Does the Media Mislead Investors? Evidence from Equity Crowdfunding

By

Daniya Saulebayeva

Submitted to
Central European University

Department of Economics and Business

In partial fulfillment of the requirements for the degree of MA in Economics

Supervisor: Professor Soomin Lee

Budapest, Hungary 2019

Abstract

In this thesis, I mainly investigate the effect of media coverage on firms' survival after a successful crowdfunding campaign. Using a data set based on the UK equity crowdfunding platform Crowdcube, I analyze a sample of 260 successfully funded campaigns in years 2013-2015. The results reveal that media coverage is a significant predictor of a firm's survival rate. Moreover, a firm's survival rate is increasing in the number of investors. Furthermore, CEO/founder's startup and industry experience dos not have significant effect on a firm's survival rate.

Keywords: Crowdfunding, media coverage, equity crowdfunding, media attention

Acknowledgements

I would like to thank my advisor Prof. Lee for his support, guidance and valuable feedback throughout the process of writing this thesis. I also would like to express my deepest gratitude for my family for their continuous encouragement. All errors are mine.

Table of Contents

	Introduction	
	Literature Review	
3.	Theoretical Framework and Hypotheses	8
4.	Data	11
	Data Description and Collection	
	Dependent Variables	
	Independent Variables	
	Control Variables	
	Descriptive statistics	
	Methodology	
	Results	
8.	Conclusion	23

References

Appendix

1. Introduction

It has been widely accepted that the media plays an important role in financial markets. Media attention influences investment choices of investors and affects capital flows (Kaniel and Parham, 2015). By delivering information to investors, the media facilitates the incorporation of information in prices and makes financial markets more efficient (Peress, 2014). The goal of this paper is to find out whether media coverage attracts investors' attention to the 'right' investments and helps investors to make better financial decisions. To answer this question, I bring evidence from equity crowdfunding.

Equity crowdfunding, in its essence, is raising funds from the 'crowd' by offering shares of the firm in return. Even though research on the topic of equity crowdfunding has been steadily growing since 2012, it remains at an early stage of development (Mochkabadi and Volkmann, 2018). Most of the papers in the area study the types of firms and investors in equity crowdfunding, investment dynamics and determinants of campaign success (Mochkabadi and Volkmann, 2018). However, only a handful of papers investigate the performance of firms following successful crowdfunding. In this paper, I employ a dataset set of 260 campaigns that were successfully funded on the UK equity crowdfunding platform Crowdcube in years 2013-2015 and see whether these firms remain active today. Then, I use a probit regression to investigate what factors known at the end of the campaign, such as media coverage, number of investors, CEO experience, and firm specific characteristics, can help predict whether the firm survives. The main contribution of this paper to the literature is showing the link between media coverage during the crowdfunding campaign and the probability of firm's survival.

The results show that media coverage and the number of investors are significant predictors of the firm's survival, after controlling for such factors as year of campaign, industry, location and

age of the firm. CEO/founder's startup and industry experience do not affect the probability of firm survival in the aftermarket.

This paper is organized as follows. In Section 2, I present a literature review of the previous research done on equity crowdfunding. Section 3 describes the theoretical framework and formulates the hypotheses to be tested in the paper. Section 4 describes the data used for the purposes of this study and presents descriptive statistics of the variables. In Section 5, I present the results and discuss the findings. The conclusion and the summary of the key findings will be presented in Section 6.

2. Literature Review

Grossman and Stiglitz (1980) argued that obtaining information is costly, and prices do not reflect all the available information, because if they did, people who gained costly information would not be compensated for it. The fact that acquiring information is costly explains why the media's attention on financial vehicles influences investors' "consideration set" (Merton 1987 in Kaniel and Parham, 2015, page 5).

Several studies have investigated the relationship between media coverage and consumers' behavior. Barber and Odean (2008) state that when choosing the stocks to buy, investors have a tremendous choice issue. Due to bounded-rationality, investors consider only the stocks that draw their attention. The authors show that for stocks that were featured in the financial newspapers, the investors are net buyers. Sirri and Tufano (1998) found that media coverage is highly related to mutual fund's growth. The authors also identified that larger and more volatile funds are more likely to appear in the media. Employing a dataset based on the Wall Street Journal's "Category Kings", Kaniel and Parham (2015) prove the causal relationship between media attention and people's investment decisions.

Crowdfunding is useful to explore the relationship between media coverage and a firm's survival, because crowdfunding makes investment flows more available compared to other sources of capital due to low entry requirements, participation of both naïve and sophisticated investors. Crowdfunding campaigns are grouped into four categories according to their purpose. They are donation-based, reward-based, lending-based and equity-based crowdfunding. The focus of this research is equity-based crowdfunding where investors receive shares of the venture in exchange for the funds provided, mainly on internet-based platforms (Galkiewicz, 2018).

The market for equity crowdfunding has seen massive growth in the last years. According to Beauhurst's report (2018), the amount of capital raised in the UK increased from £1.9bn in 2012 to £8.6bn in 2017. However, there are three issues inherent to equity crowdfunding: high risks, information asymmetry, agency costs. In the UK, equity crowdfunding is regulated under the Financial Services and Markets Act 2000 and classified as a high-risk investment activity (Financial Conduct Authority, 2018). Also, the 'crowd' naturally includes both accredited and unaccredited investors. A high-level of information asymmetry (pre-investment) and agency costs (post-investment) are pertinent to all start-ups (Ibrahim, 2015), but can be more severe in equity crowdfunding.

Vismara (2018) argues that most people on the capital-demand side of equity crowdfunding are first-time entrepreneurs with limited access to other sources of funding due to lack of a track-record. For such, equity crowdfunding helps to democratize capital markets. On the supply side of equity crowdfunding is the crowd, people who are much less efficient than professional investors as they lack expertise and experience. There is little incentive for an individual investor to extensively assess investment opportunities and subsequently monitor the firm (Vismara 2018). In contrast, VCs and angel investors perform due diligence by meeting the management of the firm (Signori and Vismara (2016). Some investors may try to avoid costs of due diligence and free-ride by investing in campaign with the greatest number of funders. Also, equity crowdfunding investors do not have access to professional financial analysis reports, as they could have at other financing channels as Initial Public Offering (IPO) (Vismara 2018b). In order to ensure the success of a campaign, entrepreneurs can mitigate information asymmetry by providing informative signals about the quality of their projects. If information asymmetry is so high that investors will not be able to make any useful inferences regarding any given campaign, good quality firms would shun

equity crowdfunding. In that case, equity crowdfunding will be a market for lemons with firms that will fail with high probability and investors would not invest. However, the fact that many start-ups raised funds through equity-crowdfunding means that investors can make judgements regarding start-up quality and are susceptible to entrepreneurs' and outside signals (Ahlers et al. 2015).

Several studies explored the reasons for entrepreneurs choosing equity crowdfunding over other sources of capital. So, entrepreneurs may prefer to raise funds via equity crowdfunding when they would like to attract future potential customers to their business (Miglo, 2016). A survey-based study by Brown and Davies (2015) identifies relative speed of raising finances, perceived high probability of rejection by alternative financing methods, feedback from public and autonomy as the reasons for entrepreneurs using equity crowdfunding. Mokhtarrudin et al. (2017), Nascimento and Querette (2013), and Dorfleitner et al. (2014) find that equity crowdfunding is a more suitable for smaller businesses. Some start-ups have little potential for raising funds through banks and private investors because they lack a track record, too small and at very early stage of development even for investors specializing in financing businesses at early stages (Lavinsky, 2010 in Nitani and Riding, 2017).

Research on equity crowdfunding from the investor's perspective considers such issues as the investor's motives for investing through equity crowdfunding, types of investors, investment evaluation and return on investment. Cholakova and Clarysse (2014) conducted a survey administered by Symbid platform, to identify the motives of investors pledging in equity-based and reward-based crowdfunding platforms. They find that investors mainly have rational financial gains motives rather than non-financial. Bretschneider and Leimeister (2017) focus on non-financial motives of crowdfunding and show that investors are also driven by recognition received

in exchange of their pledge, disposition for the campaign, online image and lobbying motives. Abrams (2015) studied types of investors involved following the opening of equity crowdfunding market in the USA in May 2016. The author finds that "family, friends and fools" tend to invest on the first week of the campaign and has less regard for investment evaluation factors as balance sheets and information submitted to Security and Exchange Commission, while sophisticated investors tend to invest closer to the end of the campaign. So, equity crowdfunding attracts sophisticated investors, and those investors are more represented in the final weeks of the campaigns. Wallmeroth (2016) argues that the crowd in equity crowdfunding is by no means homogenous, where some investors make more strategic decisions on average by pledging more funds and less frequently. A number of studies investigated gender differences in observed investors' behavior. Hervé et al. (2017) find that women are more risk-averse than men, and thus invest less in the riskiest campaigns. The study by Mohammadi and Shafi (2018) confirm the previous findings, and reveal that women are more likely to invest in the campaigns with higher percentages of men investors.

Even though the goal of crowdfunding is to help to establish lasting business, only a few studies were dedicated to the analysis of the performance of the firms and returns on crowd's investment after successful equity crowdfunding campaign. Among them is the paper by Signori and Vismara (2016), which was the first to attempt to measure the return on investment in equity crowdfunding. The authors estimated an expected yearly return of 8.8%, which is higher than the yearly return on investment at Initial Public Offerings (IPO). Another study by Hornuf and Schmitt (2017) identified factors affecting follow-up financing and bankruptcy after a successful crowdfunding campaign. The authors performed the duration analysis for the follow-up funding and firm failure. They show that number of senior managers, number of VC investors increased

probability of getting financing after equity crowdfunding and another rounds of equity crowdfunding decreases odds of business's failure.

3. Theoretical Framework and Hypotheses

Hypothesis 1. Number of investors increases the probability of firm survival after a successful equity crowdfunding campaign.

The firms on equity crowdfunding platforms are funded only if the campaign had been successful. If the target amount was not reached, the funds of the investors are returned. This mechanism might incentivize investors to back the campaign even when they have weak or vague positive information, because they predict that their investments will be taken only in case when many other investors with positive information will invest in the project as well (Hakenes and Schlegel, 2014). Moreover, investors observe number of backers for each campaign and thus might also free-ride on others' information without having any information themselves, by investing only in campaigns with already high number of backers. Through theoretical model of loan-based equity crowdfunding, Hakenes and Schlegel (2014) show that in equilibrium firms will set low targets to insure the captal and investors will have incentive to collect information. That is, bad firms in the market also set low targets in order to increase the chances for their campaigns to get funded. This induces investors to gather information and alleviates free-riding issue. So, in this setting, investors make informed decisions and so-called "wisdom of crowd" is implemented. This leads to positive relationship between number of backers and firm's survival after a successful equity crowdfunding campaign.

Grüner and Siemroth (2017) suggest that decentralized small investments in equity crowdfunding result in Pareto efficient capital allocation. Investors are also potential consumers, and investment decisions to certain extent reflect their consumption preferences. Information regarding consumer preferences is aggregated in equity crowdfunding, and funds flow to firms with highest potential demand. Also, Allen and Gale (1998) show that diversity of perspectives

and opinions, cheap information lead to higher efficiency in financial markets. Subsample of future potential consumers participates in investment decision, which can be an advantage of equity crowdfunding over traditional sources of funding. However, if some groups of future consumers do not have enough wealth to invest, then flow of funds will reflect only the preferences of wealthy individuals (Grüner and Siemroth 2017). This issue is mitigated by Crowdcube platform, where investors can invest as little as £10. As a result, I expect firms with higher number of investors to have higher probability of survival.

Hypothesis 2. Media coverage has positive effect on probability of survival of a firm after a successful equity crowdfunding campaign.

The media disseminates information that is essential for investors to make financial decisions (Kaniel and Parham, 2015). More media coverage on certain firms, not only increases number of investors, but also increases their informational resources to make more informed and better decisions. Media coverage increases potential consumers' awareness about the firm and its products and services, which positive affects firm's future demand.

Hence, I expect media coverage to positively affect the probability of firm survival.

Hypothesis 3. Following a successful equity crowdfunding campaign, CEO/founder's industry experience and startup experience have a positive effect on the probability of firm's survival.

Human capital signals such as board's or entrepreneur's education, industry experience, management experience, start-up experiences were proven to positively affect the probability of success of an equity crowdfunding campaign (Nitani and Riding, 2017, Ahlers et al. 2015). That is, investors believe that these factors will have positive influence on the post-campaign

performance of firms. It is important to test, whether investors are right when they "bet on the jockey, not on the horse" (Delmar and Shane, 2006, p.2).

Delmar and Shane (2006) argue that due their newness, startups face certain set of issues such as lack of routine for operations of the firm and coordination of employees. New ventures also usually lack social ties that could facilitate the business. A CEO/founder's industry and startup experience are important factors that could alleviate those problems. Startup experience can facilitate acquisition of resources and organization of the firm. Industry experience brings in business networks, knowledge about operations of a firm and functioning of the sector (Delmar and Shane, 2006). Also, a CEO/founder with an experience in the relevant industry is more likely to be able to adapt to changing business conditions (Marino and De Noble, 1997).

However, the results of the studies on the topic are controversial. A meta -study by Song et al. (2007) found that management team's start-up experience and experience in related industries are insignificant success factors in new technology businesses. A study by VC firm First Round (2016) found that there was no significant difference between performance of investments in first-time entrepreneurs and experienced founders. Delmar and Shane (2006) reveal that founder's experience positively affects new venture's survival.

In this paper, I hypothesize that CEO/founder's startup experience and experience in the relevant industry will have a positive effect on the probability of firms' survival.

4. Data

Primary and secondary sources were utilized in order to gather data for the purposes of this thesis. The primary source of data used was equity crowdfunding platform Crowdcube.

Crowdcube is the UK's first crowdfunding platform that was founded in February 2011 by Luke Lang and Darren Westlake. The objective of the platform is stated as "to give entrepreneurs the opportunity to take control of raising funding from their own network of friends, family, customers and strangers" (Crowdcube, 2019). In 2017, 120000 investments were made to fund 325 businesses on Crowdcube, which raised about £130 million of funds (Crowdcube, 2019). The minimum amount that a funder can invest in any of the projects on the platform is as little as £10. Before backing a project on Crowdcube, investors are asked to take a small quiz in order to make sure they understand the risks associated with the investment. If the target amount is not raised during the campaign, funding is terminated, and investments are returned to the backers.

As the secondary source of data, I gathered information on certain variables (e.g. media appearance, CEO/founder startup experience) on LexisNexis, world's largest database for legal and public records, and LinkedIn.

Since information regarding the projects on Crowdcube is mostly exhaustive, structured and cohesive, I collected the primary data by scraping the relevant information on the campaign from the platform and opted for hand-collecting to gather information on variables outside of Crowdcube.

The final dataset consists of a sample of 261 projects that were successfully funded on Crowdcube in the period between 2013 and 2015. 14 projects were excluded from the dataset due to inactivity of an initial campaign page. Table 1 describes the variables utilized for this research.

Table 1. Variables Description.

Variables	Definition
Dependent variable	
status	Binary variable (=1) if the firm is still active and (=0) if it was liquidated,
	dissolved, under insolvency proceedings.
Independent variables	
media_cov	Total number of newspaper articles discussing, mentioning the firm during
	the period of 6 months preceding the end of the campaign; included in level
	form in the regression
nmbr_investors	Total number of investors of the campaign; included in log form in the
	regression
ceo_industry_exp	Dummy variable indicating whether (=1) or not (=0) the entrepreneur has
	experience in the relevant industry
ceo_startup_exp	Binary variable (= 1) if the CEO has previous start-up experience, and (=
	0) otherwise
Control variables	
age_years	Age in years of the firm at the end of the campaign calculated by
	differencing the final date of the campaign and incorporation date;
	included in level form in the regression
location	Dummy variable (=1) if the location of the firm is London and (=0)
	otherwise
ceo_gender	Dummy variable corresponding to the gender of the entrepreneur (male =
	1, female = 0)
equity	Percentage of equity offered; included in the level form in the regression
amnt_target	Total amount of capital targeted by the firm in pounds sterling (£);
	included in log form in the regression
co_founder	Dummy variable corresponding to whether the start-up was founded by
	co-founders (=1), or just by one person (=0)
year_2013, year_2014,	Year dummies of the campaign
year_2015	
service, manuf_retail,	Industry categorical variables: Service, manufacturing and retail, IT and
IT_tech, food_drinks	technology, food/drinks/restaurants

Dependent Variable. The dependent variable in this study is *status*, which is equal to 1 if the status of the firm is active, and 0 is non-active in May 2019. The information about the current status of the firms was collected from Crowdcube website itself.

Independent Variables. To test the main hypothesis regarding the relationship between media coverage and firm survival, I needed the information regarding media coverage of the

campaign and firm. The variable *media_cov* was hand collected from the LexisNexis database, and represents the number of articles in the online and printed newspapers that featured the firm in the period of 6 months up to the final date of the campaign.

The second dependent variable numb_investors captures number of investors who backed the firm. The data was collected from the Crowdcube platform. To test the third hypothesis, I use the variables *ceo_industry_exp* and *ceo_startup_exp*. The sources of data for these variables are LinkedIn and Crowdcube.

Control Variables. Certain characteristics of firms may affect both probability of firm's survival and media coverage. To account for unobserved heterogeneity, I consider the following control variables. As firms that have existed for longer time might be better known among the public and their campaign might be more newsworthy (Strauß et al, 2017), I control for age of the firm, using variable *age_years*. Additionally, on average younger firms are more sensitive to market conditions and face more constraints when raising capital (Pierce, 2010 in Hornuf et al., 2018). There is also higher probability of failure for younger firms (Hall,1987 in Cressy, 2006)

The firms that run campaigns on earlier years will have higher probability of failure, simply because that have had more time to fail. Thus, I control for year effects by adding year dummies. I also control for the location of the firms by introducing variables location which is equal to 1 if the firm is situated in London, most populated city of UK, and 0 if otherwise (within UK). Hornuf and Schmitt (2016) find that investors are biased towards firms in their region, even controlling for friends and family. Angel-investors, who tend to pledge higher amounts of money were found to exhibit even higher level of locality bias. However, the investors who primarily invest inside of their locality on average tend to have more firms in their portfolio which go into bankruptcy (Hornuf and Schmitt, 2016).

I include dummy variables for the industry of the firms, because industry specific factors as capital intensity and debt structure affect chances of firms' survival (Audretsch, 1997). I employed the industry classification provided by Crowdcube, to categorize the firms into broader five groups: service, IT and technology, manufacturing, retail, food and drinks.

I also control for the effects of equity offering, ceo/founder's gender and whether the firm was started by single entrepreneur or more. Pollock and Rindova (2003) claim that equity offering might signal about the quality firm.

The data in this study is subject to several limitations. Regarding the variable *media_cov*, I do not account for differences in the types of the sources of articles. Some publications might be more influential, have wider circulation and have higher outreach. Additionally, the variable *media_cov* does not account for the of articles, as articles with positive and negative tones have different impacts

5. Descriptive Statistics

Table 3 provides the descriptive statistics on the variables. It can be observed that 84 out of 261 (32.2%) of the firms in our dataset are currently non-active. For comparison, the failure rate for firms funded by angel investors in UK is 56% (Nesta, 2009). Signori and Vismara (2016) also argue that firms that raised funds through equity crowdfunding demonstrate lower failure rates than firms that went public on London Alternative Investment Market (AIM). However, there is no secondary market for equities bought on Crowdcube and in the eight-year history of the platform, there had been nine positive exits.

Table 3 also allows us to see how firms that survived following a successful equity crowdfunding campaign differ from those that failed. The table shows that the differences in averages between the two groups (survived and failed) for variables *numb_investors* and *media_cov* are statistically significant at 1 % significance level. The average number of investors for each campaign is 201. Specifically, the average number of investors for firms that subsequently survived is 237.4, while for firms that failed is 125.5. Also, on average, firms that survived raised more funds (£494,673.44) than firms that failed (£316,352.65).

In 85% of the firms in the sample, the CEO/founder of the firm was male. In 160 firms out of 261, the CEO/founder of the firm had experience in the industry of firm's operations. In 46.36% of the firms, the CEO/founder has had previous start-up experience. 40.2% of the firms was started by co-founders.

On average, each firm was spotted 2.63 articles in 6 months period before the final date of campaign. The firms that remained active in May 2019, on average, were mentioned in 3.45 articles during the crowdfunding campaign, while non-active firms in 1.15 articles. 60.2% of the

Table 2. Summary statistics

Table provides summary statistics on the 261 firms and shows the mean, standard deviation, minimum and maximum values for all variables. Column (6) shows the average for all variables for active firms, and column (7) for non-active firms. T-test was performed on the differences in means between active and non-active firms (Column 8).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	mean	sd	min	max	Active (177 obs)	Non-active (84 obs)	difference
status	261	0.678	0.468	0	1			
amnt_raised	261	436,600	720,780	25,690	6360516	527813.8	244398.3	-283415.5***
amnt_target	261	312,397	565,300	20,000	6000000	367583.3	196110.2	-171473**
equity	261	16.89	8.201	1	51	16.48588	17.75	1.264124
nmbr_investors	261	200.9	295.7	8	2,702	236.8418	125.2738	-111.568***
location	261	0.602	0.491	0	1	.6327684	.5357143	0970541
media_cov	261	2.705	5.103	0	25	3.451977	1.130952	-2.321025***
age_years	261	2.627	2.350	-1.117	12.55	2.683118	2.510009	1731091
ceo_gender	261	0.851	0.357	0	1	.8474576	.8571429	.0096852
ceo_industry_exp	261	0.613	0.488	0	1	.6271186	.5833333	0437853
ceo_startup_exp	261	0.464	0.500	0	1	.4632768	.4642857	.0010089
co_founder	261	0.402	0.499	0	2	.4011299	.4047619	.003632
service	261	0.215	0.411	0	1	.2316384	.1785714	053067
it_techn	261	0.261	0.440	0	1	.2429379	.297619	.0546812
food_drink_rest	261	0.284	0.452	0	1	.2655367	.3214286	.0558918
manuf_retail	261	0.241	0.429	0	1	.259887	.202381	0575061
year_2013	261	0.157	0.365	0	1	.0847458	.3095238	.224778***
year_2014	261	0.356	0.480	0	1	.3728814	.3214286	0514528
year_2015	261	0.487	0.501	0	1	.5423729	.3690476	1733253**

*** p<0.01, ** p<0.05, *p<0.1

EU eTD Collection

firms were based in London and on average firms existed for little more than two and a half years before starting a crowdfunding campaign.

Figure 1 exhibits the correlation of the variables used (also, see Appendix 1). As expected, the correlation coefficient is positive between amount of funds targeted and number of investors. There is also positive correlation (0.611) between media coverage and number of investors. Media coverage is also positively correlated with amount of capital raised (0.578). This correlation between media attention and flow of funds had been widely accepted (Kaniel and Parham, 2015). Firm's age and number of investors are positively correlated (0.293).

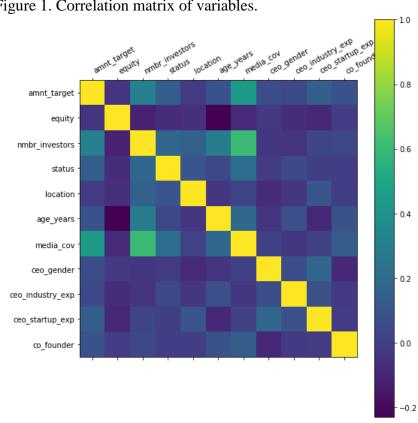


Figure 1. Correlation matrix of variables.

6. Methodology

The main goal of the study is to assess whether media coverage can be a useful predictor of firms' survival after a successful equity crowdfunding campaign.

First, I estimate a probit model to identify the main factors that affect the probability of firm's survival in the aftermarket. I construct four models with the following sets of controls: (1) explanatory variables and year controls, (2) include industry controls, (3) include offering and firm specific controls, (4) include CEO/founder specific controls.

The media coverage of a firm is not random and is influenced by many different factors. There may be some characteristics of a firm or information about a firm that is newsworthy. Thus, some factors that affect media coverage in the 6 months before the end date of equity crowdfunding campaign may also affect the probability of firm's survival. This endogeneity of media coverage makes it difficult to establish the causality between media coverage and firm's survival. To solve this endogeneity problem, I use the method of instrumental variables (IV). As an instrumental variable, I need to employ a variable which is uncorrelated with the error term but correlated with media coverage (*media_cov*). As an instrumental variable for *media_cov*, I use *amnt_target*. The two requirements for IV are instrument exogeneity and instrument relevance (Wooldridge, 2009).

I check the instrument relevance using regression of *amnt_target* on *media_cov*. The t-statistic on *amnt_target* is 8.72, and this indicates statistically significant positive correlation between *media_cov* and *amnt_target*. The correlation between *media_cov* and *amnt_target* is equal to 0.44, and this value is also statistically significant at 1%.

Based on the findings of the theoretical model, Hakenes and Schlegel (2014) argue that both bad and good firms set amount of funds targeted sufficiently low. So, amount of funds

targeted do not depend on the quality of the firms. The targets are set based on the amount of funds a firm requires, which depends on variety of factors such as relevant industry, age of the firm (controlled in the regression). I believe it is reasonable to assume that amount of funds targeted is uncorrelated with unobservable variables that affect the probability of firm's survival.

Table 3. Probit regressions. Average Marginal Effects (AME)

Dependent variable is status. The estimation method is probit, where coefficients represent average marginal effects. The specification in the first column controls for years' effect. The second column is like the first, but I also control for the industry effect. In the third column, in addition to previous control variables, I also account for offering and firm specific factors. The fourth model also controls for CEO/founder specific factors. The column 5 provides IV estimates with an instrument of *amnt_raised*

column 5 provides 1 v	(1)	(2)	(3)	(4)	(5)
VARIABLES	Model 1	Model 2	Model 3	Model 4	IV model
media_cov	0.0219**	0.0223**	0.0235**	0.0251**	0.157**
	(0.00991)	(0.00988)	(0.00998)	(0.0101)	(0.0641)
lnmbr_investors	0.0935**	0.0891**	0.0890**	0.0851*	-0.00663
	(0.0442)	(0.0441)	(0.0446)	(0.0447)	(0.287)
ceo_industry_exp	0.0485	0.0157	0.0224	0.0207	0.0732
	(0.0549)	(0.0567)	(0.0569)	(0.0566)	(0.182)
ceo_startup_exp	-0.0331	-0.0304	-0.0433	-0.0402	-0.0849
	(0.0545)	(0.0540)	(0.0548)	(0.0549)	(0.182)
year_2014	0.250***	0.255***	0.260***	0.268***	0.864***
	(0.0748)	(0.0743)	(0.0747)	(0.0744)	(0.265)
year_2015	0.236***	0.261***	0.247***	0.273***	0.959***
	(0.0767)	(0.0764)	(0.0774)	(0.0792)	(0.271)
it_techn		-0.137*	-0.137*	-0.139*	-0.483*
		(0.0780)	(0.0780)	(0.0780)	(0.254)
food_drink_rest		-0.143*	-0.143*	-0.147*	-0.475*
		(0.0793)	(0.0808)	(0.0805)	(0.264)
manuf_retail		-0.00999	-0.00550	-0.00764	-0.0162
		(0.0814)	(0.0823)	(0.0822)	(0.263)
equity			-0.00143	-0.00145	-0.00174
			(0.00357)	(0.00355)	(0.0117)
loc			0.0729	0.0706	0.247
			(0.0555)	(0.0555)	(0.179)
age_years			-0.00672	-0.00598	-0.0298
			(0.0127)	(0.0128)	(0.0413)
ceo_gender				-0.0284	-0.105
				(0.0781)	(0.250)
co_founder				-0.0749	-0.313*
				(0.0550)	(0.182)
Observations	261	261	261	261	

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

7. Results

Table 3 shows the average marginal effects (AME) of the probit regression models. For the marginal effects at the means (AME) for the probit regression models see Table 5 in the Appendix. From Table 3, it can be observed that for all four model specifications, the results show a statistically significant positive relationship between media coverage and probability of firm's survival. Estimated marginal effect of *media_cov* in Model (1) is 0.0219 and the result is significant at 5% significance level. This result can be interpreted as follows: if the media coverage increases by an infinitesimal amount, the probability of a firm's survival rises by 2.19%. Alternatively, if the marginal effect remains constant over one-unit interval of *media_cov*, then, one more article mentioning the firm increases the probability of firm's survival by 2.19%. As I add controls for industry, offering, firm and CEO specific controls, the coefficient on *media_cov* increases. The IV estimate of the effect of *media_cov* on probability of firm survival is 15.7% and significant at 5% significance level (Table 3, Col 5).

The variable *lnmbr_investors* has statistically significant positive effect on the probability of firms' survival. This effect persists through different model specifications. Increase of one in log(*nmbr_investors*) is associated with an increase of 0.0935 in the probability of firms' survival. However, the IV estimate of the effect is very low, as instrumental variable *lamnt_target* and *lnmbr_investors* have very high correlation. We fail to reject the Hypothesis 1 for the model specifications 1,2,3 in Table 3 at 5% significance level. I conclude that number of investors increases the probability of firm survival after a successful equity crowdfunding campaign.

The coefficients on the variables *ceo_industry_exp*, *ceo_startup_exp* are statistically insignificant for all model specifications. That is, the results show that there is no significant effect of CEO/founder's startup and industry experience on the probability of firms' survival. I believe,

partially, this result could be attributed to limiting the *ceo_industry_exp*, *ceo_startup_exp* variables to dummies. Data on years of experiences, quality of experiences might lead to more significant results. In Hypothesis 3, I argued that following a successful equity crowdfunding campaign, CEO/founder's industry experience and startup experience have a positive effect on the probability of firm's survival. However, the results do not show enough evidence in support of the hypothesis 3.

It can be seen from Table 3, that the year effects remain positive and statistically significant across specifications. The coefficient of the variable *year_2014* in the Model (4) is 0.268. It means that if the year of campaign changes from 2013 to 2014, the probability for the status of the firm to be active increases by 26.8 ppts.

Table 4. Summary of confirmed/rejected hypotheses

H1	Number of investors increases the probability of firm survival after a successful equity crowdfunding campaign.	Confirmed
H2	Media coverage has positive effect on probability of survival of a firm after a successful equity crowdfunding campaign.	Confirmed
Н3	Following a successful equity crowdfunding campaign, CEO/founder's industry experience and startup experience have a positive effect on the probability of firm's survival.	Rejected

8. Conclusion

This paper examines the effect of media coverage on the probability of firm survival in the context of equity crowdfunding. It also identifies the determinants of firm survival after a successful equity crowdfunding campaign. Using a data set of 261 successfully funded firms on the UK equity crowdfunding platform Crowdcube, I find evidence that media coverage is a significant predictor of firm survival in the aftermarket. From this result, it can be inferred that investors media attention does not mislead investors. Furthermore, I find that number of investors positively affects the probability of firm survival. It can be explained by 'wisdom of crowd' in equity crowdfunding and potential demand. CEO/founder startup and industry experience do not have a significant impact on the likelihood of firm survival.

This study adds to the limited number of literatures on the performance of firms following equity crowdfunding campaign. I believe the results on firm survival could be useful for policy makers in order to evaluate equity crowdfunding as a relatively new source of capital for new businesses. There are prospects for further research to identify whether investors react more to mere media attention or actual information the media carries. Finally, research could resolve the issue of endogeneity of media coverage.

.

References

- Abrams, E. (2017). Securities Crowdfunding: More than Family, Friends, and Fools? SSRN working paper, available at https://ssrn.com/abstract=2902217. Accessed 3 June 2018.
- Ahlers, Gerrit and Cumming, Douglas J. and Guenther, Christina and Schweizer, Denis, Signaling in Equity Crowdfunding (February 12, 2015). Entrepreneurship Theory and Practice, Forthcoming. Available at SSRN: https://ssrn.com/abstract=2564121
- Allen, F., & Gale, D. (1998). Diversity of opinion and financing of New Technologies. Journal of Financial Intermediation 8, 68-89
- Barber, B. M., & Odean, T. (2008). All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors. Review of Financial Studies, 21(2) 785–818. doi:10.1002/9781118467411.ch7
- Bretschneider, U., & Leimeister, J. M. (2017). Not just an ego-trip: Exploring backers' motivation for funding in incentive-based crowdfunding. The Journal of Strategic Information Systems, 26(4), 246–260.doi:10.1016/j.jsis.2017.02.002
- Brown, D. C., & Davies, S. W. (2015). Equity Crowdfunding: Harnessing the Wisdom of the Crowd. SSRN Electronic Journal. doi:10.2139/ssrn.2692828
- Cholakova, M., & Clarysse, B. (2015). Does the possibility to make equity investments in crowdfunding projects crowd out reward-based investments? Entrepreneurship: Theory and Practice, 39(1), 145–172.
- "How Many Exits Have There Been from Equity Investments Made through Crowdcube?" *Help Centre*, help.crowdcube.com/hc/en-us/articles/115000038984-How-many-exits-have-there-been-from-equity-investments-made-through-Crowdcube-.
- Darian M. Ibrahim, Equity Crowdfunding: A Market for Lemons, 100 Minn. L. Rev. 561 (2015) Delmar, F., & Shane, S. (2006). Does experience matter? The effect of founding team experience on the survival and sales of newly founded ventures. Strategic Organization, 4(3), 215–247.doi:10.1177/1476127006066596
- Dominika P.Galkiewicz and Michal Galkiewicz. 2018. "Crowdfunding Monitor 2018"
- Dorfleitner, G., Kapitz, J., & Wimmer, M. (2014). Crowdinvesting als Finanzierungs-alternative für kleine und mittlere Unternehmen. Die Betriebswirtschaft, 74(5), 283.
- Financial Conduct Authority (2018)
- Grossman, S., & Stiglitz, J. (1980). On the Impossibility of Informationally Efficient Markets. The American Economic Review, 70(3), 393-408. Retrieved from http://www.jstor.org/stable/1805228
- Grüner, H. P. & Siemroth, C. (2016). Crowdfunding, efficiency, and inequality. Journal of the European Economic Association, available at https://ssrn.com/abstract=2886401.
- Hakenes, H., & Schlegel, F. (2014). Exploiting the Financial Wisdom of the Crowd --Crowdfunding as a Tool to Aggregate Vague Information. SSRN Electronic Journal. doi:10.2139/ssrn.2475025
- Hervé, F., Manthé, E., Sannajust, A., & Schwienbacher, A. (2017). Determinants of Individual Investment Decisions in Investment-Based Crowdfunding. SSRN Electronic Journal . doi:10.2139/ssrn.2746398
- Hornuf, L., & Schmitt, M. (2017). Equity Crowdfunding in Germany and the UK: Follow-Up Funding and Firm Survival. SSRN Electronic Journal .doi:10.2139/ssrn.3020820
- "First Round 10 Year Project." First Round 10 Year Project, 10years.firstround.com/.

- "The Deal: Equity Investment in Fast-Growing Companies." Beauhurst, about.beauhurst.com/research/the-deal/.
- Kaniel, R., & Parham, R. (2015). WSJ Category Kings The Impact of Media Attention on Consumer and Mutual Fund Investment Decisions. SSRN Electronic Journal. doi:10.2139/ssrn.2556627
- Marino, K. E., & De Noble, A. F. (1997). Growth and early returns in technology-based manufacturing ventures. The Journal of High Technology Management Research, 8(2), 225–242. doi:10.1016/s1047-8310(97)90004-3
- Miglo, A., & Miglo, V. (2018). Market imperfections and crowdfunding. Small Business Economics. doi:10.1007/s11187-018-0037-1
- Mochkabadi, K., & Volkmann, C. K. (2018). Equity crowdfunding: a systematic review of the literature. Small Business Economics. doi:10.1007/s11187-018-0081-x
- Mohammadi, A., & Shafi, K. (2017). Gender differences in the contribution patterns of equity-crowdfunding investors. Small Business Economics, 50(2), 275–287. doi:10.1007/s11187-016-9825-7
- Mokhtarrudin, A., Masrurah, I. M. K., & Muhamad, S. C. R. (2017). Crowdfunding as a funding opportunity for youth start-ups in Malaysia. Pertanika Journal of Social Sciences & Humanities, 25, 139–154.
- Mollick, E., & Robb, A. (2016). Democratizing Innovation and Capital Access: The Role of Crowdfunding. California Management Review, 58(2), 72–87. doi:10.1525/cmr.2016.58.2.72
- Nascimento, M., & Querette, E. (2013). Crowdfunding: challenges and alternatives to financing the innovative entrepreneurship in Brazil. Paper presented at the 3rd Conference of the International Consortium of Studies on Innovation and Entrepreneurship, November, Rio de Janeiro, Brazil.
- Nitani, M., & Riding, A. (2017). On Crowdfunding Success: Firm and Owner Attributes and Social Networking. SSRN Electronic Journal .doi:10.2139/ssrn.2945081
- Peress, J. (2014). The Media and the Diffusion of Information in Financial Markets: Evidence from Newspaper Strikes. The Journal of Finance, 69(5), 2007–2043. doi:10.1111/jofi.12179
- Signori, A., & Vismara, S. (2016). Returns on Investments in Equity Crowdfunding. SSRN Electronic Journal . doi:10.2139/ssrn.2765488
- Sirri, E. R. & Tufano, P. (1998) Costly Search and Mutual Fund Flows. The Journal of Finance, 53(5), 1589-1622.
- Song, M., Podoynitsyna, K., Van Der Bij, H., & Halman, J. I. M. (2007). Success Factors in New Ventures: A Meta-analysis*. Journal of Product Innovation Management, 25(1), 7–27.doi:10.1111/j.1540-5885.2007.00280.x
- Vismara, S. (2018). Information Cascades among Investors in Equity Crowdfunding. Entrepreneurship Theory and Practice, 42(3), 467–497. doi:10.1111/etap.12261
- $Wall meroth, J.~(2016).~Investor~Behavior~in~Crowdinvesting.~SSRN~Electronic~Journal~.\\ doi:10.2139/ssrn.2881394$
- Wooldridge, J.M. (2009). Introductory Econometrics: A modern Approach. Ed. 4.

Appendix

Table of correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) status	1.000															
(2) amnt_raised	0.184	1.000														
(3) amnt_target	0.142	0.909	1.000													
(4) equity	-0.072	-0.044	-0.048	1.000												
(5) nmbr_investors	0.177	0.610	0.305	-0.115	1.000											
(6) loc	0.093	0.046	-0.015	-0.066	0.147	1.000										
(7) media_cov	0.213	0.578	0.440	-0.083	0.611	0.019	1.000									
(8) ceo_gender	-0.013	0.045	0.062	-0.027	-0.030	-0.078	0.014	1.000								
(9) ceo_industry_exp	0.042	0.018	0.041	-0.071	-0.044	-0.036	-0.032	0.064	1.000							
(10) ceo_startup_exp	-0.001	0.132	0.144	-0.093	0.026	0.098	0.006	0.174	0.076	1.000						
(11) co_founder	-0.003	0.103	0.081	-0.007	0.037	-0.003	0.131	-0.093	-0.022	-0.010	1.000					
(12) age_years	0.034	0.182	0.080	-0.230	0.293	-0.035	0.176	-0.046	0.068	-0.087	0.073	1.000				
(13) service	0.060	0.066	0.109	-0.063	-0.073	-0.051	-0.047	0.062	0.204	0.057	-0.047	-0.088	1.000			
(14) it_techn	-0.058	0.066	0.041	-0.139	0.057	0.002	0.028	0.102	0.006	0.026	-0.006	0.031	-0.310	1.000		
(15) food_drink_rest	-0.058	-0.047	-0.072	0.189	0.054	0.095	0.055	-0.118	-0.233	-0.039	0.038	-0.053	-0.329	-0.373	1.000	
(16) manuf_retail	0.063	-0.081	-0.070	0.006	-0.043	-0.053	-0.045	-0.040	0.044	-0.022	-0.006	0.112	-0.273	-0.335	-0.355	1.000

CEU eTD Collection

Table 4. Probit regression. Marginal Effects at the Means.

1 able 4. Probit regression	Table 4. Probit regression. Marginal Effects at the Means.								
	(1)	(2)	(3)	(5)					
VARIABLES	Model 1	Model 2	Model 3	Model 4					
media_cov	0.0240**	0.0248**	0.0262**	0.0282**					
	(0.0107)	(0.0108)	(0.0110)	(0.0112)					
lnmbr_investors	0.102**	0.0991**	0.0994*	0.0954*					
	(0.0496)	(0.0500)	(0.0509)	(0.0511)					
ceo_industry_exp	0.0532	0.0175	0.0250	0.0232					
	(0.0605)	(0.0631)	(0.0636)	(0.0636)					
ceo_startup_exp	-0.0363	-0.0338	-0.0483	-0.0451					
	(0.0599)	(0.0602)	(0.0614)	(0.0617)					
year_2014	0.274***	0.284***	0.290***	0.301***					
	(0.0886)	(0.0896)	(0.0905)	(0.0910)					
year_2015	0.258***	0.291***	0.276***	0.306***					
	(0.0900)	(0.0919)	(0.0929)	(0.0962)					
it_techn		-0.153*	-0.153*	-0.156*					
		(0.0881)	(0.0884)	(0.0887)					
food_drink_rest		-0.159*	-0.160*	-0.165*					
		(0.0893)	(0.0913)	(0.0914)					
manuf_retail		-0.0111	-0.00615	-0.00856					
		(0.0905)	(0.0919)	(0.0921)					
equity			-0.00160	-0.00162					
			(0.00399)	(0.00398)					
loc			0.0814	0.0791					
			(0.0625)	(0.0625)					
age_years			-0.00751	-0.00670					
			(0.0142)	(0.0143)					
ceo_gender				-0.0319					
				(0.0875)					
co_founder				-0.0840					
				(0.0622)					
				· , , , , , , , , , , , , , , , , , , ,					
Observations	261	261	261	261					
	(1)	(2)	(3)	(5)					

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Dependent variable is *status*. The estimation method is probit, where coefficients represent marginal effects at the average . The specification in the first column controls for years' effect. The second column is similar to the first, but I also control for the industry effect. In the third column, in addition to previous control variables, I also account for offering and firm specific factors. The fourth model also controls for CEO/founder specific factors.