) Constant	0.36	1.07	0.46	0.62	1.82	1.68	4.44	4.70	0.95	1.61
	(4.58)	(4.52)	(2.85)	(2.84)	(2.51)	(2.48)	(3.10)	(3.11)	(5.11)	(4.99)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	65	65	259	259	208	208	139	139	78	78
Adjusted R^2	0.22	0.21	0.17	0.17	0.18	0.19	0.28	0.27	0.06	0.06
Variance Inflation Factors (mean)	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31	1.32	1.31
Variance Inflation Factors (max)	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59

Table 8: Multivariate Analysis of factors affecting the *probability, number* and a*mount* of subsequent VC financing

In this table, we apply logistic, Poisson and OLS regressions in Models 1, 2 and 3 respectively to analyze how the factors surrounding a successful Kickstarter campaign affect subsequent VC investments. We replace the variable *No. of Backers* with *Backers(Q4)xPledge(Q1)* to capture the effect of a high-backer-low-pledge campaign on the VCs' decisions. The dependent variables for models 1, 2 and 3 are *SubVC*, # *SubVC* and *Ln(Amount_SubVC)* respectively. *SubVC* equals 1 if funding from the VCs was obtained, and 0 otherwise. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3
	Main Explanatory Variables		
(1) Ln(Pledged Amount)	0.23	0.08	0.95***
	(0.28)	(0.20)	(0.30)
(2) LinkedIn Page	0.61	0.66	0.49
	(0.71)	(0.67)	(0.90)
(3) CEOLinkedIn500+	1.08***	1.07***	0.36
	(0.40)	(0.34)	(0.46)
(4) Backers(Q4)xPledge(Q1)	0.29	-0.16	3.21**
	(1.17)	(1.06)	(1.47)
(5) No. of all CF Projects	0.04	-0.03	0.04
	(0.07)	(0.07)	(0.05)
	Additional Controls		
(6) Female Creator	-0.41	-0.49*	-0.34
	(0.39)	(0.29)	(0.37)
(7) Natural Person	-1.11*	-1.27**	-0.50
	(0.60)	(0.55)	(0.82)
(8) No. of Projects Backed (Kickstarter)	-0.001	0.00	-0.01
	(0.01)	(0.00)	(0.01)
(9) Ln(Goal Amount)	0.29*	0.07	0.11
	(0.16)	(0.12)	(0.18)
(10) Duration	-0.01	-0.004	-0.02
	(0.02)	(0.01)	(0.02)
(11) Projects We Love	0.50	0.38	-0.37
	(0.37)	(0.29)	(0.46)
(12) Constant	-11.56***	-15.82	0.97
	(4.28)	(810.63)	(4.34)
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	480	482	65
Pseudo R^2	0.22	0.22	0.48
VIF (mean)	1.22	1.22	1.22
VIF (max)	1.54	1.54	1.54