Finance Research Letters 52 (2023) 103370

Contents lists available at ScienceDirect

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

Social media marketing for equity crowdfunding: Which posts trigger investment decisions?☆

Maik Eisenbeiss [a], Sven A. Hartmann [b], Lars Hornuf [c,*]

[a] University of Bremen, markstones Institute of Marketing, Branding & Technology, Faculty of Business Studies and Economics, Max-von-Laue-Straße 1, 28359 Bremen, Germany
[b] Institute for Labour Law and Industrial Relations in the European Union, Trier University, Behringstraße 21, 54296 Trier, Germany
[c] University of Bremen, Faculty of Business Studies and Economics, Max-von-Laue-Straße 1, 28359 Bremen, Germany

ARTICLE INFO

JEL classification:
G11
G20
M13

Keywords:
Equity crowdfunding
Entrepreneurial finance
Social media
Investor communication

ABSTRACT

Based on 26,883 investment decisions, we examine the influence of social media marketing on crowd participation in equity crowdfunding. We distinguish between different types of informative and persuasive posts on Facebook and Twitter. Informative posts provide investors with information about the crowdfunding campaign; persuasive posts do not, but rather aim to directly influence an investor's decision-making process. We find that both types of posts have a positive impact on the number of investments. However, persuasive posts also increase the amount of an investment if they contain a statement about the previous investment success of the campaign and signal to the crowd that they are not investing alone.

"*Now is the time! Our crowdfunding is still open for your investment!*"
Post on Twitter during the Fraisr Campaign on Seedmatch

1. Introduction

Signaling theory suggests that if information is asymmetrically distributed between entrepreneurs and investors, the entrepreneur can deliberately send effective signals to investors to ensure them that she is of high quality. To be effective, these signals must be observable and costly, because otherwise they could easily be faked or imitated by low-quality competitors. In equity crowdfunding, in which a large group of investors supports a startup over the Internet, information asymmetries are particularly high, given the rarity of on-site screening and due diligence (Hornuf et al., 2022). Thus, entrepreneurs often send effective signals via their project page on the equity crowdfunding platform, which acts as a gatekeeper and creates a trustworthy signaling environment (Block et al., 2018). However, the gatekeeper function largely falls away when startups use social media platforms such as Facebook or Twitter to promote their crowdfunding campaigns.

Assuming that potential investors need credible and diagnostic information before investing in crowdfunding campaigns, the use of social media marketing seems less than promising at first glance. However, startups also target different types of investors; for example, less sophisticated investors who may primarily use intuition in making their investment decisions (Agarwal and

☆ The authors thank the two anonymous referees, Denis Schweizer, Isabel María Parra Oller, the participants in the workshop "Fintech (R)evolution: From Disruption to Innovation", and the European Alternative Finance Research Conference 2022 for their helpful comments and suggestions. This article evolved as part of the research project "Crowdinvesting in Germany, England and the USA: Regulatory Perspectives and Welfare Implications of a New Financing Scheme", which was supported by the German Research Foundation (Deutsche Forschungsgemeinschaft) under grant number HO 5296/1-1.

* Corresponding author.
E-mail addresses: eisenbeiss@uni-bremen.de (M. Eisenbeiss), hartmann@iaaeu.de (S.A. Hartmann), hornuf@uni-bremen.de (L. Hornuf).

https://doi.org/10.1016/j.frl.2022.103370
Received 2 August 2022; Received in revised form 14 September 2022; Accepted 21 September 2022
Available online 27 September 2022

Ambrose, 2018; Hornuf et al., 2022; Snow and Rasso, 2017). As the Twitter post by Fraisr above suggest, social media posts promoting crowdfunding campaigns do not always entail effective signals in the spirit of Spence (1973). Recent research has shown that even non-informative social media content can—under certain circumstances—have a positive influence on investment decisions (Bertrand et al., 2010; Madsen and Niessner, 2019; Tsai and Honka, 2021). Equity crowdfunding provides an ideal environment to study the impact of social media content on investment decisions as investors are targeted through social media. We investigate which content startups post on social media platforms, and whether and how their posts impact on crowd participation during an equity crowdfunding campaign.

The marketing literature ascribes two main functions to advertising: an informative function and a persuasive function (Santilli, 1983; Tsai and Honka, 2021). The informative function is to provide consumers with information about products so that they can make reasoned purchase decisions. The persuasive function, on the other hand, pertains to changing consumer preferences without necessarily providing decision-relevant information (Bertrand et al., 2010).

In crowdfunding practice, startups use informative posts and persuasive posts when promoting their campaigns on social media platforms. The content of informative posts is comparable to the content typically published on crowdfunding platforms, such as the funding limit, the development of the campaign, or basic information about the startup's business model. For example: "New sales expert on board: @fraisr strengthens its sales team with Ex-Daily Deal Key Account Manager!" By contrast, persuasive posts do not contain any specific information about the crowdfunding campaign or the startup itself. They are primarily aimed at directly influencing the cognitive stages an investor goes through during the decision processes, such as creating awareness, interest, desire, and purchase intentions for the startup, the campaign, and its products (Lavidge and Steiner, 1961; Tsai and Honka, 2021). The specific configurations of these posts can be quite diverse, ranging from a call to action (e.g., to invest in the startup or to purchase its products) to posts that are primarily intended to build a relationship with potential and existing investors. For example: "Do you want to participate in the success of interactive audio dramas? Then invest in Audiogent now!"

Persuasive posts often contain what are called heuristic cues, which are intended to elicit investment decisions (Grewal et al., 1996). According to the information processing literature (e.g., Chaiken, 1980; Petty and Cacioppo, 1986), these cues operate on the assumption that consumers are not always motivated to process information systematically, but instead rely on heuristics to make inferences about the attractiveness of advertised objects (Eisenbeiss et al., 2015). Heuristic decision behavior is especially likely when the decision period is limited (Coulter and Roggeveen, 2012), as is naturally the case with crowdfunding campaigns. A long stream of research has identified a number of heuristic cues that impact consumer value perceptions. Among those used particularly frequently in social media marketing of crowdfunding campaigns are *selling history* and *time limit*.

The selling history represents a statement about previous demand, for example in terms of previous shares sold or the number of previous investors. The marketing literature argues that consumers tend to use these cues as a heuristic to assess the quality or value of an object (Dean and Lang, 2008; Hellofs and Jacobson, 1999). Thus, the greater the previous demand, the more positive the assessment of an object. This is also why firms like Amazon, Best Buy, Circuit City, and Costco make bestseller information available to consumers. Applied to equity crowdfunding, the presence of a selling history cue in a persuasive post may serve as a form of social validation for the crowdfunding campaign, which signals to regular crowd investors an attractive investment opportunity (Coulter and Roggeveen, 2012). Examples of persuasive posts including a selling history cue include: "422 #microinvestors convinced by @swabr. Now take the last opportunity for #crowdinvesting on @Companisto" and "Our #crowdinvesting on @Companisto: 326 people invest €45,200 and 38 days remain. Secure shares now".

A time limit presents a special type of purchase constraint by limiting an offer's availability (Inman et al., 1997). Previous research has argued that consumers use unavailability or limited availability as a heuristic cue that the object is scarce (Coulter and Roggeveen, 2012). Scarcity typically induces action by playing upon consumers' fear of missing out on an attractive offer (Cialdini, 2007; Coulter and Roggeveen, 2012). Accordingly, previous studies have shown that time limits accelerate purchases, decrease the likelihood of searching for better alternatives, and lead to greater willingness to buy (Aggarwal and Vaidyanathan, 2003; Eisenbeiss et al., 2015; Inman et al., 1997). Moreover, psychological research has suggested that "people find objects and opportunities more attractive to the degree that they are scarce, rare, or dwindling in availability" (Cialdini, 1999, p. 92). Examples from equity crowdfunding campaigns include: "The countdown is on - seven days left! Until then, you can still invest in our campaign on Companisto" and "Today last chance - Secure your shares now! Here you can find the auction".

In summary, our theoretical considerations suggest that not only informative but also persuasive social media posts have an impact on investment decisions during an equity crowdfunding campaign. In the context of persuasive posts, the presence of selling history and time limit cues could be of particular importance. Below, we investigate whether and to what extent our expectations can be confirmed empirically through empirical analysis of investment decisions on three large German equity crowdfunding platforms.

2. Method

2.1. Data

We analyze 26,883 investment decisions representing a funding volume of €18.56 million, which we hand-collected from November 6, 2011, to August 28, 2014, from the equity crowdfunding platforms Companisto, Innovestment, and Seedmatch. In line with Block et al. (2018) and Hornuf and Schwienbacher (2018), we aggregate the investments that a startup received on a single day. We thus get a panel data structure with the duration of the campaign in days as the time dimension, while the cross-sectional dimension relates to the campaigns. We further collected 2583 Twitter and 1816 Facebook posts for the startups in our sample during and seven days before the start of the respective campaign.[1]

[1] For simplicity, we pool the information from Facebook and Twitter posts in our empirical analysis.

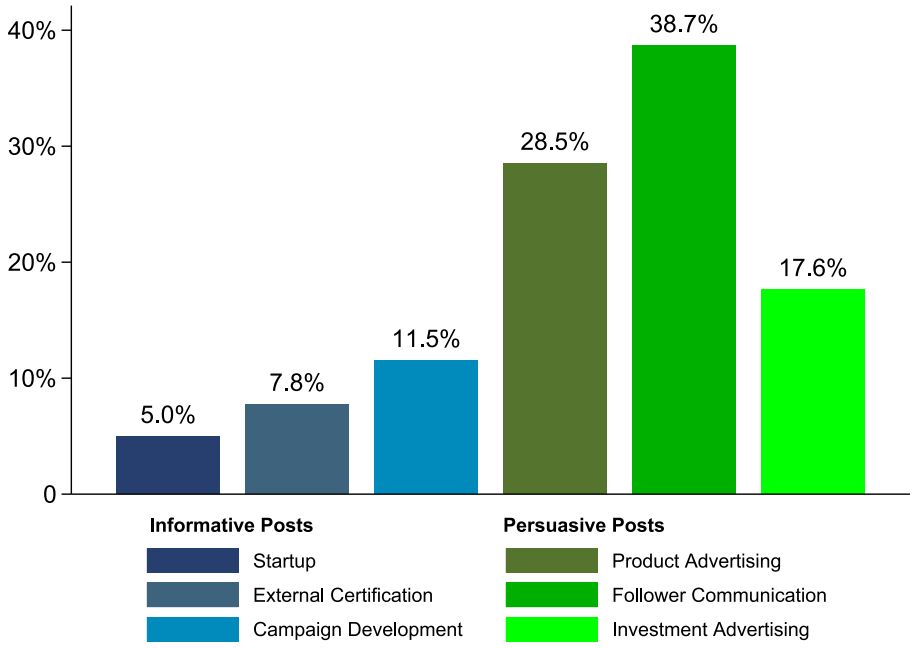

Fig. 1. Distribution of social media posts across the individual content categories. Note: This figure presents the distribution of the 4399 social media posts across the individual content categories. Because one post can contain content instantiating multiple categories, the sum of the individual shares is greater than 100 percent.

2.2. Variables

Following Block et al. (2018), we use three distinct but complementary dependent variables to operationalize investment decisions in a relatively broad way: the number of investments per day as a measure of crowd participation (*Investments(#)*), the funding volume on a given day (*Amount(€)*), and the average investment amount per day (*Avg. amount(€)*) to capture the magnitude of an investment.

To investigate which social media posts affect investment decisions, we first classify posts into informative or persuasive posts based on their content. For a more nuanced analysis, we further distinguish between different manifestations of informative and persuasive posts. Within the informative posts, we differentiate between the categories *Startup*, *External Certification*, and *Campaign Development*.[2] While all informative posts provide information that investors might consider relevant for decision-making, they differ in the nature of the information. Within the persuasive posts, we distinguish between *Product Advertising*, *Investment Advertising*, and *Follower Communication*. While all persuasive posts aim to influence investment decisions, the main differences among them are in the way the influence is exercised. Table A.1 in the Appendix contains variable definitions and Table A.2 provides coding examples. Fig. 1 shows the distribution of all posts in our dataset across the six categories. In our dataset, more than 82% of all posts on social media contain persuasive content. For each of the six categories, we calculate the percentage of posts per startup that fall into the category on a given day. For example, if a startup publishes ten posts in one day and two of them fall into the investment advertising category, the *Investment Advertising* variable takes the value 0.2.

In addition, we document whether startups use selling history and time limit cues in their investment advertising posts. We find that around 15.8% of all investment advertising posts contain selling history cues and 13.0% include time limits.[3] To analyze the impact of cues on investment decisions, we create the two variables *Selling History* and *Time Limit*, each indicating the proportion of investment advertising posts that contain the respective cues.

To control for media weight (Macinnis et al., 2002), we generate the variable *#Posts*, which measures the number of social media posts by a startup on a given day. In addition, we take into account the number of social media posts published by competing campaigns on the same day. We also include the number of active campaigns and the total number of investments across all competing campaigns on the same day. Furthermore, we consider a dummy variable that equals one if the funding goal of the campaign has been reached, and control for the number of investments and the investment amount that a startup obtained up to

[2] Note that we also searched for other categories of informative posts as classified by Block et al. (2018). However, these categories are of limited relevance to the posts in our study. Therefore, we consolidated the categories Team (2.2%), Business Model (0.3%), Product Development (0.6%), Cooperation Projects (1.0%), New Funding (0.05%), and Business Development (0.9%) under the label *Startup*.

[3] In addition, we investigated whether startups use quantity limits or sales promotion cues in their investment advertising. However, both cues play a minor role and appear in only 2.4% (quantity limits) and 1.9% (sales promotion) of all investment advertising posts.

Table 1
Descriptive statistics for campaign-day observations.

	Mean	sd	min	max	Count
Crowdfunding campaign data					
Investments (#)	6.62	21.97	0	579	3887
Amount (€)	4386.85	22 622.79	0	869 000	3887
Ln(Amount (€))	5.22	3.60	0	14	3887
Avg. Amount (€)	674.23	2065.41	0	50 000	3887
Ln(Avg. Amount (€))	4.23	2.91	0	11	3887
Duration	64.82	33.76	2	126	3887
Funding Goal	47 834.22	22 469.96	25 000	150 000	3887
$\text{Ln(Amount)}_{0\to t-1}$	10.82	2.11	0	14	3891
$\#\ \text{Investments}_{0\to t-1}$	273.35	346.29	0	1981	3891
Post Funded	0.68	0.47	0	1	3887
Active Campaigns	5.91	2.98	1	12	3887
Competing Investments	36.42	57.55	0	1122	3887
Social media data					
#Posts	0.96	2.09	0	43	3887
Competing posts	2.36	4.35	0	59	3887
Startup	0.02	0.12	0	1	3887
External Certification	0.03	0.16	0	1	3887
Campaign Development	0.04	0.18	0	1	3887
Product Advertising	0.12	0.29	0	1	3887
Investment Advertising	0.05	0.19	0	1	3887
Follower Communication	0.13	0.30	0	1	3887
Time Limit	0.01	0.11	0	1	3887
Selling History	0.02	0.14	0	1	3887

Note: This table presents descriptive statistics (mean, standard deviation, minimum, and maximum) for the 3887 campaign-day observations.

the previous day. Finally, we include dummies for two of the three crowdfunding platforms, as well as for day of the week and month of the year. Table 1 presents descriptive statistics for the 3887 campaign-day observations. The type of startups and investors in our sample is very similar to those examined in other published articles (e.g., Block et al. (2018), Hornuf and Schwienbacher (2018), and Hornuf et al. (2022)).

3. Results

We present our regression results in Table 2. Columns (1) and (2) present the results of fixed-effects negative binomial regressions with the number of investments as dependent variable. We report incident rate ratios, which can be interpreted as multiplicative effects. Columns (3) to (6) show the results from OLS fixed effects regressions with the funding volume on a given day and the average investment amount per day as dependent variables, which have been log-transformed, respectively.

Our findings indicate that informative social media posts positively affect the number of investments. While the effect for *Campaign Development* occurs on the same day, social media posts containing external certification or information about the startup have an effect with a delay of one day.[4] If the share of campaign development posts increases by 10 percentage points, the number of investments would increase by 2.2% ($p < 0.05$). In this respect, social media posts also differ from updates on crowdfunding platforms, where no immediate effects have been identified on the same day (Block et al., 2018). Posts on social media platforms apparently offer startups a tool to reach the crowd in a timelier manner. One reason for this is that potential investors might unintentionally obtain information about the equity crowdfunding campaign on social media, while they only receive updates on crowdfunding platforms if they actively search for them on the platforms' websites.

When analyzing the impact of persuasive posts, we find that the two content categories, *Product Advertising* and *Follower Communication*, do not affect investment decisions. However, persuasive posts in the form of investment advertising exert highly significant and positive effects on the number of investments. If the share of investment advertising posts increases by 10 percentage points, the number of investments would increase by 3.6% ($p < 0.01$) on the same day and 2.8% on the following day ($p < 0.05$). Thus, *Investment Advertising* has a considerably stronger overall effect on the number of investments than any type of informative posts. In other words, when investors are attracted by social media marketing, it is not so much through information as it is through intentional persuasion.

[4] Our results show that social media posts have no effect on crowd participation after four days.

Table 2
The effect of social media posts on crowd participation.

Dependent variables	Investments (#)		Ln(Amount (€))		Ln(Avg. Amount (€))	
	Model 1 None	Model 2 1 day	Model 3 None	Model 4 1 day	Model 5 None	Model 6 1 day
Explanatory variables (lags according to table head)						
Informative content categories:						
Startup	1.103	1.275*	0.363	0.387	0.220	0.187
	(0.104)	(0.169)	(0.295)	(0.359)	(0.262)	(0.342)
External Certification	0.999	1.220**	−0.064	0.340	−0.014	0.310
	(0.064)	(0.120)	(0.261)	(0.229)	(0.234)	(0.205)
Campaign Development	1.220**	1.104	−0.071	0.147	−0.354	0.049
	(0.104)	(0.104)	(0.316)	(0.243)	(0.260)	(0.217)
Persuasive content categories:						
Product Advertising and Promotions	1.079	1.033	0.295*	0.033	0.243	0.052
	(0.067)	(0.054)	(0.174)	(0.173)	(0.170)	(0.162)
Follower Communication	1.045	1.040	0.018	−0.086	0.025	−0.061
	(0.071)	(0.064)	(0.165)	(0.206)	(0.141)	(0.177)
Investment Advertising	1.356***	1.282**	0.182	0.171	−0.007	0.021
	(0.130)	(0.124)	(0.368)	(0.202)	(0.352)	(0.184)
Investment advertising cues:						
Time Limit (share)	0.949	0.989	0.120	−0.469	0.004	−0.497
	(0.156)	(0.152)	(0.605)	(0.549)	(0.519)	(0.483)
Selling History (share)	1.108	1.026	1.255***	1.200***	1.186***	1.140***
	(0.093)	(0.143)	(0.434)	(0.289)	(0.418)	(0.299)
# Posts	0.997	0.995	−0.069**	−0.007	−0.068**	−0.018
	(0.012)	(0.011)	(0.033)	(0.043)	(0.027)	(0.037)
Control variables (no lags included)						
$\text{Ln(Amount}_{0\rightarrow t-1})$	1.229***	1.237***	0.319**	0.336**	0.293**	0.319**
	(0.064)	(0.066)	(0.143)	(0.147)	(0.138)	(0.140)
$\#\text{Investments}_{0\rightarrow t-1}/100$	0.883***	0.880***	−0.370***	−0.352***	−0.155***	−0.137***
	(0.039)	(0.038)	(0.075)	(0.074)	(0.051)	(0.051)
Post Funded	1.016	0.988	0.179	0.152	0.223	0.192
	(0.146)	(0.141)	(0.342)	(0.345)	(0.281)	(0.281)
Active Campaigns	1.011	1.013	−0.039	−0.035	−0.036	−0.032
	(0.026)	(0.027)	(0.050)	(0.051)	(0.039)	(0.039)
Competing Investments	1.002***	1.002***	0.003***	0.002**	0.001	0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Competing Posts	0.993	0.994	−0.008	−0.007	−0.004	−0.003
	(0.007)	(0.008)	(0.016)	(0.016)	(0.013)	(0.013)
Fixed effects						
First and last seven days	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-week	Yes	Yes	Yes	Yes	Yes	Yes
Month-of-year	Yes	Yes	Yes	Yes	Yes	Yes
Portal	Yes	Yes	Yes	Yes	Yes	Yes
Campaign	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	−7789.900	−7800.899	−9311.197	−9312.584	−8943.732	−8944.752
Observations	3887	3887	3887	3887	3887	3887

Note: The dependent variable in columns (1) and (2) is the number of investments, in columns (3) and (4) the Ln(Amount) of investments, and in columns (5) and (6) the Ln(Avg. amount) of investments in a specific campaign and day. The data takes a panel data structure. To account for unobserved campaign characteristics, such as the design and content of the initial campaign page or the sector, business model, and other information about the startup, we estimate fixed effects models. The method of estimation in columns (1) and (2) is the negative binomial fixed effects panel estimator and in columns (3) to (6) the OLS fixed effects panel estimator. Because most investors might invest relatively early during a campaign, we a vector of dummy variables for the first and last seven days of a campaign (*First and last seven days*). To account for general time trends, we further consider vectors of dummy variables for the day-of-week (*Day-of-week*) and month-of-year (*Month-of-year*). To account for portal characteristics, we include a vector of dummy variables (*Portal*). Standard errors are shown in parentheses.
Significance levels:
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

The results also show highly significant and positive effects of *Selling History* on both the funding volume and the average investment amount per day. If the share of selling history posts increases by 10 percentage points, the funding volume would increase

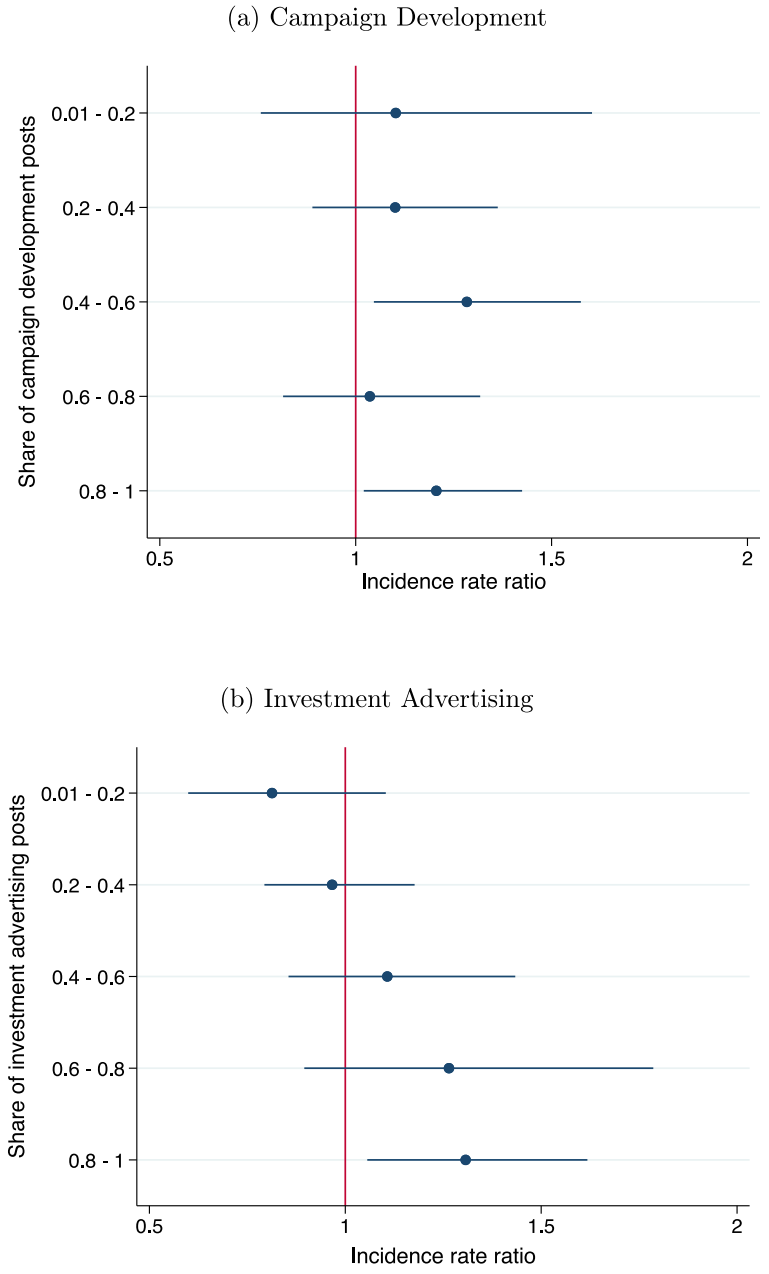

Fig. 2. Impact of social media posts on crowd participation. Note: The estimates are based on specification (1) from Table 2.

by 25.1%[5] ($p < 0.01$) on the same day and 23.2% on the following day ($p < 0.01$); the average investment amount would increase by 22.7% ($p < 0.01$) on the same day and 21.3% ($p < 0.01$) on the following day. According to our theoretical considerations, investors use a selling history cue as a form of social validation for investing larger amounts. Interestingly, this is the only post category with a significant effect on the magnitude of investments, while other post categories only increase the number of investments.

Finally, when testing for a non-linear relationship for the variables that turn out to be significant predictors of campaign success, Fig. 2 shows that no such non-linear relationship exists for the number of investments. If anything, a higher number of investment advertising posts increases the number of investments. However, if we include a squared term of *Selling History* in columns (3) and (5), the resulting point estimates are both significant (both $p < 0.05$), suggesting that the optimum share of selling history cues per day is 57.4% and 58.9%.

[5] Calculated as $e^{1.255} - 1 = 250.8\%$ for a 100-percentage-point increase in selling history posts.

4. Conclusion

This article studies the impacts of social media posts on investment decisions in equity crowdfunding. Based on hand-collected investment data from three large German equity crowdfunding platforms, we draw three main conclusions: First, effective signals via informative posts are relatively rare, but increase the number of investments in a crowdfunding campaign. Particularly effective informational posts are those that provide either information about campaign development or external certifications. Second, persuasive posts are more common, although they are only effective if they also directly promote the crowdfunding campaign through investment advertising. Other manifestations such as product advertising or follower communication remain ineffective. Third, investment advertising works particularly well in social media marketing if it includes a statement about the campaign's previous investment success, signaling to the crowd that they are not investing alone. In these ways, startups can effectively promote the number of investments and investment amounts through social media.

CRediT authorship contribution statement

Maik Eisenbeiss: Conceptualization, Writing – original draft. **Sven A. Hartmann:** Conceptualization, Formal analysis, Investigation, Data curation, Writing – original draft. **Lars Hornuf:** Conceptualization, Methodology, Investigation, Writing – original draft, Supervision, Project administration, Funding acquisition.

Data availability

Data will be made available on request.

Appendix

See Tables A.1 and A.2.

Table A.1
List and definition of variables.

Variables	Definition
Investments (#)	The number of investments made by crowd investors on day t in campaign i.
Amount (€)	The amount in Euros invested by crowd investors on day t in campaign i.
Ln(Amount (€))	The natural logarithm of the amount in EUR invested by crowd investors on day t in campaign i.
Ln(Avg. Amount (€))	The natural logarithm of the average amount in EUR invested by crowd investors on day t in campaign i.
Duration	The number of days elapsed from the start until the end of a campaign.
Post Funded	Dummy variable equal to 1 if the campaign has surpassed the Funding Goal, and 0 otherwise.
Funding Goal	The minimum funding goal as defined by the startup and portal at $t = 0$.
Active Campaigns	The total number of campaigns across three major and one minor German equity crowdfunding portal (Seedmatch, Companisto, Innovestment, and United Equity) accepting investments on day t.
Competing Investments	The total number of investments made on day t across all campaigns run on three major German equity crowdfunding portals (Seedmatch, Companisto, and Innovestment) that were not attracted by campaign i.
$\text{Ln(Amount)}_{0\rightarrow t-1}$	The natural logarithm of the total amount of money in EUR invested by the crowd until the previous day in campaign i.
$\#\ \text{Investments}_{0\rightarrow t-1}$	The total number of investments made by the crowd until the previous day in a particular campaign.
#Posts	The number of social media posts by the startup on day t in campaign i.
Competing Posts	The number of social media posts on day t made by all startups that ran campaigns on three major German equity crowdfunding portals (Seedmatch, Companisto, and Innovestment) on day t except posts by startup i.
Startup	The share of posts containing information about the startup in relation to the total number of posts in campaign i on day t. These post include information about the entrepreneurial team, the business model, product development, new collaborations, new funding, or business development.
External Certification	The share of posts including external certification in relation to the total number of posts in campaign i on day t. External certification includes, for example, expert opinions, success stories, news about awards received, patent applications, and patent approvals, as well as press and media coverage about the startup.
Campaign Development	The share of posts including information about the crowdfunding campaign and its development in relation to the total number of posts in campaign i on day t.
Product Advertising	The share of posts including product advertising and promotions in relation to the total number of posts in campaign i on day t.
Investment Advertising	The share of posts including investment advertising in relation to the total number of posts in campaign i on day t.
Follower Communication	The share of posts containing other social media content such as invitations for personal meetings, sharing information on related topics, or updated profile pictures in relation to the total number of posts in campaign i on day t.
Time Limit	The share of investment advertising posts that include time limit cues in relation to the total number of investment advertising posts in campaign i on day t. Time limit cues contain information that the purchase of shares is limited in time.
Selling History	The share of investment advertising posts that include selling history cues in relation to the total number of investment advertising posts in campaign i on day t. Selling history cues contain information about previous demand (e.g., shares sold) in the crowdfunding campaign

Table A.2
Definition and examples of social media post coding.

Coding of posts	Examples
Startup: The post contains information about the startup. These include information about the entrepreneurial team, the business model, product development, new collaborations, new funding, or business development.	(a) "New sales expert on board: @fraisr strengthens its sales team with Ex-Daily Deal Key Account Manager!" (b) "Business angels invest six-figure sum in *Meine-Spielzeugkiste*! - Check it out!" (c) "It is a great pleasure for us to introduce to you today a new, important cooperation partner of ours: Lobetaler Bio. With their fantastic quality and strong social commitment, they have more than convinced us."
External Certification: The post includes external certification such as expert opinions, success stories, news about awards received, patent applications, and patent approvals, as well as press and media coverage about the startup.	(a) "BetterTaxi was voted App of the Week at telefon.de!" (b) "VentureCapital magazine has now also reported on Companisto in its print edition. I wonder if this has something to do with the fact that the online article about Companisto was the most clicked news item in June..." (c) "We are now in the Wall Street Journal Germany! What do you think?"
Campaign Development: The post includes information about campaign updates or announcements that the funding limit has been changed.	(a) "Yeah! Thanks to you we have reached the minimum threshold!" (b) "Fundinglimit at Seedmatch increased to €300.000 – join us and invest in the future of nuts" (c) "The funding threshold for the @OvulaRing has just been reached: http://t.co/F0WPJdXqdr Congratulations to the team!"
Product Advertising: The post contains product advertising and promotions.	(a) "Book a tour with us until 31.03. and save up to 50%! More info on this at..." (b) "Now you can order your best movinary videos as DVD." (c) "Are you looking for sportswear that combines the special with the functional? Then take a look at the offers from..."
Investment Advertising: The posts includes investment advertising without providing specific information on the status of the corporate funding campaign.	(a) "Now is the time! Our crowdfunding is still open for your investment!" (b) "Time to join the other investors! Read more on..." (c) "Do you want to participate in the success of interactive audio dramas? Then invest in Audiogent now!"
Follower Communication: The post contains other social media content such as invitations for personal meetings, information on related topics, or updated profile pictures in relation to the total number of posts in campaign i on day t.	(a) "In this sense we wish you a good start into the week and a nice evening! ;)" (b) "The German women's handball team secured an important victory for the 2014 European Championship qualification! Despite..." (c) "Lottohelden.de wishes you a Merry #Christmas!"
Time Limit: The post contains information that the purchase of shares is limited in time.	(a) Today last chance - Secure your shares now! Here you can find the auction: http://t.co/2csGeOVW. Have a nice sunday :) (b) The countdown is on - seven days left! Until then, you can still invest in our campaign on Companisto. Never before have so many people participated in a cultural medium via crowdinvesting! (c) Only 4 days left...! Take your chance and participate in the success of #OvulaRing via #Crowdfunding.
Selling History: The post includes information about previous demand (e.g., shares sold) in the crowdfunding campaign.	(a) Crowdfunding already reached €150,000 ! Thank you for your investment in KERNenergie ! (b) Our #crowdinvesting on @Companisto: 326 people invest €45,200 and 38 days remain. Secure shares now. (c) 422 #microinvestors convinced by @swabr. Now take the last opportunity for #crowdinvesting on @Companisto.

References

Agarwal, Sumit, Ambrose, Brent W., 2018. The effect of advertising on home equity credit choices. In: Teitelbaum, Joshua C., Zeiler, Kathryn (Eds.), Research Handbook on Behavioral Law and Economics. Edward Elgar Publishing.

Aggarwal, Praveen, Vaidyanathan, Rajiv, 2003. Use it or lose it: Purchase acceleration effects of time-limited promotions. J. Consumer Behav.: Int. Res. Rev. 2 (4), 393–403.

Bertrand, Marianne, Karlan, Dean, Mullainathan, Sendhil, Shafir, Eldar, Zinman, Jonathan, 2010. What's advertising content worth? Evidence from a consumer credit marketing field experiment. Q. J. Econ. 125 (1), 263–306.

Block, Jörn, Hornuf, Lars, Moritz, Alexandra, 2018. Which updates during an equity crowdfunding campaign increase crowd participation? Small Bus. Econ. 50 (1), 3–27.

Chaiken, Shelly, 1980. Heuristic versus systematic information processing and the use of source versus message cues in persuasion. J. Personal. Soc. Psychol. 39 (5), 752–766.

Cialdini, Robert B., 1999. Of tricks and tumors: Some little-recognized costs of dishonest use of effective social influence. Psychol. Mark. 16 (2), 91–98.

Cialdini, Robert B., 2007. Influence: The Psychology of Persuasion. Collins New York.

Coulter, Keith S., Roggeveen, Anne, 2012. Deal or no deal? How number of buyers, purchase limit, and time-to-expiration impact purchase decisions on group buying websites. J. Res. Interact. Mark. 6 (2), 78–95.

Dean, Dwane H., Lang, Jane M., 2008. Comparing three signals of service quality. J. Serv. Mark. 22 (1), 48–58.

Eisenbeiss, Maik, Wilken, Robert, Skiera, Bernd, Cornelissen, Markus, 2015. What makes deal-of-the-day promotions really effective? The interplay of discount and time constraint with product type. Int. J. Res. Mark. 32 (4), 387–397.

Grewal, Dhruv, Marmorstein, Howard, Sharma, Arun, 1996. Communicating price information through semantic cues: The moderating effects of situation and discount size. J. Consum. Res. 23 (2), 148–155.

Hellofs, Linda L., Jacobson, Robert, 1999. Market share and customers' perceptions of quality: When can firms grow their way to higher versus lower quality? J. Mark. 63 (1), 16–25.

Hornuf, Lars, Schmitt, Matthias, Stenzhorn, Eliza, 2022. The local bias in equity crowdfunding: Behavioral anomaly or rational preference? J. Econ. Manage. Strategy 31 (3), 693–733.
Hornuf, Lars, Schwienbacher, Armin, 2018. Market mechanisms and funding dynamics in equity crowdfunding. J. Corp. Finance 50, 556–574.
Inman, J. Jeffrey, Peter, Anil C., Raghubir, Priya, 1997. Framing the deal: The role of restrictions in accentuating deal value. J. Consum. Res. 24 (1), 68–79.
Lavidge, Robert J., Steiner, Gary A., 1961. A model for predictive measurements of advertising effectiveness. J. Mark. 25 (6), 59–62.
Macinnis, Deborah J., Rao, Ambar G., Weiss, Allen M., 2002. Assessing when increased media weight of real-world advertisements helps sales. J. Mar. Res. 39 (4), 391–407.
Madsen, Joshua, Niessner, Marina, 2019. Is investor attention for sale? The role of advertising in financial markets. J. Account. Res. 57 (3), 763–795.
Petty, Richard E., Cacioppo, John T., 1986. The elaboration likelihood model of persuasion. In: Petty, Richard E., Cacioppo, John T. (Eds.), Communication and Persuasion: Central and Peripheral Routes to Attitude Change. Springer, New York, pp. 1–24.
Santilli, Paul C., 1983. The informative and persuasive functions of advertising: A moral appraisal. J. Bus. Ethics 2, 27–33.
Snow, Neal M., Rasso, Jason T., 2017. If The Tweet Fits: How Investors Process Financial Information Received Via Social Media. SSRN. working paper.
Spence, Michael, 1973. Job market signaling. Q. J. Econ. 87 (3), 355–374.
Tsai, Yi-Lin, Honka, Elisabeth, 2021. Informational and noninformational advertising content. Mark. Sci. 40 (6), 1030–1058.