

Success or failure in equity crowdfunding? A systematic literature review and research perspectives

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Abstract

Purpose – This paper aims to provide a multidisciplinary framework that allows an integrated understanding of reasons of success or failure in equity crowdfunding (ECF), a Fintech digital innovation of the traditional entrepreneurial finance, defining a future research agenda.

Design/methodology/approach – A systematic literature review (SLR) has been conducted on 127 documents extracted from two multidisciplinary repositories (Elsevier's Scopus and Clarivate Analytics Web of Science) for the period between 2015 and early 2022. After a systematized series of inclusion and exclusion criteria, in line with the objectives and conceptual boundaries, a final list of 32 peer-reviewed articles written in English was analyzed by the authors through a meta-synthesis and thematic analysis to identify the key themes and dominant concepts.

Findings – Results show that the body of literature is recent and fast growing. The proposed integrative framework of existing research indicates that the outcome of an ECF campaign is related to signals conveyed by entrepreneurs in the form of hard information (firm characteristics, financial information, business characteristics and project description) and soft information (intellectual capital, human capital, social capital and social media network), catalyzed by digital media that facilitate also personal interactions between entrepreneurs and investors. Similarly, external factors (investors and campaign characteristics, with the fundamental role of ECF platform managers in building trust between entrepreneurs and investors) allow for the alleviation of information asymmetries. The present study sheds light on which signal mechanisms are decisive in improving the outcome, taking into consideration various disciplines which follow different but complementary perspectives.

Practical implications – Entrepreneurs should adapt to the transition toward the digital era, exploiting alternative financial instruments and learning effective signaling strategies, within a large variety of skills requested. Platform managers can obtain more focused information on selected entrepreneurial projects more efficiently.

Originality/value – Although it is fast-growing, the field of research is very recent, still fragmented and limited to the perspective/discipline followed. This SLR is, to the best of the authors' knowledge, the first multidisciplinary and integrative analysis of reasons that motivates success, or failure, of an equity-based crowdfunding campaign. The digital nature of ECF encourages future research to move toward more pioneering and unconventional theories and research methods. Hence, the authors add to the existing literature by proposing future patterns of research based on an integration of highly technological skills and behavioral/psychological approaches.

Keywords Equity crowdfunding, Success, Systematic literature review, Entrepreneurship, Pecking order theory, Fintech, New ventures

Paper type Literature review



1. Introduction

Equity crowdfunding (hereafter ECF) is a recent phenomenon that leads entrepreneurial finance to take advantage of innovative digital facilities (Cumming *et al.*, 2019a), allowing ventures to obtain alternative financing: nascent entrepreneurs can raise capital from a crowd of investors, who generally contribute with modest individual amounts, during a Web-based campaign for a certain period. ECF represents an innovative form of seed financing for new ventures, where entrepreneurs lacking personal funds, and following a pecking order approach (Myers and Majluf, 1984) might not yet be able, or willing, to access bank loans (Kirby and Worner, 2014), generally more expensive or to engage in initial public offering (IPO) procedures.

ECF belongs to the Fintech environment (Blaseg *et al.*, 2021) and exploits the availability of digital platforms able to support entrepreneurs in overcoming financial constraints, particularly relevant in the initial steps of ventures (Eckhardt *et al.*, 2006). In the past decade, this phenomenon has been regulated by national authorities in many countries, among others, the USA and western European countries. In its true meaning, ECF is “alternative” to other traditional financial patterns such as venture capitalists, banks or other specialized entities (business angels, incubators, etc.). Its goal is to raise a predetermined amount of capital within a certain timeframe, meaning that the project needs to be able to attract and persuade an adequate number of crowd-investors to obtain the targeted capital. Indeed, investors must take decisions in a highly risky environment, with high levels of uncertainty and potential profits (if any) would be appreciable only in a longer term. Therefore, the signals sent by entrepreneurs to persuade the crowd bring into play the central issue of asymmetries of information between lenders and borrowers. The digitalization of the venue itself, such as Web-based ECF platforms, boosts opportunities of connections and sharing of information between entrepreneurs and investors, reducing the distance between the two and altering the traditional asymmetries in an unpredictable way. Concurring drivers emerge affecting these asymmetries (Troise, 2019): innovativeness of project (Schmitz *et al.*, 2017), but also the ability of self-marketing or of personal branding (Sadiku-Dushi *et al.*, 2019), entrepreneurs’ personal characteristics and their behavior, reliability and network ties (Shane and Cable, 2002), ability to receive trust, and so on.

All this explains why recent crowdfunding literature has followed rapid growth, and many authors have studied ECF from various perspectives and disciplines, following complementary points of view to understand what convinces the public to invest, determining the success or failure of a fundraising campaign. Thus, research contributions on ECF range from studies on entrepreneurship to strategic management; from corporate finance to behavioral economics; from marketing to organization; from psychology to engineering and computer science. Therefore, in this article, we ask:

- Q1. How do the various disciplines that study ECF contribute and complement each other toward an integrated understanding of the success or failure of an ECF campaign?

Recently, some authors have addressed reviews of the crowdfunding phenomenon from a general perspective or focusing mainly on reward-based campaigns. However, to the best of our knowledge, literature lacks a comprehensive and multidisciplinary analysis of the causes of *success* or *failure* of ECF campaigns, in a systematic manner. This paper means to fill this gap and contribute to the advancement of the field in several ways. First, our systematic review differs in that it focuses its attention on equity-based models of crowdfunding. Second, our paper focuses on the main drivers for conducting a *successful campaign*, such as characteristics of nascent entrepreneurs, businesses and/or campaigns, able to convince the

crowd to believe in ventures and take investment risks. An inevitable deduction is that the lack of these drivers and/or the presence of concurrent features may cause the failure of the campaign. Finally, the analysis of findings follows a multidisciplinary approach based on the different concurring and complementing perspectives (managerial, financial, technological, psychological ones) necessary to understand the ECF phenomenon.

Given the research question of the paper, we have opted for a reasoned methodology, which, on the one hand, could gather studies from the widest range of disciplines available on ECF success and failure, but on the other hand, it relies on the strict selection procedure of research products to adequately limit the analysis. Therefore, a systematic review was conducted exploiting two multidisciplinary repositories, such as Elsevier's Scopus and Clarivate Analytics Web of Science (WoS). Initially, for the period 2015–2022, 127 documents were extracted. Nevertheless, inclusion and exclusion criteria, applied in line with the process of [Tranfield *et al.* \(2003\)](#); [Petticrew and Roberts, 2006](#); [Briner and Denyer, 2012](#); [Palmantier *et al.*, 2018](#)), generated a final sample of 32 articles, considered for detailed investigation.

Findings on main research approaches are qualitatively synthesized and show that research has moved along time from the analysis of traditional characteristics of new ventures and business sectors to more innovative characteristics related to the entrepreneur, the board of directors of the startup with their interconnections, to the campaign rounds and internet-based aspects, such as the social media network, to the presence of pitch videos or pictures and the frequency of updates on the project. The entrepreneur's self-image, the kind of person she/he is and her/his behavior transmitted by the media, due to ECF positioning in the Fintech environment, becomes increasingly relevant in attracting financing and determining the campaign success.

Implications for academics are advancements in knowledge of what causes the success/failure of an ECF campaign, within a large spectrum of disciplines, as we offer a comprehensive analysis of key themes and dominant concepts involved in this issue. Furthermore, we draw a possible agenda for further research, that definitively should exploit more pioneering and unconventional theories and research methods, such as those related to behavioral/psychological approaches as well as those related to Big Data and artificial intelligence (AI) tools.

Regarding practical implications, entrepreneurs who are willing to access an alternative financing technique, such as ECF, should be aware of the variety/complexity of skills requested to successfully manage the digital campaigns.

This work is organized as follows. The next section presents the theoretical background and sets the stage for the review. Then, the methodological procedure is thoroughly outlined. Finally, the main findings and research agenda are discussed before drawing the conclusions.

2. Background from the literature: pecking order theory and signals

As an alternative financing scheme for initial ventures, ECF is positioned within the entrepreneurial finance theoretical framework and the pecking order theory. In fact, since the seminal papers of [Myers and Majluf \(1984\)](#), finance theory suggests that entrepreneurs requiring funds to undertake their ventures follow a pecking order and prioritize their sources of finance to reduce their costs: they organize their capital structure according to the financing costs, which depend on the information asymmetries between firm management and new shareholders. Accordingly, the pecking order theory indicates that, first, firms opt for internal funds which are immune from information asymmetry; if internal funds are not available, firms issue debt in the form of bank debt or bond issue. If internal funds and

bank/bond financing are limited, then the equity issue is considered. So, the latter is less preferable due to higher information asymmetries, dilution of ownership and thus higher costs of financing.

Financing initial ventures is an outstanding issue (Eckhardt *et al.*, 2006; Shane and Cable, 2002; Cumming *et al.*, 2019a); as entrepreneurs do not have sufficient personal funds, they not only face banking credit rationing but also lack requirements to access Stock Exchanges, either for bond or stock issues (Kirby and Worner, 2014). This motivates the grounds for the development of subordinate means of financing, as ECF is, even if it could also be interpreted as a last resort option for unprofitable or excessively indebted ventures or firms with more intangible assets or lacking internal funds (Walthoff-Borm *et al.*, 2018).

Adverse selection risk is high, especially during the initial stages of ventures (Sapienza and Gupta, 1994). ECF can downscale asymmetries by easing access to information of new ventures and allowing entrepreneurs to signal their true quality, thanks to the use of new technologies. We mainly assert that ECF investments might be interpreted as a principal-agent issue (Jensen and Meckling, 1976), where the agent (the nascent entrepreneur) is better informed about the outlook of the investments. While the principals (investors) suffer from asymmetric information. Therefore, new venture founders signal their true quality by conveying as much information as possible to attract crowd-investors. Investors, on their side, catch and interpret signals and try to alleviate the adverse selection caused by asymmetric information. Consequently, the entrepreneurs' ability to signal and persuade investors will result in a successful campaign.

3. Methodology

3.1 Choosing a review methodology

As shown in recent studies, a systematic literature review (SLR) is to be preferred to other nonstructured review methodologies whenever the researcher aims to provide a critical state-of-the-art understanding of the extant literature on a specific research topic (Tranfield *et al.*, 2003; Briner and Denyer, 2012; Palmantier *et al.*, 2018). Compared to other nonsystematic review types (e.g. narrative reviews), a SLR consists of an explicit, predefined, transparent, structured and replicable stepwise process to ensure that the maximum number of relevant articles are methodologically appraised (Petticrew and Roberts, 2006; Leonidou *et al.*, 2020). A systematic approach overcomes some of the limitations of narrative reviews and minimizes the researcher bias (Briner and Walshe, 2014; Pascucci *et al.*, 2018). It provides more reliable and generalizable findings from which comprehensive conclusions can be drawn, giving a high-quality scientific significance (Leonidou *et al.*, 2020).

We adopted the stepwise process outlined by Tranfield *et al.* (2003) and practices provided by recent review studies in management (Pascucci *et al.*, 2018; Leonidou *et al.*, 2020; Battisti *et al.*, 2021):

- Formulation of the research question;
- Definition of the review protocol;
- Descriptive analysis of the results; and
- Meta-synthesis and thematic analysis of the data.

3.2 Research question and definition of the review protocols

This paper focuses on outcomes of ECF and contributes to extant research by understanding the set of signals, emerging in various disciplines, which may contribute to

alleviate information asymmetries between entrepreneurs and investors, within a Fintech environment. Hence, we developed the following research question:

RQ1. How do the various disciplines that study ECF contribute and complement each other toward an integrated understanding of the success or failure of an ECF campaign?

Our research objectives are:

- to synthesize an unambiguous definition of ECF as an alternative financing scheme and of its process;
- to evaluate different disciplines and related perspectives, either qualitative or quantitative, adopted to analyze ECF outcomes and synthesize them in an integrative framework;
- to identify determinants of successful/unsuccessful outcomes in an ECF campaign that grant/prevent access to finance; and
- to draw insight from the literature to advance future research on determinants of ECF outcomes and signaling strategies, with insight on topics worthy of investigation.

Within multidisciplinary internet-based repositories, we opted for two multidisciplinary search engines instead of just one, to make the search more comprehensive and enhance the review to the utmost (Pascucci *et al.*, 2018; Vrontis *et al.*, 2021a): Elsevier's Scopus and Clarivate Analytics WoS. We decided to base our research on Scopus and WoS, as their search functions allow for sufficient accuracy, as well as are frequently browsed together in SLR studies to achieve a broader coverage of the extant literature (Waltman, 2016).

3.3 Conceptual boundaries of the review

We set the conceptual boundaries to better define the context of analysis (Pret and Cogan, 2019; Battisti *et al.*, 2021). First, we focused on a specific crowdfunding model, as it is the *equity-based* crowdfunding. Second, we focused on the *outcome* of ECF campaigns. Third, the review addressed the *two* dimensions of campaign outcome: *success* and *failure*. Fourth, we ensured to include papers from various disciplines and not solely from business and management studies.

Therefore, the boundaries were meant to exclude studies that focused solely on nonequity-based crowdfunding models (i.e. reward-based, donation-based, lending-based, etc.), on the performance of platforms or on postoffering lives of ventures. The boundaries included; instead, studies discussing the cause-effect relations between variables on the outcome of campaigns, aimed at uncovering the drivers for success or failure.

Steps performed to identify the final sample of articles were systematized into a series of inclusion and exclusion criteria (Leonidou *et al.*, 2020, Table 1).

We applied two extraction queries based on a general keyword search requirement combining standard Boolean operators, with open search timespan, to include all relevant articles written in English (Battisti *et al.*, 2021; Vrontis *et al.*, 2021a).

The first query was based on the concurrence of three keywords, "equity," "crowdfunding" and "success," browsed among the title, abstract and keywords sections of documents. It produced 138 documents, of which 23 were overlapping, resulting in a subsample of 88 documents.

Similarly, the second query browsed for "equity," "crowdfunding" and "failure" or "unsuccessful" to uncover the complementary side of an ECF outcome [1]. The keyword

Table 1.
Inclusion and
exclusion criteria

Inclusion criteria and queries (Q1, Q2)	Ex ante exclusion criteria	Ex post exclusion criteria
(i) Documents available in at least one of the two databases: Elsevier's Scopus and Clarivate Analytics Web of Science	(i) Nonpeer-reviewed documents: – Book chapters – Reports – Lecture notes – Conference proceedings – Others	(i) Articles that examine different types of crowdfunding rather than ECF (ii) Articles that do not examine success/failure factors of campaigns
(ii) Q1: Documents that contain (not necessarily in this order) "Equity," "crowdfunding" and "success" within title, abstract or keywords Q2: Documents that contain (not necessarily in this order) "Equity," "crowdfunding" and "failure" within title, abstract or keywords	(ii) Duplicates	(iii) Articles focused on postfunding dimension (iv) Articles focused on prefunding dimension (v) Articles that examine other nonpertaining or nonfocused topics (vi) Nonempirical articles
(iii) No timespan boundaries (all published documents)		
(iv) Documents available in English		

definition is guided by our research question to center the ECF phenomenon and its outcome (Battisti *et al.*, 2021). At the same time, the use of broad keywords prevented relevant articles from being filtered out from the initial sample (Pret and Cogan, 2019; Leonidou *et al.*, 2020).

The second query produced 39 documents, of which 14 were duplicates and 26 overlapping the first query, resulting in a subsample of 13 documents and in an initial sample of 127 documents from the two queries.

In line with the similar studies quoted above, the ex ante exclusion criteria kept only peer-reviewed articles and discarded 36 documents. Then after a full-text review, 59 nonpertaining articles that did not exactly match the topic were discarded due to the ex post exclusion criteria (Table 1), leaving the final sample of 32 articles published from 2015 to early 2022, from 22 different journals (Figure 1).

3.4 Data extraction form

All articles of the final sample were downloaded up to February 2022 and content analysis was carried out manually by the authors (Battisti *et al.*, 2021). After the first set of inspective full-text reviews, the articles were coded and classified. We collected data into Microsoft Excel Spreadsheets (Vrontis *et al.*, 2021a) mainly on:

- definitions;
- theoretical background;
- hypothesis;
- methodologies;
- platforms investigated;
- variables;
- size (no. of startups analyzed) of the samples; and
- finally, main findings.

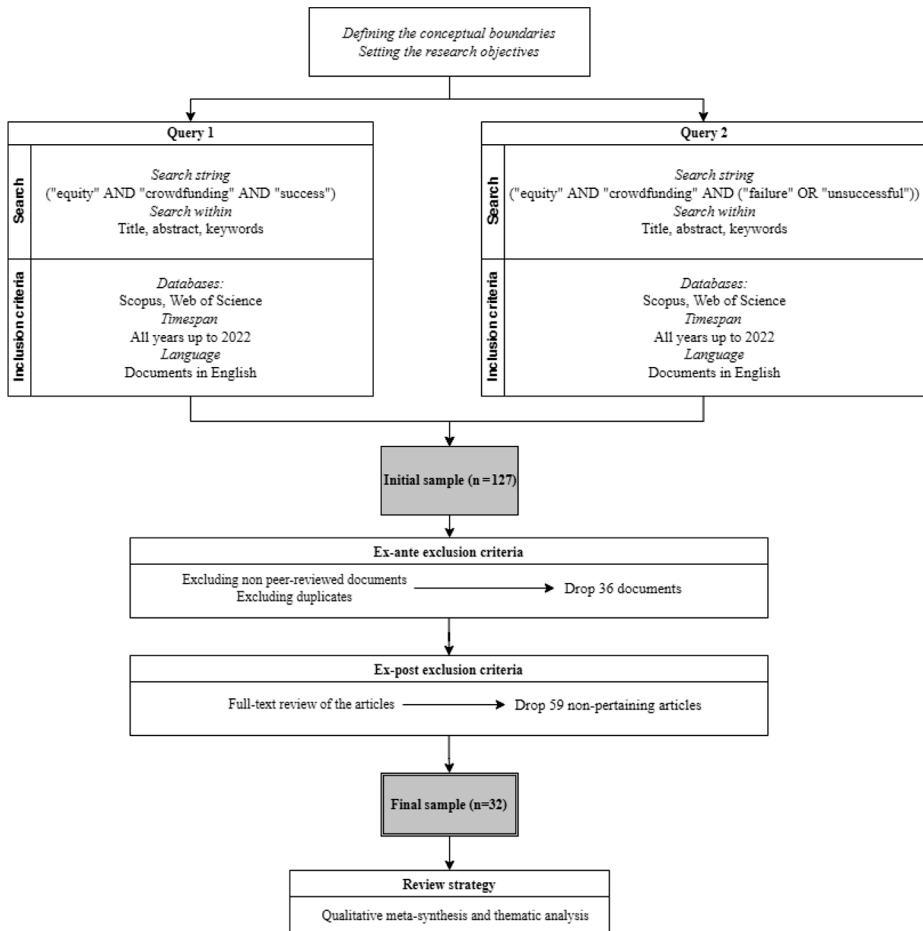


Figure 1.
Steps in the
systematic review

4. Findings

4.1 Descriptive analysis of the sample

The descriptive analysis was conducted using the “Bibliometrix” package developed by [Aria and Cuccurullo \(2017\)](#) in R language ([Table 2](#)). Six articles are single-authored, though the majority is multiauthored, with 70 authors involved and 2.19 authors per document, showing a large community of academics involved in the issue.

The progression of the annual scientific production demonstrates that the field of research on ECF is recent and fast-growing. [Appendix 1](#) of supplementary materials offers insights on further bibliometric features ([Figure A1-A5](#)), [...], and [Appendix 2](#) provides the sample overview ([Table A1](#)).

Most of the articles in our sample study British ECF platforms: above all Crowdcube and Seedrs. The rationale lies in the large set of data available compared to other platforms. The majority are single-platform studies, and seven of them are multiplatform (i.e. the data set is composed of campaigns from more than one platform). Only two multiplatform studies

Table 2.
Statistics of the
sample

<i>Main information about data set</i>	
Timespan	2015:2022
Sources (Journals, Books, etc.)	22
Documents	32
Average years from publication	3.34
Average citations per document	62.91
Average citations per year per doc	10.86
References	1668
<i>Authors</i>	
Authors (N.)	70
Author appearances	85
Authors of single-authored documents	5
Authors of multi-authored documents	65
<i>Authors collaboration</i>	
Single-authored documents	6
Authors per document	2.19
Coauthors per documents	2.66
<i>Affiliations</i>	
Institutions	45

analyze platforms of different nationalities, allowing possibly to capture geographical and cultural heterogeneities.

4.1.1 Methodologies and techniques. Most methodologies and investigation techniques adopted are quantitative, but a recent trend shifts toward qualitative or quali-quantitative approaches to capture deeper and softer pieces of information (i.e. they directly analyze the agents of the process), as a confirmation of the presence of various perspectives and disciplines involved. Qualitative studies are mostly based on interviews, case studies and content analysis. Quantitative works are mostly based on multivariate analysis (linear, logistic and negative binomial regressions). Above all, ordinary least squares (OLS) regressions are commonly adopted in the case of a metric-dependent or log-dependent variable (i.e. capital raised). Negative binomial and zero-inflated negative binomial regressions are adopted for over-dispersed data and to account for excess zeros (i.e. number of investors). Logistic or logit regressions are used instead to model binary dependent variables (i.e. success/failure of a campaign). Survival models are then essential to evaluate dynamically the impact on the speed of capital allocation. Recently, [De Crescenzo et al. \(2020\)](#) adopted a fuzzy-set qualitative content analysis as an example of quali-quantitative technique, which mixes the two families of methodologies.

4.1.2 Quantitative variables. Three target variables are mostly recurrent: the success binary variable, number of investors and capital raised. The former is a dichotomous variable that assigns the value of 1 in the case of success of a campaign, which is defined as the achievement of the minimum funding target, and 0 otherwise. The latter two variables are absolute values of performance that capture respectively the number of backers at the end of a campaign and the total amount of financing raised. Recent literature has also focused on relative measures, such as the percentage of funding, which relates the capital raised to the minimum funding goal. It does not rely on the size of a new venture nor on its funding goal, allowing comparisons between campaigns. An unconventional way to measure success is the investment speed. It relates the capital raised to its timing, proving the ability of entrepreneurs to attract funds rapidly. Although some authors measure it as a simple ratio between capital raised and duration of a campaign, others adopt survival models of analysis, which confer dynamism.

The most frequently addressed categories of explanatory variables are those connected to the characteristics of both founders and firms, confirming the variety of perspectives of analysis (Table 3).

Human capital collects available information about the quality of education of the team members, their prior crowdfunding experience and prior experience in the industry.

Social capital refers to the dimension of valuable interpersonal relationships of entrepreneurs and firms. The dimension of the social media network is an important indicator of visibility and self-marketing both for entrepreneurs and firms, especially in a digital environment.

Another set of variables of interest concerns the characteristics of the team as a whole: team size, gender diversity, team's age and intellectual capital.

New venture characteristics, also used as control variables, are mainly: firm age and maturity, the geographical location (which affects investors' willingness to invest both regarding geographical and cultural influence and also regarding the distance from the investors as a home bias effect), and the disclosure of relevant financial information (such as financial key performance indicators, debt size and credit rating scores).

Campaign characteristics generally act as signals of good quality or self-confidence of entrepreneurs. The percentage of shares offered represents the proportion of shares released to

Conceptual categories	Independent variables addressed
Human capital	Team size, entrepreneur(s) education, entrepreneur(s) business education, entrepreneur(s) university degree, entrepreneur(s) industry experience, entrepreneur(s) CF experience, entrepreneur(s) experience in large companies, number of team graduates, number of team MBAs, serial entrepreneur(s), entrepreneur(s) age, tenure heterogeneity, age heterogeneity, volunteering activity
Social capital	Number of nonexecutives board members, LinkedIn presence, Facebook presence, Twitter presence, information hub role of platform
Digital-related features	Social media usage, project updates, digital interaction, online presence, featured in media, featured in newspapers/tv
Team characteristics	Team size, gender diversity, tenure heterogeneity, age heterogeneity, management rating, lone founder, team board/employees size
Intellectual capital	Patents, property rights, value-added intellectual coefficient (VAIC)
Firm characteristics	Firm maturity, ratio of full-time workers, location, venture with large clients, B2B clients, product development stage, big city location, seed stage
Financial measures	Sales, external financing, presence of financial information, expected sales growth, expected EBITDA, absence of disclaimer of no financial information
Campaign round characteristics	Share price, campaign duration, target capital, equity offered, reward/ discounts in addition, exit strategy, exit IPO, exit M&A, usage of funds, tax relief, shares accumulated in first week, largest investment
Investors' characteristics	Number of investors, professional investors, VC, BA, early led investments, percentage of lead investors' investments, investor frequency, public profile of investors
Business characteristics	High-tech, B2B, sustainability, industry sector, business development, market risk, business rating, market rating, product rating, competition rating
Project description and presentation	Use of pitch videos, presence of entrepreneurs in pitch, presence of pictures, length of description, readability, word count, tone, proxemics and attitude
Notes: EBITDA: Earnings before interest taxes depreciation and amortisation; VC: Venture capital; BA: Business angel	

Table 3.
Categories of
explanatory
variables

the crowd at the end of the campaign. The minimum funding goal is the target floor of capital to be reached to achieve campaign success. The maximum funding goal is the cap of capital that could be raised to avoid dilution of the control shares of entrepreneurs. The minimum investment captures the price of a single share. The campaign duration represents the time window for investments. The presence of professional investors reveals that an investment institution believes in the projects and supports them, often with larger resources. The premoney valuation provides an estimate of the value of the new venture before obtaining ECF financing. The anticipation of an exit strategy for the investments, such as buy-back strategies or the buy-out from an institutional counterpart, ensures the crowd about liquidity of the asset. Finally, other variables are taken into consideration concern taxation incentives, voting rights, share type and the number of followers and people interested in the project.

Authors also analyzed business characteristics, competition and industry sectors. The participation in a high-tech industry sector is perceived as a signal of the innovation degree of a startup.

Alternative variables are found within the description of projects, length and understandability of the description, presence of quality pictures, presence and length of pitch-videos, proxemics and attitude of the entrepreneur, comments and questions made on the Web by interested backers, as well as frequency and timing of updates and answers provided by the founders.

4.2 Meta-synthesis and integrative framework

4.2.1 Definition of equity crowdfunding. The definition of ECF is not unanimous: five commonalities emerge from a qualitative synthesis of literature. First, the ultimate target is raising money, meaning that the equity-based model is basically an alternative method for funding a business. The second characteristic lies in its digital nature (Cumming *et al.*, 2019b) compared to traditional financings; this allows the issuer to reach a wider audience and, on the flip side, it allows even smaller and unsophisticated investors to participate and provides more efficient access to information. In fact, the US SEC defines ECF as the “process of raising funding via the internet in exchange for securities” (SEC, 2015), highlighting that the Web-based feature is a key point. Inevitable deduction is a different attitude of nascent entrepreneurs toward digital instruments, as well as for potential investors and customers (Scarmozzino *et al.*, 2017). Third, ECF mainly refers to the early stages of a firm’s development, although a campaign could be launched by a mature firm as well. Fourth, a distinctive characteristic lies in the return scheme. The compensation for the backers is not reward-based, but rather stock-based, where each investor receives a portion of the firm’s shares and participates in its equity. The fifth characteristic concerns the dimension of investors, who are mostly small investors and private individuals, even if lately there has been an increasing interest and presence of professional investors.

4.2.2 Integrative theoretical framework. Our qualitative meta-synthesis (Tranfield *et al.*, 2003) identifies four main clusters of disciplines and provides a taxonomy of the main theories, addressed within traditional finance, behavioral economics, corporate finance and entrepreneurship (Table 4).

The predominant framework belongs to traditional finance theories and, mainly, to the signaling theory. Several authors have also investigated the phenomenon of informational cascade, where an investor’s decision is based on the inference about other people’s set of information and might result in an imitative behavior (Vismara, 2018).

It appears inevitable that the exploration of behavioral topics and drivers affecting the decision-making process of investors are usually drivers for ECF outcome. Some authors adduced theoretical support from literature regarding investor rationality, decision theory and herding behavior. Investors derive their choices from several aspects other than

Topic	Theory/subtopic	Articles
<i>Traditional finance</i>	Signaling theory	Ahlers <i>et al.</i> (2015), Vismara (2016, 2019), Vulkan <i>et al.</i> (2016), Block <i>et al.</i> (2018), Piva and Rossi-Lamastra (2018), Barbi and Mattioli (2019), Kleinert and Volkmann (2019), Nitani <i>et al.</i> (2019), Rossi <i>et al.</i> (2019), Usman <i>et al.</i> (2019), De Crescenzo <i>et al.</i> (2020), Kleinert <i>et al.</i> (2020), Ralcheva and Roosenboom (2020), Lim and Busenitz (2020), Dority <i>et al.</i> (2021), Vrontis <i>et al.</i> (2021b), Meoli and Vismara (2021), Coakley <i>et al.</i> (2022)
	Information asymmetry	Agrawal <i>et al.</i> (2016), Löher (2017), Löher <i>et al.</i> (2018), Piva and Rossi-Lamastra (2018), Kleinert and Volkmann (2019), Nitani <i>et al.</i> (2019), Rossi <i>et al.</i> (2019), Usman <i>et al.</i> (2019), Dority <i>et al.</i> (2021)
	Principal-agent theory	Mamonov and Malaga (2018, 2019), Cumming <i>et al.</i> (2019a, 2019b)
	Capital markets and information disclosure Intermediation	Li <i>et al.</i> (2016), Block <i>et al.</i> (2018) Löher (2017), Malaga <i>et al.</i> (2018), Rossi <i>et al.</i> (2019), Xiao (2020)
<i>Behavioral economics</i>	Decision theory	Lukkarinen <i>et al.</i> (2016), Mamonov and Malaga (2018)
	Herding behavior	Vulkan <i>et al.</i> (2016), Kleinert and Volkmann (2019), Nitani <i>et al.</i> (2019), Meoli and Vismara (2021)
	Information cascade	Vismara (2016), Kleinert and Volkmann (2019), Meoli and Vismara (2021)
	Investor rationality Knowledge sharing Information understandability Information manipulation	Nitani <i>et al.</i> (2019), Vismara (2019) Vrontis <i>et al.</i> (2021b) Lukkarinen <i>et al.</i> (2016), Block <i>et al.</i> (2018), Dority <i>et al.</i> (2021) Meoli and Vismara (2021)
<i>Corporate finance</i>	Evaluability theory	Shafi (2021)
	IPOs and SEOs	Ahlers <i>et al.</i> (2015), Vismara (2016), Nitani <i>et al.</i> (2019)
	Ownership and commitment	Ahlers <i>et al.</i> (2015), Vismara (2016), Löher <i>et al.</i> (2018), Cumming <i>et al.</i> (2019a, 2019b), Rossi <i>et al.</i> (2019)
	Tax incentives/Taxation benefits Trust theory Voting rights	Vismara (2016, 2019), Vulkan <i>et al.</i> (2016), Shafi (2021) Xiao (2020) Agrawal <i>et al.</i> (2016), Cumming <i>et al.</i> (2019a, 2019b), Rossi <i>et al.</i> (2019)
<i>Entrepreneurship</i>	Computer mediation challenge	Lukkarinen <i>et al.</i> (2016), Piva and Rossi-Lamastra (2018), Mamonov and Malaga (2019), Usman <i>et al.</i> (2019), Nitani <i>et al.</i> (2019)
	Contingency theory Entrepreneurial finance	De Crescenzo <i>et al.</i> (2020) Lukkarinen <i>et al.</i> (2016), Vulkan <i>et al.</i> (2016), Löher <i>et al.</i> (2018), Mamonov and Malaga (2018), Barbi and Mattioli (2019), Kleinert and Volkmann (2019), Shafi (2021), Kleinert <i>et al.</i> (2020), Ralcheva and Roosenboom (2020), Xiao (2020)
	Gender	Malaga <i>et al.</i> (2018), De Crescenzo <i>et al.</i> (2020), Andrieu <i>et al.</i> (2021)
	Human capital Network and social capital Risks in entrepreneurship Sustainable entrepreneurship	Piva and Rossi-Lamastra (2018), Barbi and Mattioli (2019), Kleinert <i>et al.</i> (2020), Lim and Busenitz (2020) Vismara (2016), Nitani <i>et al.</i> (2019), Usman <i>et al.</i> (2019), Kleinert <i>et al.</i> (2020) Mamonov and Malaga (2018, 2019) Motylska-Kuzna (2018), Vismara (2019)

Table 4.
Predominant
theoretical
framework

financial information and are likely prone to be affected by cognitive biases and decisional shortcuts. Herding behavior is quite common in contexts of asymmetric information (Scharfstein and Stein, 1990), where the decision-maker follows the crowd and invests in a specific startup only after having learned that the campaign is about to conclude successfully. Additionally, crowd-investors tend to evaluate more heavily those characteristics that are more easily understood due to the so-called “less-is-better effect”, where decision-makers facing a high variety of information are subject to a cognitive distortion known as “evaluability heuristic” (Hsee, 1998).

Any outcome of a crowdfunding campaign is evaluated from the business plan and financial characteristics of the new venture. A wide set of corporate finance theories concerning the firm and its governance (i.e. ownership and commitment) gives support to the research for driving factors of investing decisions.

Similarly, an entrepreneurial framework allows to understand the impact on the outcome of characteristics related to the entrepreneur and the team of founders. Traditional literature about entrepreneurship, however, could result in being outdated in a digital environment such as ECF, where entrepreneurs must find different ways to promote their business, and sometimes must reinvent their role. Hence, literature is currently adapting to gain a deeper understanding of the digital-related dynamic skills requested to cope with these frontier phenomena.

4.3 Thematic analysis and longitudinal reporting

From a thematic analysis perspective (Tranfield *et al.*, 2003; Braun and Clarke, 2006; Webster and Watson, 2002), emerging key themes and dominant concepts can be organized according to different categories of determinants of the outcome of an ECF campaign (Table 5). These elements represent signals that are sent/perceived by entrepreneurs/investors to reduce the informational asymmetries, thus affecting success or failure, of the ECF financing deal. Note that each category follows a chronological order of papers to provide a longitudinal review. Nevertheless, this diachronicity is sometimes denied because papers combine multiple perspectives.

4.3.1 Firm characteristics. Most of the literature on ECF success focuses on the characteristics of new ventures. In fact, firm age or development stage has an uncertain effect on ECF (Shafi, 2021). Early-stage firms might be less likely to attract financing (Li *et al.*, 2016; Mamonov and Malaga, 2018, 2019; Barbi and Mattioli, 2019). At the same time, investors could be unicorn-seeking and looking for young innovative companies with unexplored potential (Nitani *et al.*, 2019; Vismara, 2019; De Crescenzo *et al.*, 2020; Ralcheva and Roosenboom, 2020).

Some authors assume that ventures with headquarters in big cities could attract more investors and have addressed the geographical location as a dummy variable, but the effect is not significant (Vismara, 2016; Barbi and Mattioli, 2019; Shafi, 2021).

Firm's premoney valuation, even though not extensively investigated in literature, might positively affect the ECF outcome (Löher *et al.*, 2018).

Recently, research has begun to investigate the effect of client portfolio of a firm and found a significant positive effect for those that have large corporate [Business-to-business (B2B)] clients (Mamonov and Malaga, 2018, 2019). A study by Ralcheva and Roosenboom (2020) is the first to investigate the attendance of acceleration programs from new ventures prior to an ECF campaign, finding that they are more likely to be funded.

4.3.2 Financial information and measures. Apparently, in contrast with a general idea that financial information about the firm can reduce information asymmetries, the quality of this information in some studies appears not to be relevant (Ahlers *et al.*, 2015;

Table 5.
Structure of the
thematic analysis

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Ahlers <i>et al.</i> (2015)	Signaling theory, entrepreneurial ownership, IPO	Human capital, social capital, intellectual capital, financial information	Signals	Human capital (+); board members (+), %MBA (+), Social capital (+/-): % nonexecutive board members. Intellectual capital (+/-); patents. Retained equity offering (-). Financial information: absence of disclaimer of no information (-; but not on the number of investors), Exit channel/strategy (+/-; "cheap talk" and not effective signal) Syndicates (+)
Agrawal <i>et al.</i> (2016)	Information asymmetry and quality assessment, voting rights and syndicates	Syndicates	Syndicates deals provide division of labor among investors (due diligence, etc), enhance economic growth by reducing market failures and allocating capital more efficiently	
Li <i>et al.</i> (2016)	Traditional finance on capital markets and information disclosure	Firm characteristics, team characteristics, lead investor information, project presentation and social interaction	Likelihood of elaboration (ELM) and persuasion, information disclosure reduce information asymmetry and induce persuasion; early lead investments as signal, but not for higher percentage of investment (collusion risk)	Team size (+), firm age (+), ratio of full-time workers (+), human capital (+), project updates and interactions (+), pitch video (+), length of description (+), information disclosure (+), early lead investments (+), percentage of lead investors' investments (-; think they might collude to attract followers) BA/VC criteria (+/-): financial information (+/-, but may be relevant for accredited investors with more expertise. CF criteria (+, easily observable); understandability of product (+), campaign characteristics (+): [funding target (+), share price/min investment (-), campaign duration (-), financials provision (+/-)] network (+); [private funding from early hidden phase
Laukkarinen <i>et al.</i> (2016)	Drivers of investment decisions in adjacent fields to ECF: crowdfunding (reward, etc.) and VCs and BAs	Investment decision criteria of CF, investment decision criteria of early-stage financing (VC, BA), campaign characteristics	Credibility, encourage investment, capability and decisiveness of entrepreneurs	

(continued)

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Vismara (2016)	Equity retention, entrepreneurs' social capital and social network	Campaign characteristics, social capital, firm characteristics	Signaling	(+), social media network interaction (+, Facebook] Social capital (+, LinkedIn), retained equity offering (-), team size (+), funding target (+), tax incentives (+/-), exit IPO (+/-), exit in five years (-), dividends intention (+), female gender (-), duration (-), seeds (+), London (+/-)
Vulkan <i>et al.</i> (2016)	Crowdfunding	Campaign characteristics, investors characteristics, firm characteristics	Herding behavior, signaling	Share accumulated in first week (+), funding target (-), largest investment made by single investor (+), number of investors (+), premoney (+/-), team size (+, weak), tax incentives (+/-), public profile of investors (+/-) Platform intermediation (+)
Löher (2017)	Crowdfunding, role of platforms, information asymmetries, intermediation	Role of platforms	Platform intermediation: project evaluation and assessment (prescreening), reputation, reduction of information asymmetry, reduction of transaction costs Updates by start-up as signals in ECF	Update number (+, but takes time and "cheap talks" issue), Flesch readability index (+, but weak, on number of investments only and takes time), word count (+/-). Updates about: (new funding (+), business development (+), campaign developments (+), cooperation projects (+), team update (+/-, typically do not change during campaign), business model (+/-, typically do not
Block <i>et al.</i> (2018)	Signaling theory and information disclosure	Updates, readability/understandability index of updates		

(continued)

Table 5.

Table 5.

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Löher <i>et al.</i> (2018)	Entrepreneurial finance, information asymmetry, crowdfunding	Own commitment level of entrepreneurs, firm characteristics, campaign characteristics, investor characteristics	Signals	change during campaign), external certifications (–, not credible?) Own commitment level (+), premoney (+), professional investors (+/–), firm age (–), financing alternatives available before start (+/–), destination of funds: [market entry (+/–), market penetration (+/–)]; Gender (+/–, perhaps ECF do not ease female entrepreneurship) Company development (of product) stage (+), venture with large corporate clients (+), intellectual capital and patents (+/–), team size (+), prior early-stage funding (+, BA, VC), serial entrepreneur (+/–), entrepreneur experience (+/–) Key elements of sustainable development (+, but not on the number of investors), Basic elements (–, weaker: number of investors not sensitive to sustainability) Entrepreneur social (media, LinkedIn) capital (+), funding goal (–), high-tech (–, more uncertainty. Ahlers <i>et al.</i> , 2015), team size (+/–), intellectual capital and patents (+). Human capital: (entrepreneur education (+, but only specific to business education; others are +/–), entrepreneur experience [+ , but
Malaga <i>et al.</i> (2018) Mamonov and Malaga (2018)	Female entrepreneurship and finance ECF title III JOBS Act	Gender Business characteristics: market risk, execution risk, agency risk. Human capital, intellectual capital, firm characteristics	ECF platform as facilitator for female entrepreneurship Less sophisticated investors will follow more sophisticated investors' lead (BA, VC) decision-making	
Motyjska-Kuzna (2018)	Sustainable development	Sustainability elements, campaign characteristics	Sensitivity of investors to sensitivity	
Piva and Rossi-Lamastra (2018)	Information asymmetry, human capital, signaling	Human capital, social capital, intellectual capital, firm characteristics, business characteristics	Signals	

(continued)

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Barbi and Mattioli (2019)	Human capital, crowdfunding	Human capital, firm characteristics, team characteristics, business characteristics	Signals	not necessarily in industry)]. Gender (+/-) Firm age (+), high-tech (+/-), big city (+/-), reward/discounts in addition to shares (+/-), prior seed financing (+), featured in media, newspapers, TV (+), online presence (+/-, number of social media on webpage), team size (+), graduate within team (+, weak), professional business experience (+), experience in the field of firm (+/-), gender (+/-), volunteering (+/-) Equity offered [-, equal to cash-flow rights (+)], separation ownership and control (-, potential rise of agency costs), separation mitigated by entrepreneur experience (+), firm age (-), positive sales (+) Investor frequency (+), competing offers (+), entrepreneur reply (+), updates (+), discussions (+), discussion topic (+, significant: market risk, financial snapshot, likely return, shareholders' rights) Market risk: firm age/stage (+), B2B corporate clients (+), patents (+) Agency risk: BA/VC investors (+) Execution risk: team size (+/-), entrepreneur industry experience (+/-), serial entrepreneur (+). Computer
Cumming <i>et al.</i> (2019a, 2019b)	Corporate finance theories about voting rights and separation between ownership and control (Principal-Agent)	Ownership variables	Signals: firm value increase with cash-flow rights of controlling shareholders but decrease if voting rights exceed cash-flow rights. Separation of voting power and cash-flow	
Kleinert and Volkmann (2019)	Information asymmetries, early-stage finance	Discussion and discussion topics. Control for herding (investor frequency before day t)	Signals, herding	
Mamonov and Malaga (2019)	Market risk, execution risk, agency risk, computer mediation challenge (videos)	Intellectual capital, human capital, firm characteristics, market/product characteristics, pitch video	Effects of market risk, agency risk, execution risk and computer mediation	

(continued)

Table 5.

Table 5.

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Nitani <i>et al.</i> (2019)	Information asymmetry, crowdinvestors' rationality, social media herding behavior	Firm characteristics, financial information and measures, usage of funding, social capital, human capital	Signals, herding	mediation: use of pitch video (+), presence of entrepreneur in video (+/-) Firm attributes: firm size (+), firm age (-), exit strategy: IPO (+), M&A (-, weak), Usage of funds: working capital (+), R/D (+/-), marketing (+/-), market expansion (+/-), Financial measures: expected sales growth (+, but reasonable), expected EBITDA (+) Social network (+, LinkedIn and Facebook), Prior start-up experience (+). Education degree (+/-)
Rossi <i>et al.</i> (2019)	Corporate governance: separation between ownership and control, voting rights, information asymmetry	Ownership and voting rights, syndicate-platform, platform characteristics	Signals: impact of voting rights delivery, platform intermediation	Voting rights (+/-): individual voting rights (-), pooled voting rights (+/-), syndicate-like platforms (-), common law country (+), platform age (+)
Usman <i>et al.</i> (2019)	Information asymmetry	Role of media, experience	Signals	Role of media (+, both video and images), past CF success (+), duration (-), updates (+), comments (+), number of URL links shared (+)
Vismara (2019)	Sustainable development, signal interpretation	Firm characteristics, human capital, campaign characteristics, business characteristics	Signals and different interpretations (characteristics of the receiver)	Sustainability (+/-, but attracts more crowd investors; not professionals), team size (+, but not for professionals), entrepreneur experience (+/-), target capital (+, but for investors only and not for success), equity offered (-), serial entrepreneur (+/-), tax incentives (+/-)
De Crescenzo <i>et al.</i> (2020)	Contingency factors of ECF	Firm characteristics, campaign characteristics	Signals and contingency	Firm age (-), industry sector (+), team size (+), gender (+, failure if not female),

(continued)

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Kleinert <i>et al.</i> (2020)	Entrepreneurial finance, signaling	Prior funding, human capital, social capital, firm stage, firm characteristics	Signals with moderation effects	reward (-, they prefer financial returns), pictures (+) Prior funding (+), CF (+), VC (+, but only for no. investors), BA (+, but only for no. investors), grant (+, but not for no. investors), Market access (+, but not on number of investors), entrepreneur education (+), technology (-, but only for number of investors), exit plan (+), funding goal (+, but only for number of investors), multiple investor types (+), revenues/sales (+), moderation effects of social capital (+, nonexecutive directors), moderation effects of seed stage (+) Equity offered (-), funding goal (+/-), external financing (+), accelerator attendance (+), firm age (-), team size (+), entrepreneur age (-), prior ECF funding (follow-on campaign) (+), intellectual property rights and patents (+/-)
Ralcheva and Roosenboom (2020)	Entrepreneurial finance and ECF	Campaign characteristics, firm capital, human capital	Signals	
Xiao (2020)	Trust theory and early-stage financing	Trust	Signals, trust building, platform intermediation	
Lim and Busenitz (2020)	Signaling and CF, human capital characteristics	Human capital, team characteristics (moderation effect)	Signals	Human capital (+); university education (+), management experience in SMEs (+), management experience in large companies (+/-), startup experience of previous ventures (+), startup experience of ongoing ventures (-) Team characteristics (+): team size (+, dummy: lone founder or team-based), Control: sales (-), intellectual capital [+], number of patents (+), proportion of MBAs (+), funding target (+), team

(continued)

Table 5.

Table 5.

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Shafi (2021)	ECF and professional investors' criteria	Human capital (team characteristics), firm characteristics (business), financial information and metrics	Evaluability heuristics	board/employee size (+/-), location (+/-), prior CF funding (+/-, dummy) Management: management rating (+) commitment (+), experience (+/-), skills (+/-) Business: business rating (+), market rating (+/-), product rating (+/-), competition rating (+/-) Financials (+/-). Control: prior CF success (+), equity offered (-), high-tech (+/-), London (+/-), funding target (+/-), firm age (+/-), tax relief (+/-) Gender (-); Control: entrepreneur characteristics: [+/-, PhD level (), hi-tech experience (+/-), ethnicity (+/-)], firm maturity (+/-), geographical location (+/-), funding goal (-), date (+/-) platform (+/-)
Andrieu <i>et al.</i> (2021)	ECF and female entrepreneurship, homophily theory	Gender	Female risk aversion and homophily theory	Readability: Information quantity [word count (+) word count^2(-)], information quality [SMOG (+), SMOG^2(-)]; tone [Information attitude (+), information attitude^2(-)]; Control: [gender (+/-), funding goal (-), prior seed financing (+), VIX volatility level (-)] Platform-member investment (-), platform-member withdrawal (+). Control: funding target (-), team size (+/-), sales (+), equity offered (-) Platform information hub (+), number of campaigns on platform (+/-), intellectual capital (+), geographical distance(+/-), number of shareholders
Dority <i>et al.</i> (2021)	ECF determinants, signaling, information asymmetry and information overload	Pitch descriptions: textual analysis in CF and information overload	Signals; tone and readability of descriptions, information overload (less is more)	(continued)
Meoli and Vismara (2021)	Signaling, digital finance, social finance, information manipulation	Withdrawal rights	Signals, information manipulation	
Vrontis <i>et al.</i> (2021b)	Knowledge sharing, signaling	Intellectual capital, social capital, platform characteristics, campaign characteristics	Knowledge sharing and information dissemination	

(continued)

Authors	Theoretical framework	Categories of determinants of ECF	Mechanisms through which they affect ECF	Variables that can affect ECF outcome and effect sign
Coakley <i>et al.</i> (2022)	Signaling	Team characteristics, human capital	Signals, certification effect	(+), team size (+/-), reward (+), equity retention (+/-), campaign success (+) Team size [+], lone founder (-)], human capital [++, tenure heterogeneity (+), age heterogeneity (+), advanced degrees (+)]. Controls: (premoney (+/-), firm maturity [+], startup dummy(-)], location (+/-), equity offered (+/-), diversification (-), funding target (+/-), number of investors (+)]

Table 5.

Lukkarinen *et al.*, 2016), maybe due to the different size/dimension of projects or financial education and competencies of investors (Shafi, 2021). In particular, the absence of financial information is not perceived negatively by investors, unless the entrepreneur did not provide a disclaimer for it (Ahlers *et al.*, 2015). Others demonstrate that investors seem to pay scarce attention to financial information due to the perceived difficulty of understanding it (Shafi, 2021).

More recent literature has focused on revenues and sales, which are a more understandable financial measure of venture performance, and found that firms with good sales ratios and capable of already generating revenues at the time of their campaign, have more probabilities of getting funded (Cumming *et al.*, 2019b; Nitani *et al.*, 2019; Kleinert *et al.*, 2020).

Note that an essential indicator for ECF investors is the financial commitment of entrepreneurs (equity retention): higher own commitment increases investors' willingness to invest (Ahlers *et al.*, 2015; Cumming *et al.*, 2019b; Shafi, 2021). According to some authors, it is the single most important determinant in explaining crowdfunding success (Vismara, 2016; Löher *et al.*, 2018). Cumming *et al.* (2019b) add that family businesses, although apparently less attractive for small investors, have lower chances of failure because perceived as more long-term oriented.

On the contrary, investors appear to be discouraged by entrepreneurs who tend to give away larger ownership (and commitment) of their company, thus forcing them to bear a larger part of the entrepreneurial risks: a higher percentage of shares offered to the crowd has a negative strong relationship to the success of a campaign (Vismara, 2019; Ralcheva and Roosenboom, 2020).

In line with this argument, a venture that obtained early-stage financing, in the form of venture capital or business angels, prior to the campaign or the issuing of a follow-on ECF round, delivers a positive signal to investors (Mamonov and Malaga, 2018; Barbi and Mattioli, 2019; Shafi, 2021; Kleinert *et al.*, 2020; Ralcheva and Roosenboom, 2020).

Nitani *et al.* (2019) were the first to investigate the purpose of usage of ECF financing and show that entrepreneurs who declare using funding as working capital attract more funds rather than declaring marketing, R&D or market expansion purposes.

4.3.3 Intellectual capital and patents. Intellectual capital, and specifically the possession of patents or property rights, is a controversial factor that has been investigated since the start of ECF literature. Although it should be a signaling technique that proves the quality of intangible assets, and thus should foster crowd-investing (Piva and Rossi-Lamastra, 2018; Mamonov and Malaga, 2019), surprisingly, many authors found instead that it does not affect the outcome of a campaign (Ahlers *et al.*, 2015; Mamonov and Malaga, 2018; Ralcheva and Roosenboom, 2020).

A very recent study from Vrontis *et al.* (2021b) measured the intellectual capital using the value-added intellectual coefficient (VAIC model), as the sum of three components: capital used, human and structural efficiencies. The results assert its positive impact on the success rate of ECF campaigns.

4.3.4 Business characteristics and project description. Lukkarinen *et al.* (2016) found that the understandability of a project impacts significantly and positively on the chances of success. Shafi (2021) affirms that investors may have more difficulties to evaluate team characteristics and financial information rather than business characteristics and can form personal opinions about the desirability of certain consumer products (market expectations). In relation to this issue, according to the evaluability heuristic, investors tend to attribute more importance to fewer and more understandable pieces of information (Hsee, 1998). For this reason, the readability of a pitch description plays a crucial role both in terms of

information quantity and quality, following a nonlinear effect but rather quadratic (“Less is more” effect, [Dority et al., 2021](#)).

Elements of sustainable development are not critical to reaching the financial goal, but they can positively affect the capital raised ([Motylska-Kuzma, 2018](#)) or the number of crowd-investors, but not professionals ([Vismara, 2019](#)). Conversely, high-tech industries seem not to be relevant for investment decisions ([Barbi and Mattioli, 2019](#)), and might even enhance uncertainty ([Ahlers et al., 2015](#); [Piva and Rossi-Lamastra, 2018](#)).

4.3.5 Team characteristics and human capital. The human capital hired in the venture has several dimensions: team size and composition, gender, education and experience of the entrepreneurial team.

The management composition of a venture is an easily observable factor that can affect the investors’ willingness-to-invest and thus the outcome of an ECF campaign. Concerning the team size (number of entrepreneurs or directors of the board), an additional number of team members is positively related to an increasing probability of successfully raising crowd-financing ([Li et al., 2016](#); [Vismara, 2016](#); [De Crescenzo et al., 2020](#); [Ralcheva and Roosenboom, 2020](#); [Lim and Busenitz, 2020](#); [Coakley et al., 2022](#)), although in some cases the effect is weak/not significant ([Vulkan et al., 2016](#); [Piva and Rossi-Lamastra, 2018](#)) or is able to attract only crowd-investors rather than professional investors ([Vismara, 2019](#)). Larger teams are perceived as more capable of alleviating the execution risk of a business strategy and proving the viability of the business model ([Mamonov and Malaga, 2019](#)), especially if compared to lone-founder-based teams ([Lim and Busenitz, 2020](#); [Coakley et al., 2022](#)).

Other studies separated the effect into ventures led by a single entrepreneur and team-based ventures (led by a larger team) and found that lone founders are less likely to be funded ([Mamonov and Malaga, 2018, 2019](#); [Lim and Busenitz, 2020](#)).

The gender variable, namely, a dummy variable of the female representation on the entrepreneurial team, has an uncertain effect on the likelihood of being financed. [Vismara \(2016\)](#) found that female entrepreneurs have the same ability as male entrepreneurs in attracting investors (negative but nonsignificant relationship), but they raise less capital. Similarly, [Piva and Rossi-Lamastra \(2018\)](#) and [Malaga et al. \(2018\)](#) found a negative but nonsignificant effect. [Barbi and Mattioli \(2019\)](#), on the contrary, found a positive and significant impact on the number of investors but nonsignificant for the amount raised. The authors go further than previous literature and split the gender effect into two variables: a dummy variable and the number of female entrepreneurs within the team. The latter variable shows a positive and significant relationship for both number of investors attracted, and the amount of capital raised. More recently, [De Crescenzo et al. \(2020\)](#) found that the representation of women in new ventures is generally valued, but most importantly, found that failure to ensure female representation is associated with the failure of campaigns.

[Malaga et al. \(2018\)](#) investigated the gender effect as the main determinant of ECF success rather than a control variable. In their exploratory analysis, they found that female representation generally does not procure success (except for the real estate industry) but also that women-owned ventures are under-represented showing that perhaps ECF and digital platforms do not facilitate female entrepreneurship (in line with [Andrieu et al., 2021](#)).

Only more recent research has focused on the education dimension of human capital, which can be deduced from the possession of degrees, MBAs, skills, etc., discovering a positive relationship with the success of a campaign ([Piva and Rossi-Lamastra, 2018](#); [Barbi and Mattioli, 2019](#); [Nitani et al., 2019](#); [Kleinert et al., 2020](#); [Lim and Busenitz, 2020](#); [Shafi, 2021](#); [Coakley et al., 2022](#)). Business education seems to have a significant effect, while other types of education are irrelevant ([Piva and Rossi-Lamastra, 2018](#)). An alternative way to

evaluate human capital is suggested by [Shafi \(2021\)](#), who assigned a rating based on skills deduced from bios of entrepreneurs.

Investors, in fact, tend to be attracted by well-educated founders, especially in business, in the attempt to reduce investment risks ([Nitani et al., 2019](#); [Kleinert et al., 2020](#)) and to give more credit to the founders' education level, rather than to their experience ([Piva and Rossi-Lamastra, 2018](#)), showing that innovativeness is particularly appreciated by crowd-investors.

The mere entrepreneurial experience, in fact, does not seem to significantly affect the success of a campaign ([Mamonov and Malaga, 2018](#); [Vismara, 2019](#); [Shafi, 2021](#)) unless it regard professional business ([Barbi and Mattioli, 2019](#); [Lim and Busenitz, 2020](#)). Different results are found by [Mamonov and Malaga \(2019\)](#), [Nitani \(2019\)](#) and [Cumming et al. \(2019b\)](#), who claim that serial entrepreneurs with prior experience are more likely to raise funding, especially if gained in SMEs or previous startups ([Lim and Busenitz, 2020](#)).

Prior crowdfunding experience is seen by investors as a sign of good quality of a project that can positively and significantly affect success ([Usman et al., 2019](#); [Kleinert et al., 2020](#); [Ralcheva and Roosenboom, 2020](#)). Entrepreneurs' age is not necessarily related to experience, and [Ralcheva and Roosenboom \(2020\)](#) also found that it has a negative impact on the likelihood of success.

Recently, [Coakley et al. \(2022\)](#) focused on the heterogeneity within a venture team and found that differences in tenure and age are embraced by investors.

4.3.6 Social capital and social media network. Social capital refers to entrepreneurs' interconnections and relational capital. An early study of [Ahlers et al. \(2015\)](#) investigated the number of nonexecutive board members (industry veterans that act as mentors to new ventures), as a proxy for alliances, but found no significant effect. Differently, [Lukkarinen et al. \(2016\)](#) prove the importance of entrepreneurial network in obtaining private funding in an early hidden phase as a signal to crowd-investors before launching the campaign.

An essential part of social capital are social media and digital instruments, which are crucial in a digital environment ([Cumming et al., 2019a](#)). Indeed, they provide not only wider publicity of the campaign through the sharing of pitch videos and projects but also benefits in the form of information sharing, access to information, timing and referrals ([Wald et al., 2019](#)). Hence, social capital and the interconnections of entrepreneurs, such as their openness to social networks, have been found to hold a strong positive influence on investment decisions in that they provide an opportunity to downscale information asymmetries and validate less credible information ([Nitani et al., 2019](#)). Social media network, especially the connections on LinkedIn, is considered indeed a good predictor for the success of a campaign ([Vismara, 2016](#); [Piva and Rossi-Lamastra, 2018](#); [Nitani et al., 2019](#)). Nevertheless, a recent study by [Kleinert et al. \(2020\)](#) addressed social capital as a moderation effect for signaling, adopting the measure suggested by [Ahlers et al. \(2015\)](#). It confirmed controversial effects and claimed that perhaps the number of nonexecutive directors is an endogenous measure, implying a nonrandom distribution.

4.3.7 Digital media usage and interactions. The mere presence on social media cannot entirely explain the effect of social (media) capital on ECF outcomes. Hence, some authors shifted their attention to popularity in media, newspapers and TV ([Barbi and Mattioli, 2019](#)). In this sense, literature is unanimous in claiming that ECF campaigns benefit from entrepreneurial interactions with the crowd, such as posting regular updates on the project or on the progress of the campaign, discussions and comments ([Lukkarinen et al., 2016](#); [Block et al., 2018](#); [Kleinert and Volkmann, 2019](#)), since they mitigate information asymmetry and induce positive attitudes ([Li et al., 2016](#)). However, not all kinds of topics appear to be effective. Shifting the focus from the quantity to the quality, updates concerning business

development and new funding and updates about campaign developments and cooperation projects have positive effects on crowd participation and are highly valued by investors. On the contrary, updates concerning team developments, business models, product development and campaign promotions are meaningless for crowd-participation since information on these topics basically does not change during a campaign and investors expect to receive it usually at the beginning (Block *et al.*, 2018). Moreover, the frequency of updates provided by entrepreneurs should be regular and not abundant; otherwise, investors perceive them as “cheap talk,” causing a loss of credibility (Block *et al.*, 2018). Later, Kleinert and Volkmann (2019) found that a significant effect can also be found in discussion topics regarding: market risk, financial snapshot, investment return expectations and shareholders’ rights.

The spread of digital media offers entrepreneurs the opportunity to present pitch videos, pictures and detailed descriptions of the business idea. ECF outcome benefits from pitch videos, representing a visual introduction of the project and/or of the entrepreneur (Li *et al.*, 2016; Mamonov and Malaga, 2019). Similarly, the presence of meaningful pictures enhances the chances of success (Usman *et al.*, 2019) since they are considered as proxies in communicating the good quality of a project and promoting the campaign (De Crescenzo *et al.*, 2020). However, the presence of the entrepreneurs themselves in the videos seems to have no significant effect (Mamonov and Malaga, 2019), whereas the length of project description appears to be beneficially acclaimed by crowd-investors (Li *et al.*, 2016).

4.3.8 Investor characteristics. Professional investors’ bids are good quality signals and attract crowd-investors, enhancing the probability of reaching the minimum funding target (Cumming *et al.*, 2019b). On one hand, crowd-investors presume that professional investors are better informed. So, they mimic the same decision (Mamonov and Malaga, 2018, 2019; Kleinert *et al.*, 2020), resulting in herd behavior.

On the other hand, recently, Vismara (2019) treated the professional investor effect not as a determinant of ECF success (explanatory variable) but rather as an indicator of success (dependent variable) and found that their investing preferences slightly differ from the crowd.

Vulkan *et al.* (2016) addressed the number of investors as an explanatory variable and found that the capital raised in the first week and their largest investment can positively affect the outcome by inducing herding. However, excessively high early investments might be perceived as a collusion risk and thus as a negative signal (Li *et al.*, 2016). In fact, early investment bids made by platform-members are a potential sign of information manipulation, as they are likely withdraw the bid right before the conclusion (Meoli and Vismara, 2021).

4.3.9 Campaign characteristics. Investors’ willingness-to-invest is also affected by parameters of the campaign: minimum investment, funding goal, duration, presence of exit strategies and rewards.

The minimum investment required represents the price that an investor must pay to obtain a share. Although not extensively studied in the literature, Lukkarinen *et al.* (2016) found a negative strong relationship with the success of a campaign: higher prices seem to discourage crowd-investors to take risks.

A higher funding goal (i.e. minimum targeted amount of capital to be raised to reach the goal) seems to discourage investors and have a negative effect on success (Vulkan *et al.*, 2016; Piva and Rossi-Lamastra, 2018; Ralcheva and Roosenboom, 2020). However, a higher maximum funding goal signals good quality of the project and entrepreneur’s self-confidence (Lukkarinen *et al.*, 2016; Vismara, 2016, 2019).

Longer campaign duration represents a negative signal to the crowd and negatively affects the likelihood of raising funds (Lukkarinen *et al.*, 2016; Vismara, 2016; Usman *et al.*, 2019).

Declaring an exit strategy option is controversial in explaining ECF outcomes. Early literature suggests that it is perceived as “cheap talk” (Ahlers *et al.*, 2015), while recent literature found that it attracts more investors and fosters the probability of success (Kleinert *et al.*, 2020) by reducing the liquidity risk of investors. However, some authors disentangled the effect of different exit strategies and found that a declared IPO intention might positively condition campaign outcome (Nitani *et al.*, 2019), whereas a declared exit strategy in five years or through an mergers and acquisitions (M&A) seems to attract fewer investors (Vismara, 2016; Nitani *et al.*, 2019).

The pledge of rewards in addition to shares impacts negatively the outcome since investors rather expect financial returns from an ECF investment (Barbi and Mattioli, 2019; De Crescenzo *et al.*, 2020). Nevertheless, a more recent study from Vrontis *et al.* (2021b) found a conflicting (positive) effect.

4.3.10 Role of platforms and trust. The key role of intermediaries and syndicates of ECF platforms can influence the likelihood of raising funds as platform managers need first to select the best available ventures to be launched on their website (Löher, 2017). Then, they are entitled to improve information sharing and enable investors, after adequate advertising, to invest consciously. Hence, efficient platforms reduce search and due diligence costs to prospective investors, alleviate information asymmetries and transaction risks, allocate capital more efficiently, enhance economic growth by reducing market failures and act as syndicates for investors (Agrawal *et al.*, 2014; Löher, 2017; Xiao, 2020). Recently, Vrontis *et al.* (2021b) identified the crucial role of platforms as information hubs to disseminate information and share knowledge among investors.

ECF platforms also appear strategic in building relational interpersonal trust between entrepreneurs and investors. In this, Xiao (2020) assessed via qualitative interviews that this process facilitates investment decisions of unsophisticated agents who lack of expertise and resources to evaluate alternatives.

4.3.11 Determinants of failure. As most existing literature focused on determinants of a successful fundraising campaign, signals for failure could be implicitly deduced by the negative version (or absence) of these determinants. Only recently research has addressed explicit determinants of failure (De Crescenzo *et al.*, 2020), claiming that success and failure are not symmetric. According to their model, failure is more likely to occur for ventures that do not have female entrepreneurs, operate in traditional sectors (and not high-tech), are no longer at the early stages, publish few pictures and pledge rewards in addition to shares.

4.4 Discussion

Running an ECF campaign always raises a situation of asymmetric information, where the two financially involved parties (entrepreneurs and investors) do not possess similar sets of information, especially for new ventures with no historical data available. This discrepancy must be overcome by launching signals about the quality of the project and its outlook. This paper sheds lights on which signals are decisive in improving an ECF campaign outcome, taking into consideration various disciplines which follow different, but complementary, perspectives.

From the existing literature, positions are somehow contradictory. On the one hand, according to Nitani *et al.* (2019), crowd-investors capture signals and assess rationally the risk-return characteristics of projects. On the other hand, the interpretation of signals is different according to the characteristics of the receiver (Vismara, 2019) or is moderated by

other confounders (Kleinert *et al.*, 2020). Sometimes signals can induce herd behaviors and amplify their effect (Vulkan *et al.*, 2016; Nitani *et al.*, 2019; Kleinert and Volkmann, 2019).

The thematic analysis can be interpreted through the lens of a traditional paradigm used to deal with information asymmetries between lenders and debtors and that generally considers hard and soft information (among others, see Liberti and Petersen, 2019). So, the outcome (success) of an ECF campaign is related to a hard information set, such as firm characteristics, development stage, location of headquarters, premoney valuation, client portfolio, attendance of acceleration programs, intellectual capital and patents, business characteristics and project description. Soft information variables are even more strongly relevant, such as team characteristics and human capital, social capital and social media network, catalyzed by digital media that also facilitate personal interactions between entrepreneurs and investors.

Also, existing studies underline the importance of investor characteristics, campaign characteristics and the fundamental role of managers of ECF platforms in building trust between entrepreneurs and investors.

As a result, entrepreneurs should be aware of the potential impact of these signals and adopt coherent signaling strategies to stand out and reveal their true quality, always keeping in mind the variety/complexity of attitudes and behaviors of investors. Moreover, entrepreneurs should also define the optimal parameters (i.e. duration, target, minimum investment, etc.) of their campaign in concert with ECF platforms to encourage/not discourage crowd participation.

Some factors are clearly intrinsic to the business project, and cannot be modified in a short time or during the ECF campaign. However, thanks to social media and digital instruments, entrepreneurs can aim at presenting their unique quality traits without losing credibility and stumbling on “cheap talks” but building lasting relationships with the crowd. The presence of social media, and most importantly, the frequency and quality of their interaction, proves to have an effective impact on attracting the interest of investors, frequently reluctant to invest in a project that is not easily comprehensible or effectively presented.

4.4.1 Research agenda. Research demonstrates a need for analyzing a broader range of signals, as well as a need for extending both numerically and geographically the sampling of cases of ECF campaigns, to capture cultural differences, since the digital nature of ECF obliges to move toward innovative and unconventional covariates. The following table presents some of the topics that appear worthy of investigation (see Table 6).

As an example, text descriptions, pictures and pitch videos have a large impact on a crowd’s willingness-to-finance and cannot be overlooked. Moreover, current research seems not to converge on the choice of a target variable for defining success/failure, and future studies should focus on *comparable* measures.

Moreover, upcoming research should address the different dimensions of an ECF process (see Appendix 3 of supplementary materials):

- the phase in which an entrepreneur looking for financing decides to opt for ECF;
- the prescreening phase in which a platform assesses the quality of a proposed project; and
- the postoffering lives of financed ventures.

Few authors have tried to identify the successful characteristics of a campaign that also lead to postoffering success, i.e. to generate long-term growth and avoid subsequent failure of the business.

Theme	Further research and perspectives
Behavior	Investors' perspective – comparisons between behavior in stock market and behavior in ECF environment -Elicit investors' preferences through models of investment choice behavior Entrepreneurs' perspective – new communication skills in the Fintech environment
Business sector	Entrepreneurs' perspective – from declaration to facts: effectiveness of the declared business sector compared to the one emerging from description -New ways of classification -Which sectors attract more funding?
Communication/video	Entrepreneurs' perspective – How to make an effective and convincing pitch video?
Determinants of failure	Entrepreneurs' perspective – focus on the determinants of failure of a campaign, as well as on the postoffering phase
Digital media	Entrepreneurs' perspective – exploiting new technologies and media to promote business and ask for financing Investors' perspective – How does investment risk perception change with new technologies?
Entrepreneurship	Entrepreneurs' perspective – changing attitude in asking for trust over the internet
Financial intermediation	Platforms' perspective – application of traditional theories about financial intermediation to ECF platforms. Role of ECF platforms as intermediaries
Geography	Investors' perspective – cross-country comparison of platforms all over the world to catch cultural investment differences
Information asymmetry	Investors' perspective – coping with it in a less sophisticated environment of crowd Entrepreneurs' perspective – skills to deal with signaling techniques
Looking for ECF	Entrepreneurs' perspective – explain what motivates a nascent entrepreneur to seek financing through ECF, and perceived positioning in the pecking order theory
Marketing	Entrepreneurs' perspective – self-branding and self-marketing in the digital era to promote business and attract funding
Postoffering	Entrepreneurs' and investors' perspective – investigate results in terms of medium-term outcome of funded enterprises to uncover the predictors for postoffering success conditional to success in a campaign
Prescreening phase	Entrepreneurs' perspective – determinants of positively conclusion of the prescreening phase Platforms' perspective – competitive advantages that could be exploited by the digital platforms themselves via screening models of ECF projects.
Social media	Entrepreneurs' perspective – Which social media (and how) is more effective to promote business and funding campaigns? Studies on the efficacy of different types of social media, other than LinkedIn
Text and video (Big data)	Entrepreneurs' perspective: Do descriptions of the business affect financing decisions and persuade the crowd? What are the key aspects and how to make them effective?

Table 6.
Research agenda

Importantly, this SLR revealed that ECF literature seems to lack studies on determinants of *failure* of campaigns; thus, more research is encouraged in this field.

A different perspective of analysis would be to investigate investors' willingness-to-invest via different methodologies, i.e. choice models that could experimentally assess their investment behavior and preferences. Additionally, dynamic studies via panel data sets are not common in literature, but they could uncover deeper effects that might not emerge from static perspectives.

Despite the growing interest of economic research in AI and machine learning models, recent literature surprisingly lacks studies focused on the adoption of these techniques, which could provide different and interesting results compared to traditional methods.

Moreover, official and reliable databases of ECF campaigns are sporadic, requiring researchers to access data directly from platforms, but this process is still not very explored in literature.

Finally, literature has surprisingly passed over an accurate analysis of the business sector in which new ventures operate. We believe that this important variable should be investigated in the perspective of comparing, perhaps with the aid of AI tools, the declared business sector and what comes out from project descriptions/pitch videos.

5. Conclusions

ECF is an innovative way for new ventures to obtain alternative financing within a Fintech environment. The digital nature of communication forces entrepreneurs to adapt their attitude and branding techniques, finding new ways of promoting and financing their business ideas and products.

We argue that this is the direction in which ECF literature is moving soon, exploring new characteristics that could capture the crowd-investors' attention and drive their willingness-to-invest. ECF is addressed to a new type of investors, who might be less experienced with financial instruments and thus could look at different types of information, making it critical to provide easy-readable data. According to the "less-is-better effect," unsophisticated investors may tend to evaluate fewer pieces of information and to attribute heavier weights to those which are easier to understand. As a result, entrepreneurs and platform managers have several lessons to learn.

5.1 Implications and future lines of research

5.1.1 Theoretical implications. Overall, existing literature lacks a systematic analysis of arguments in favor of (or against) those signals that can be used to predict the outcome (positive or negative) of an ECF campaign; this research gap motivates this paper. The rationale is to review the factors that lessen informational asymmetries, reduce adverse selection costs and increase the willingness-to-invest of a highly heterogeneous population of investors.

Implications for academics are advancements on knowledge of what causes the success/failure of ECF campaigns, within a wide spectrum of disciplines, as shown by the research agenda in [Table 6](#). In fact, research should exploit more pioneering and unconventional theories, such as those related to behavioral/psychological approaches, and concerning research methods, Big Data and AI tools could be exploited as well.

At least three main perspectives could be identified: entrepreneurs, investors and platforms. Further research interested in the first perspective, should investigate entrepreneurs' reasons to receive funding via ECF, considering changes in their attitude toward risk, until focusing on postoffering experience of successfully financed ventures. Regarding investors' perspective, literature should investigate drivers for investors' willingness-to-invest in ECF campaigns, their attitudes toward risk and risk-return preferences, and also comparing different crowdfunding models. As for platforms, fewer authors have investigated business models of ECF platforms, starting from the prescreening phase until the postoffering services offered to ventures. Finally, another promising avenue for research lies in cross-country-cross-platform analysis of the phenomenon to extend, both numerically and geographically, the sampling of observations and capture cultural

differences, with opportunities for comparing theories and causal effects across different crowdfunding models/countries.

5.1.2 Practical implications. We acknowledge that ECF is a valuable tool to support entrepreneurial finance and, consequently, its development could contribute to the spread of innovation and economic growth. This motivates the policy implications of this study, which proves that entrepreneurs, on the one hand, are experiencing changes of scenario and should adapt their behaviors to deal with the present digital era. Those willing to access to an alternative financing scheme, such as ECF, should be aware of the variety/complexity of skills requested to successfully manage digital campaigns, as their attitude and communication skills can highly influence the outcome of their financing requests. On the other hand, platform managers could improve their knowledge of what persuades the crowd to invest, with more efficient project prescreening.

5.2 Limitations

As with other SLRs, we recognize limitations of this study (Pascucci *et al.*, 2018; Leonidou *et al.*, 2020; Battisti *et al.*, 2021). The first one is mainly due to the (inevitable) numerical paucity of the sample, despite our effort to structurally collect an extensive set of relevant multidisciplinary literature. Additional papers could be identified based on different review protocols, even though that might not match our intended research question. Moreover, although the search was conducted among two largely comprehensive and multidisciplinary repositories, the coverage might not be exhaustive and other researchers might analyze additional bibliographic sources. Besides, this review includes only articles published in peer-reviewed academic journals and written in English. Other reviews might also consider books, conference proceedings (“grey literature,” Leonidou *et al.*, 2020) or also relevant articles in different languages. However, we believe that the articles examined in this review are representative of a body of literature addressed to answer our research question. Thus, the inclusion of all published studies might not be essential or realistic (Battisti *et al.*, 2021).

In conclusion, we believe that these limitations leave room for future research opportunities and bolster the findings of our article, which outline expected research trends and claim space and urgency for further research according to the agenda offered.

Note

1. Search strings: (“equity” AND “crowdfunding” AND “success”); [“equity” AND “crowdfunding” AND (“failure” OR “unsuccessful”)].

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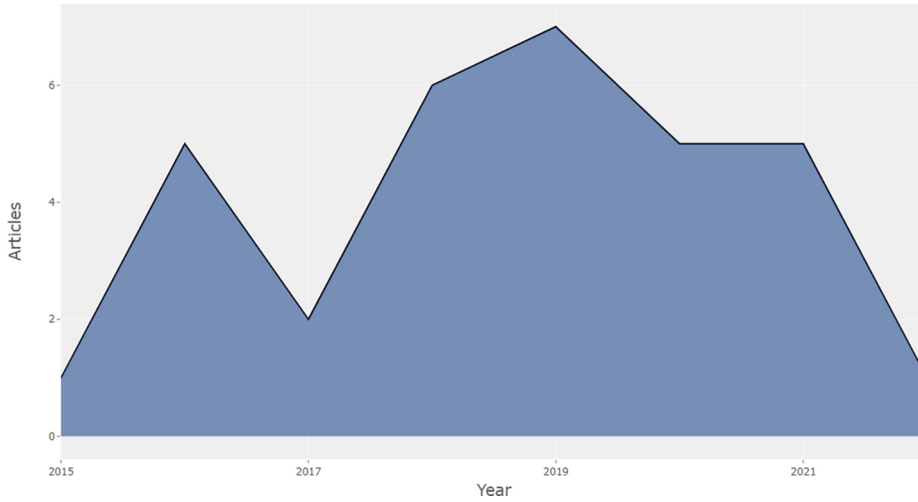


Figure A1. Annual scientific production

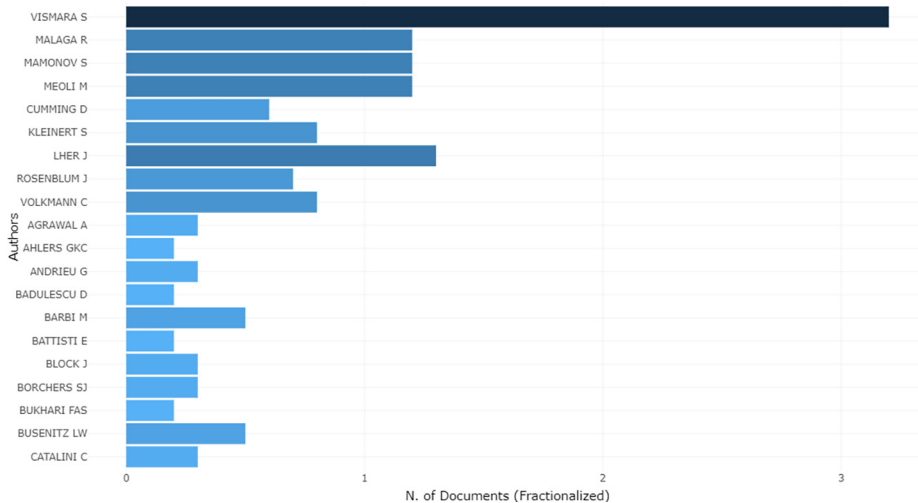


Figure A2. Most relevant authors

MRR
46,6

824

Figure A3.
Most relevant
affiliations

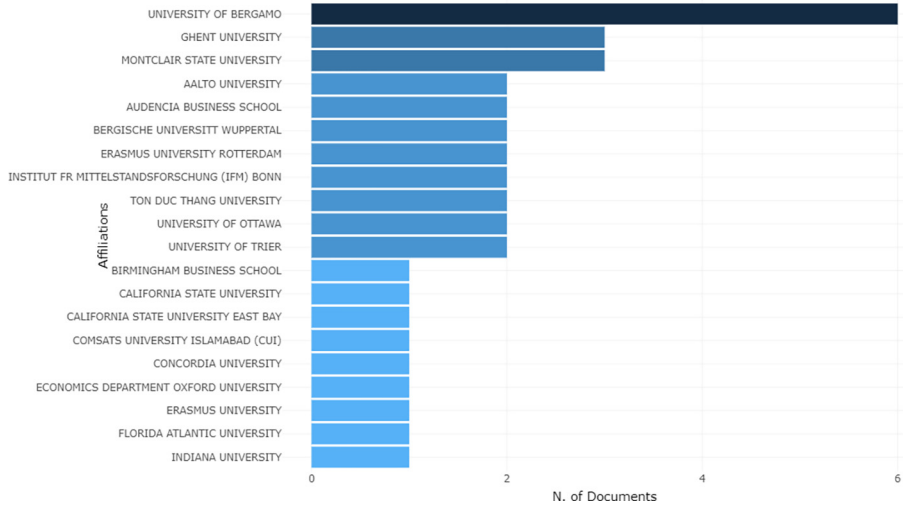
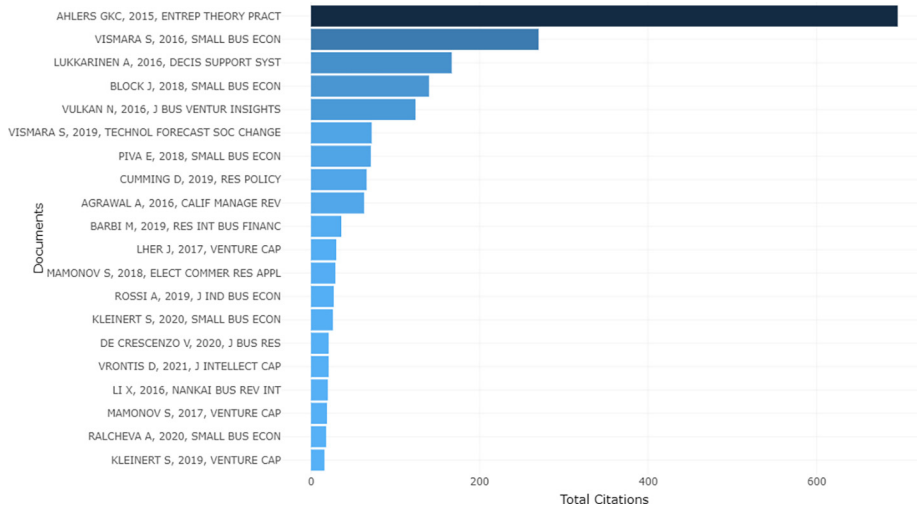
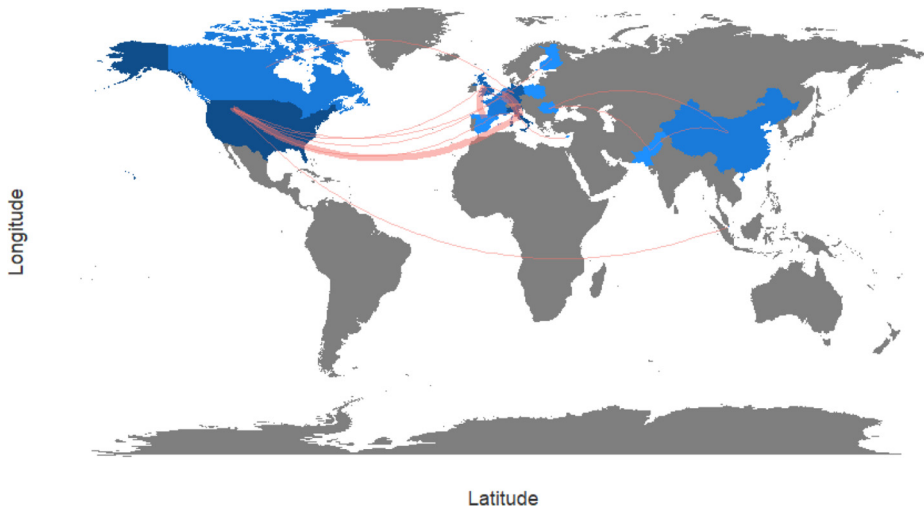


Figure A4.
Most cited articles





Equity
crowdfunding

825

Figure A5.
Country collaboration
map

Authors	Platforms and countries	Methodologies and techniques	Dependent variables	Investment speed	Panel data set
Ahlers <i>et al.</i> (2015)	Australian Small Scale Offerings Board (ASSOB) (Australia)	Univariate: mean differences, multivariate: zero-inflated negative binomial regressions, OLS, survival analysis (exponential hazard models)	Fully funded, Number of investors, Funding amount, Speed investment	Yes	
Agrawal <i>et al.</i> (2016)	AngelList (USA)	Qualitative			
Li <i>et al.</i> (2016)	Dajiatou (China)	ELM, independent-sample <i>t</i> -test, K-means cluster, linear regressions	Ratio of fundraising completion, Fundraising speed, Number of followers	Yes	
Lukkarinen <i>et al.</i> (2016)	Investor (FIN)	Multiple linear regressions	Amount raised, Number of investors		
Vismara (2016)	Crowdcube, Seedrs (UK)	Negative binomial regression; OLS	Percentage of funding, Number of investors		
Vulkan <i>et al.</i> (2016)	Seedrs (UK)	Linear probability model, OLS, quantile regression	Success dummy, Percentage raised, Shares of goal covered in Week 1	Yes	
Löher (2017)	Companisto, Fundsters, Innvestment, Seedmatch and Bergfürst	Qualitative: semistructured interviews			
Block <i>et al.</i> (2018)	Seedmatch and companisto (GER)	Fixed effects negative binomial, OLS panel regression	Number of investments, Capital raised	Yes	Yes
Löher <i>et al.</i> (2018)	Companisto, Fundsters, Innvestment and Seedmatch (GER)	Quali-quantitative: interviews, OLS	Funding level (percentage of funding)		
Malaga <i>et al.</i> (2018)	USA	Exploratory analysis			
Mamonov and Malaga (2018)	16 platforms from the USA	Logistic regression	Success binary		
Motyłska-Kuzma (2018)	Beefunds, Crowdway, Findfunds (POL)	Nonparametric correlation tests	Amount of raised funds, Success rate, Number of contributors		
Piva and Rossi-	SiamoSoci (ITA)	Probit	Success binary, Percentage of		

Table A1.
Sample overview

(continued)

Authors	Platforms and countries	Methodologies and techniques	Dependent variables	Investment speed	Panel data set
Lamastra (2018)			funding, Number of investors		
Barbi and Mattioli (2019)	Crowdcube (UK)	Univariate and multivariate models (OLS)	Capital raised, Number of investors		
Cumming <i>et al.</i> (2019a, 2019b)	Crowdcube (UK)	First stage: bivariate, probit regression. Second stage: generalized structural equation model (GSEM)	Success binary		
Kleinert and Volkman (2019)	Crowdcube (UK)	Qualitative: codebook; quantitative: Poisson regression	Funding raised		Yes
Mamonov and Malaga (2019)	Crowdfunder (Los Angeles)	Logistic regression models	Success, Partial success		Yes
Nitani <i>et al.</i> (2019)	Crowdcube (UK), Invesdor (FIN), Companisto (GER) and FundedByMe (SWE)	OLS, logistic regression and survival models (proportional hazards models)	Fundraising success (binary), Funding speed, Capital raised	Yes	
Rossi <i>et al.</i> (2019)	185 platforms	Negative binomial regressions	Platform success		
Usman <i>et al.</i> (2019)	Crowdfunder (UK)	Logistic regression, Tobit regression	Success binary, Number of backers, Funding amount		
Vismara (2019)	Crowdcube and Seedrs (UK)	Probit regressions, negative binomial regression	Success binary, Number of investors, Presence of professional investors		
De Crescenzo <i>et al.</i> (2020)	Crowdcube (UK)	Fuzzy-set qualitative comparative analysis	Success binary, Failure binary		
Kleinert <i>et al.</i> (2020)	Crowdcube (UK)	Negative binomial and logit regressions	Success binary, Number of investors		
Ralcheva and Roosenboom (2020)	Crowdcube and Seedrs (UK)	Logistic regressions	Success binary		
Xiao (2020)	AngelCrunch (China)	Qualitative: interviews			
Lim and Busenitz (2020)	Crowdfunder (Los Angeles)	Zero-inflated negative binomial and normal negative binomial regressions	Funding Raised		
Shafi (2021)	Crowdcube (UK)	Probit regressions, OLS	Success, Amount raised		

(continued)

Table A1.

Authors	Platforms and countries	Methodologies and techniques	Dependent variables	Investment speed	Panel data set
Andrieu et al. (2021)	Wiseed, Smart Angels, Sowefund, Anaxago (FRA)	OLS regression, iteratively reweighted least squares, propensity score matching	Percentage of funding		
Dority et al. (2021)	Alchemy Global, AngelList, Crowdfunder, EarlyShares, EquityNet, MicroVentures, OneVest, OurCrowd, Return on Change, Seed Equity, SeedInvest, WeFunder (USA)	Sentiment analysis; Tobit regression	Percentage of funding		
Meoli and Vismara (2021)	EquityCrowd (name disguised, country unknown)	Probit regression (other empirical settings also: panel Poisson, panel negative binomial regressions)	Success binary		
Vrontis et al. (2021b)	21 Italian platforms	Social network analysis, panel pooled OLS regression	Success ratio of platforms		Panel
Coakley et al. (2022)	Crowdcube, Seedrs, SyndicateRoom (UK)	OLS, probit regressions	Success binary, Capital raised, Overfunding		

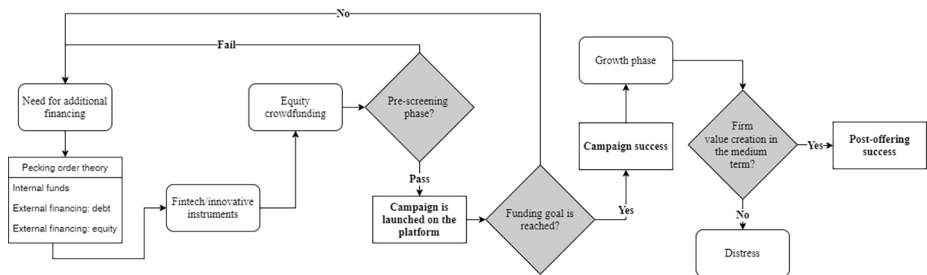
Table A1.

Appendix 3. The equity crowdfunding process and campaign outcome

Determinants of success/failure of an ECF campaign necessarily recall how this outcome is obtained, keeping in mind the entire process involved. Indeed, success derives not only from the ultimate result of a campaign but it rather involves a longer procedure that begins with the entrepreneur decision of opting for ECF financing and its subsequent admission to platform listing. In the case the entrepreneur chooses the ECF scheme (Fig. A6), the bid must first overcome a prescreening phase before launching the campaign, where the project is presented to an ECF platform for admission (Zhang et al., 2018).

In this phase, managers of the ECF platform analyze the business idea, the business plan and the entrepreneurial team, conducting a due diligence check and deciding whether to accept it (Kleinert and Volkmann, 2019). Only 10% of the projects successfully reach the public phase (Kleinert and Volkmann, 2019). Before going live, entrepreneurs could choose to start off with a soft launch in a

Figure A6. Stepwise representation of the ECF process



private-fundraising style, where founders' families and friends or the platform's network can have prior access to the funding so that a private head-start can boost the likelihood of being funded (Lukkarinen *et al.*, 2016). Once the campaign is open for funding, if it reaches at least its minimum goal, the new venture receives the raised financing resources. A smaller number of papers consider the postfunding dimension and possibly the value creation of the venture in a longer term (Walthoff-Borm *et al.*, 2018).

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