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A Research Note on Entrepreneurs' Financial Commitment and Crowdfunding Success

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A Research Note on Entrepreneurs' Financial Commitment and Crowdfunding Success^{*,#}

Jonas Löher^{a,b}, Stefan Schneck^a, Arndt Werner^c

Abstract

Established early stage investors decide to invest in new ventures after evaluating the propensity of success and the risk of failure. Consequently, it is of considerable importance that the new business owners have substantial 'skin in the game' and are thus highly committed to business success. Despite its key role in practice, the entrepreneurs' own financial commitment has not yet been discussed in a crowdfunding context. Applying a signaling approach, our empirical findings show that entrepreneurs with comparatively more ex ante financial commitment in their project achieve significantly higher funding success. Moreover, our results suggest that financial commitment is the single most important variable determining funding success.

Keywords: equity crowdfunding, crowdfunding, campaign success, financial commitment, signaling, entrepreneurial finance

JEL codes: G11, G19, G21, M13

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'There's a difference between interest and commitment. When you're interested in something, you do it only when it's convenient. When you're committed to something, you accept no excuses; only results.'

Kenneth H. Blanchard

1. Introduction

In recent years, equity crowdfunding or crowdfunding, respectively, has become a popular way to finance new and emerging ventures (Ahlers et al. 2015; Vulkan, Åstebro, and Sierra 2016). Evidently, however, the equity crowdfunding market is unique in various ways compared to traditional ways of funding: While it enables entrepreneurs to publish open-calls for funding in exchange for equity or equity-like shares, equity crowdfunding does not only address single investors but a magnitude of small investors who might want to participate in the growth of primarily young businesses (Bradford 2012; Belleflamme, Lambert, and Schwienbacher 2014). Moreover, the internet-based environment makes direct interaction between investors and entrepreneurs difficult. The investors therefore have to rely considerably on the provided profile information on particular platforms. Consequently, capital-seeking ventures have an incentive to present only what is favourable for their funding on these platforms. In practice, this means that these new ventures publish highly standardized profiles that provide (favourable) key information about the business model and its prospects.

The key idea of this research note is that these highly standardized and comparably lean information procedures enhance problems of asymmetric information between investors and entrepreneurs regarding the evaluation of the projects, potentially causing problems of adverse selection (e.g. Akerlof 1970; Stiglitz and Weiss 1981; Hellmann and Stiglitz 2000). Even though platforms offer various ways to ensure transparent communication between

entrepreneurs and potential investors (e.g. forums and live-video conferences), empirical research about the quality of signals capital-seeking ventures can send to investors is still in its infancy.

First research papers show that educational degrees (Ahlers et al. 2015), network relationships (Ahlers et al. 2015; Vismara 2016), quality disclosures through external credentials, update information during the campaign (Block, Hornuf, and Moritz 2018; Moritz, Block, and Lutz 2015) and the provision of financial information (Ahlers et al. 2015; Lukkarinen et al. 2016) can mitigate such potential informational problems and, consequently, influence funding success positively. In particular, Vismara (2016) and Ahlers et al. (2015) demonstrate that the retention of equity is an effective signal to increase later campaign success. Hence, founders who gave away a larger proportion of their venture received a smaller number of investors and less capital. However, despite its importance in practice, an understanding of the relationship between the founders' own financial investments (commitment) and financing success has been neglected so far in a crowdfunding context (Ahlers et al. 2015).

The present article intends to fill this gap in research literature by analysing the relationship between the ex ante founders' financial investments in their own new venture and the campaigns success. Following financial main stream theory, we argue that founders will provide a greater proportion of the initial investment if the project is anticipated to be successful. This central aspect for practitioners has not yet been addressed in the emerging literature discussing how different quality signals lower the informational gap in equity crowdfunding (e.g. Ahlers et al. 2015; Vismara 2016; Lukkarinen et al. 2016). As impressively illustrated in the introductory quote, it is the amount of 'skin in the game' than can be understood as a reliable signal in the first place for entrepreneurial motivation, implicit engagement with business success as well as willingness to be successful.

The main reason why previous research has neglected this research question so far is that these studies rely mostly on publicly available data rather than their practical importance. In our paper, in contrast, we rely on platform data as well as information gathered by telephone interviews with the founders of the new ventures. Thus, we are able to address the relationship between financial commitment of entrepreneurs and crowdfunding success in more detail. Our main finding is a fairly robust result that financial commitment and crowdfunding success are positively correlated. Even when accounting for the firm's development stage or financial indicators, the financial commitment of the entrepreneurs is still the single most important determinant in explaining funding success.

The rest of this research note is structured as follows: Chapter two provides the theoretical background. Chapter three describes the data sources, the operationalisation and methodology. Chapter four presents the results. The final chapter summarises the findings and discusses their implications.

2. Theoretical background

A key aspect in entrepreneurial finance research is to understand why some ventures are more successful than others in raising capital (e.g. Mason and Stark 2004; Sudek 2006; van Osnabrugge 2000). One reason –especially in early development stages– is that entrepreneurs and their potential investors face severe problems of asymmetric information regarding the evaluation of entrepreneurial capabilities due to the lack of a production history and reputation (e.g. Backes-Gellner and Werner 2007). Consequently, many new ventures typically start small and with restricted financial resources (e.g. Binks and Ennew 1996). As such, financial problems arise primarily as a consequence of informational asymmetries. However, as described above, the adverse effects of these problems may in part be counteracted by the use of the signaling mechanism. Accordingly, to reduce the informational gap, founders of high quality start-ups will send quality information via signaling which

indicates that they will run their new venture successfully (for an overview of the literature, see Parker 2004). Investors, in turn, have an incentive to screen such markets for observable signals about the 'true' underlying quality of the new firm. Especially in the very special market of equity crowdfunding, where investors usually lack the financial sophistication and experience of professional venture capitalists (Ahlers et al. 2015; Freear, Sohl, and Wetzel 1994), quality signals are expected to play a crucial role in investment decisions.

In the specific context of equity crowdfunding, investors are limited in monitoring and controlling business activities of new ventures before their investment. Furthermore, they are usually not able to conduct thorough screening and due diligence checks *ex ante* because these instruments are too costly in relation to their oftentimes small investment. Despite the various opportunities to communicate with the entrepreneurs themselves (e.g. via web 2.0), investors need to rely substantially on the provided profile information on crowdfunding platforms, which itself also conduct screening (Löher 2017). Nevertheless, the possibilities to reduce information asymmetries are still more limited than in case of bank, business angel, or venture capital funding. Banks, for example, screen entrepreneurs as loan applicants thoroughly and often delve into detailed non-public business plans and strategies. Business angels and venture capitalists base their investment decision considerably on soft information that they gather through meetings and direct interaction with the founding team. However, banks, business angels, or venture capital firms also resort to publicly available and trustworthy information if this implies lower evaluation costs. Consequently, to mitigate risks of adverse selection, investors are suggested to rely considerably on different signals of commitment.

Entrepreneurs' ways to signal their commitment and show their true belief in the business prospects can be manifold. Cardon, Mittens, and Sudek (2016), for example, refer to the time and money they dedicate to their business. Another signal is the educational level

because highly educated entrepreneurs signal high ability to successfully launch and lead a business into a prosperous future (e.g. Backes-Gellner and Werner 2007). Also, the entrepreneurs' financial contribution in the business signals investors the perceived potentials of the business in entrepreneurs' eyes. Hence, the larger his proportion of 'skin in the game' the larger his belief in the future prospects of the business. Several studies have therefore stressed the importance of entrepreneurs' financial commitment in accessing bank financing (Eddleston et al. 2016), venture capital (Busenitz, Fiet, and Moesel 2005), and business angel financing (Prasad, Bruton, and Vozikis 2000). Leland and Pyle (1977) provide a sound theoretical basis that founders, who anticipate greater success, are more likely to provide a greater proportion of the initial investment. The precondition for this implication is that founders have better private information on the probability of success of the enterprise than outside investors.

The objective of this paper is to investigate if the positive relationship between financial commitment of the founders and funding success also holds in the context of equity crowdfunding. Our paper thereby contributes to the research on equity crowdfunding by presenting the initial financial commitment as a high-quality signal in a market with considerable asymmetric information between investors and entrepreneurs. More specifically, the magnitude of financial means provided by the entrepreneur clearly reveals the entrepreneurs' confidence in the business model. As entrepreneurs will lose their initially invested capital in case of failure, it meets the conditions of reliable signals because it is difficult to distort and, furthermore, is costly which prevents 'bad' companies from imitation. Campaigns conducted by entrepreneurs that invested little or no equity in their own business might be perceived as an attempt to 'sell a lemon'. Consequently, investors abstain from backing the business. We therefore expect, *ceteris paribus*, a positive correlation between the

amount of equity the founders of the new firms invest in their new ventures ex ante and funding success.

3. Data and Procedure

3.1. Data

We utilize the Crowdfunding Database of the IfM Bonn (Löher et al., 2015) to explore the relationship between entrepreneurs' financial commitment and funding success. The data set includes all campaigns launched between August 2011 and November 2014 on four leading German platforms (Companisto, Fundsters, Innvestment, and Seedmatch). In total, we identified 163 funding rounds of 145 new ventures. We collected this publicly available information, whereas the individually chosen pre-announced funding threshold and final funding outcome were of main interest. If investors decide to invest at least the funding threshold, the platforms pass the funding sum to the firms. If the invested sum falls short of the investment threshold, then the campaign was not successful and investors retain their investments. In our data, the pre-announced funding threshold was exceeded in nine in ten initiated campaigns (89 %).

To gather comparable information about the fundraisers' own financial commitment, we conducted telephone interviews between March and May 2015. We executed 45 interviews with the founders of the new firms. Questions regarding their own financial commitment in Euro were answered by 36 respondents, leaving us with a response rate of 25 %. As in the complete data, most ventures were successfully funded (94 %). Note that some businesses participated in more than one funding round. Our questions therefore concentrated on the very first campaign.

3.2. Operationalization and Methodology

The funding success of campaigns can be examined in various ways. A binary outcome variable indicates whether a firm was successful in reaching its minimum funding goal. Alternatively, the finally achieved funding sum in € reveals information about the extent of the campaign success. In this paper, we examine cardinal information because it provides deeper insights about the funding success than a binary variable. In comparison to other studies, the (log of the) raised funding sum in € (see, e.g., Hornuf and Schwienbacher 2014), we examine the funding level (see equation 1) as dependent variable. Our main argument for choosing this dependent variable is that the funding sum is interrelated with the minimum threshold value that is needed to successfully finish the funding.

$$\text{funding level} = \frac{\text{funding sum in €}}{\text{investment threshold in €}} * 100 \quad (1)$$

The core explanatory variable *fundraisers' financial commitment in €* refers to the sum of own financial means (equity) plus private collaterals (debt) of the founding team before the start of the first campaign. Thus, the value shows the maximum amount of capital that the team would personally lose in case of a business failure. As our central explanatory variable, we examine the *own commitment level* (see equation 2), which relates the own financial commitment in € to the investment threshold in €. As respondents were asked to report their own financial commitment in € before the campaign was started, this information can be regarded as exogenous.

$$\text{own commitment level} = \frac{\text{fundraisers' financial commitment in €}}{\text{investment threshold in €}} * 100 \quad (2)$$

The own commitment level provides insights about the relation between entrepreneurs' financial commitment and the minimum expected crowdfunders' commitment. Specifically, if own commitment level of entrepreneurs is lower than 100, then the crowd has invested more than the entrepreneurs. When the own commitment equals 100, then entrepreneurs and investors are committed equally. In case of values exceeding 100, entrepreneurs' commitment exceeds the one of crowdfunders and fundraisers are willing to bear a higher financial risk than investors. With the funding level as cardinal dependent variable, we are able to estimate the effect of the own commitment level with OLS.

Not all businesses are in comparable developmental stages at time of funding. This might also affect the perception of risks and the willingness to invest. We therefore include control variables to account for the developmental stage of the business (see Table 1). In addition, the evaluation of risks and potentials of the various crowdfunding campaigns are reflected in the control variables. Finally, we also account for an implicitly set upper investment limit, which was set at the beginning of the campaign.

Insert Table 1 about here

4. Results

The average own commitment level of entrepreneurs at the beginning of the funding campaign is equal to 148 (see Table 2, column 2). It therefore exceeds 100 which indicates that entrepreneurs are willing to take higher financial risks than their crowdfunders. This, however, only holds when the final funding sum equals the investment threshold. The average funding level at the end of the campaign, however, exceeds the value of 100 by the factor of 3.9 (see the notes in Table 2). Furthermore, we find that the financial means of entrepreneurs are lower than the financial involvement of the crowd in 29 of the 36 finished campaigns. One crowdfunding project was successfully financed with even financial commitments. The

median ratio between funding sum and fundraisers' financial commitment equals 2.5, which implies that the crowd invests more than twice the amount of the entrepreneurs.

Our baseline specification (specification 1 in Table 2) reveals a significantly positive coefficient of the own commitment level. The positive relationship between own financial commitment of entrepreneurs and the funding level suggests that higher own commitment significantly increases investors' willingness to invest more into the venture. Thus, our expectations were supported by the data. The perceived risk of investors and the willingness to invest in the venture is clearly affected by the business development or achieved milestones, respectively. Our first robustness check therefore includes the age of the venture, as it can be interpreted as a signal for being established on market. Specification (2) reveals that the coefficient of own commitment does not change substantially, which implies robustness of the results. In general, our considered firms are fairly young and were founded, on average, less than two years ago. In order to further disentangle the effects of the business development, we also include information regarding the stated utilization of the funding sum. All firms reporting market entry activities, first series of production, and/or first marketing and distribution activities are classified to be in the market entry phase. We classify firms to be in the market penetration phase if they reported exploitation of an established market and/or extension of marketing and distribution activities. In line with the young average age of the firms, the majority of firms is engaged in market entry activities (53 %). Inclusion of the information regarding developmental stages (specifications 3 and 4) even lead to an increase of the coefficients of own commitment. The positive relationship remains highly robust to these changes in specifications.

Insert Table 2 about here

Professional and non-professional investors alike are expected to carefully analyse the potentials of their investments. Especially in the case of (equity) crowdfunding, where

information about business prospects is restricted due to the limited information provided on platforms, the investment behaviour of peers or experts can be utilized as additional source of information about business potentials. When we include the involvement of institutional venture capitalists, the estimated effect of the own commitment level remains almost identical, which implies robustness of the coefficient of main interest (Specification 5).¹ The effect of the involvement of experts is positive, but statistically insignificant. Cholakova and Clarysse (2015) suggest that investors in equity crowdfunding are financially motivated. We therefore include the business valuation in € as control variable because this specific variable provides information about business potentials (specification 6). The positive coefficient of business valuation implies that higher valuations are associated with higher funding levels, which is in line with the literature on financially motivated funding behaviour. The coefficient of the financial commitment of entrepreneurs, again, remains highly robust to this alternative specification.

Frequent discussions about crowdfunding suggest that the entrepreneurs are not capable to raise capital from other sources of capital, which might be interpreted as a reason, why the business is perceived as a lemon. We also asked fundraisers about whether alternative financial means were available before the start of the campaign. Four in five respondents surveyed that alternative financial sources had been available.² This implies that these

¹ Another indicator of peer effects is the number of already involved investors or accumulated capital (see, e.g., Agrawal et al., 2014). We, however, have no data on the number of investors at different stages of the crowdfunding campaign to precisely control for herding. This is the reason why our robustness check in specification (5) only concentrates on the peer effect of experts.

² Own financial means, classical bank loans, promotional loans, and public funds are surveyed seldom, while the most frequent alternative has been business angel financing (Löher et al 2015, p. 22).

entrepreneurs voluntarily opted for utilization of crowdfunding. Also in specification (7), the coefficient of the own commitment level remains comparable to the ones estimated in the former specifications.

The funding level is bounded from above by the maximum funding sum, the so-called funding goal. The funding goal is of importance to the entrepreneurs because it enables them to limit the equity ratio held by investors. For this reason, the funding level is co-determined by the funding goal. We observe that the maximum funding level was likely to be obtained if the own commitment level exceeded 100. Specifically, eleven in 17 ventures with own commitment levels greater than 100 have been funded maximally. The funding goal was less likely to be obtained when the commitment of entrepreneurs did not exceed 100: In this case seven in 19 businesses were maximally funded. We therefore conducted a robustness check by controlling for a dummy variable indicating that the funding goal was achieved. The coefficient of the own commitment level is again fairly robust to the inclusion of this particular dummy variable (specification 8) and comparable in size with the one presented in the baseline specification. It is, however, not statistically significant any longer because the standard error is largest in this specification.³

Finally, when we included all the variables into our full model (specification 9), we find a statistically significant and robust effect of the own commitment level. We additionally learn from this specification that, according to the presented BETA coefficients, the own commitment is the single most important variable. In sum, the results are in line with the characteristics of a significant signal effect of the own financial commitment in the equity crowdfunding process.

³ Note that funding level and funding goal are simultaneously determined. The dummy variable funding goal achieved is therefore not exogenous.

5. Summary and Reflection

Our paper augments the growing literature about success factors in equity crowdfunding, whereas our focus is on the extent entrepreneurs are financially committed (or have 'skin in the game'). The results clearly indicate a positive relationship between financial commitment of entrepreneurs and crowdfunder success. Raising too much capital compared to own commitment might be perceived as an attempt to 'sell a lemon' and therefore investors decide against investment. Moreover, a large proportion of outside capital may point to perk consumption and effort problems influencing agency costs of the investors. High own financial means of entrepreneurs, in turn, clearly send the signal that entrepreneurs have confidence in their business model and that they are willing to lead the venture into a prosperous future (also see the introductory quote by Kenneth H. Blanchard). It therefore aligns the ex post incentives between entrepreneur and investors.

Our results clearly have practical implications. Entrepreneurs are advised to reveal their personal financial commitment when communicating with potential investors. If entrepreneurs are not capable or willing to communicate their full financial commitment, then asymmetric information between investors and entrepreneurs prevails, which potentially causes adverse selection in the crowdfunder market. Commitment, however, is shown to be a multi-faceted concept, which refers to the moment in which an individual starts to devote most of his or her time, energy, and financial, intellectual, relational and emotional resources to his or her project (Fayolle, Basso, and Tornikoski 2011). We therefore hypothesize that the effect of monetary commitment is highly correlated with other forms of commitment, such as high working hours or flexibility, which are clearly communicated and observable to investors. As an example, highly committed entrepreneurs might reveal their commitment also by working night shifts to attract customers or investors in different time zones. For this reason, our statistically significant effects of financial commitment might be due to other forms

of individual commitment with business success, which are not surveyed in our data. We have therefore not been able to disentangle the effects of different dimensions of commitment in this paper. It thus remains a challenge for future research to analyse effects of various facets of commitment in crowdfunder success.

We furthermore consider empirical research about the nexus between financial commitment and firm performance after the funding as a promising avenue for future research. Hereby, one might, among others, hypothesize that entrepreneurs do not 'jump ship' when they are confronted with difficulties (Zott and Huy 2007). Finally, the extent at which financial commitment is a valid signal about later firm performance is yet an open question in entrepreneurial finance.

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Tables

Table 1: Control variables

Variable Name	Description	Source	Original Question
Age at time of funding	Calculated as: Year of campaign start minus the founding year of the business	Hand-Collected data base	
Market entry activities	Dummy variable which takes the value 1 if investment was used to finance market entry; 0 else.	Telephone interview	<p>What have you done with the crowdfunding capital? (multiple answers possible)</p> <ul style="list-style-type: none"> • Market launch / finance first series (market entry) • Initiation of first marketing and sales activities (market entry)
Market penetration stage	Dummy variable which takes the value 1 if investment was used to finance market penetration; 0 else.	Telephone interview	<p>What have you done with the crowdfunding capital? (multiple answers possible)</p> <ul style="list-style-type: none"> • Penetration of an already existing market (market penetration) • Extension of first marketing and sales activities (market penetration)
Venture capital	Dummy variable which takes the value 1 if business angle(s) or venture capitalist(s) involved at time of funding; 0 else.	Telephone Interview	<p>Which sources of capital did you use before and after the crowdfunding? (multiple answers possible)</p> <p>At the time of funding:</p> <ul style="list-style-type: none"> • Own means • Family, friends and fools • Business angels • Venture capitalist • Subsidized loan • Bank loan • Other public subsidies
Business valuation in €	Business valuation in €	Hand-Collected data base	
Financial alternatives available before funding start	Dummy variable which takes the value 1 if financial alternatives available; 0 else.	Telephone interview	<p>Were other sources of financing available before the campaign start?</p> <ul style="list-style-type: none"> • no • yes <p>"Don't know" and "no answer" were not considered</p>
Funding goal achieved	Dummy variable which takes the value 1 if maximum funding sum was achieved; 0 else.	Hand-Collected data base	

Table 2: Descriptive statistics and OLS estimation results with dependent variable *funding level*

Variables	Mean (std. dev)	(1) Baseline specification	(2) Stages of business development (milestones)	(3)	(4)	(5)	(6)	(7)	(8)	(9) Full model
Own commitment level	147.87 (141.77)	1.25* (0.72) [0.48]	1.21* (0.62) [0.46]	1.28* (0.74) [0.49]	1.28* (0.73) [0.49]	1.26* (0.73) [0.48]	1.24* (0.71) [0.47]	1.27* (0.73) [0.48]	1.23 (0.79) [0.47]	1.29* (0.66) [0.49]
Age at time of funding	1.72 (1.16)		-105.93** (47.59) [-0.33]							-139.43** (56.02) [-0.43]
Market entry activities	0.53 (0.51)			-31.94 (105.02) [-0.04]						-56.81 (92.46) [-0.08]
Market penetration stage	0.36 (0.49)				82.81 (102.48) [0.11]					144.18 (101.81) [0.19]
Institutional venture capital	0.31 (0.47)					25.58 (123.91) [0.03]				20.99 (178.14) [0.03]
Business valuation in €	1,561,209.53 (1,225,375.04)						6.27e-05*** (2.19e-05) [0.21]			7.94e-05 (5.15e-05) [0.26]
Financial alternatives available before funding start	0.81 (0.40)							93.72 (116.82) [0.10]		-147.13 (127.88) [-0.16]
Funding goal achieved	0.50 (0.51)								51.13 (128.27) [0.07]	51.09 (119.19) [0.07]
Constant		201.15** (82.78)	389.62*** (96.05)	213.52** (87.35)	167.53* (91.31)	192.66** (79.11)	104.70 (103.36)	122.70 (141.64)	179.41** (68.81)	432.83** (172.78)
Number of Observations					36					
R ²		0.227	0.335	0.228	0.238	0.228	0.269	0.237	0.231	0.468

Funding level: Mean: 386.34, Std. Dev.: 372.90.

Heteroscedasticity robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Standardized (BETA) coefficients in brackets.

Detail about the control variables in in Table 1