



Fundraising, Governance and Environmental Ethics: Evidence from Equity Crowdfunding

Silvio Vismara^{1,3} · Peter Wirtz^{2,3}

Received: 26 October 2023 / Accepted: 18 December 2024 / Published online: 16 January 2025
© The Author(s) 2025

Abstract

There is an important research tradition concerning the financial implications of social and environmental ethics. This study investigates the short- and long-term financial performance of ventures with explicit environmental commitments seeking to raise funds in equity crowdfunding (ECF) markets. Our results indicate that environmental orientation positively influences short-term funding performance, though only when accompanied by the costly signal of robust corporate governance mechanisms. In the long run, environmental orientation also positively impacts performance, albeit with only weak statistical significance when observed alone. Governance again serves as a positive moderator, but its effect is less significant relative to the short term. However, environmental orientation does feature a strongly significant positive impact on long-run performance when combined with a successfully conducted initial ECF campaign.

Keywords Equity crowdfunding · Environmental orientation · Business ethics · Entrepreneurial finance · Corporate governance · Performance

Introduction

In their contribution “The Worth of Values”, van Beurden and Gössling (2008, p. 409) state that “one of the oldest questions in moral philosophy is whether it pays to be a morally good person”. In the realm of contemporary finance, this ancient moral question can be transposed to the issue of corporate social and environmental responsibility. Brown (1998), for instance, asks if “stock market investors reward companies with reputations for social performance”. There is presently an impressive body of literature concerning the question of whether ethics are good for financial performance. A strong research tradition exists in the Journal

of Business Ethics on those issues, as exemplified by two important meta-analyses (Dixon-Fowler et al., 2013; van Beurden & Gössling, 2008). Overall, meta-analyses yield clear empirical support for the idea that the ethics of social and environmental responsibility have a positive impact on financial performance (van Beurden & Gössling, 2008). However, that is not necessarily true under all circumstances, and recent research conducted from a contingency perspective invites us to not only ask “if” ethics pay but “when” ethics pay, delving deeper into the specifics of different types of firms (Dixon-Fowler et al., 2013) in different institutional contexts. In fact, earlier business ethics research has demonstrated that the relative benefits and costs of ethics to a firm depend, among other things, on institutions (Gössling, 2003).

Financial markets are such institutions. Traditionally, most research on the financial performance of social and environmental orientation has been conducted on firms evolving in the more traditional financial market segments, where performance metrics are readily available. Crowdfunding is a recent source of entrepreneurial finance, and a claim has been made as to the potentially beneficial role of crowdfunding in supporting ethical ventures (e.g., Defazio et al., 2021; Johnson, 2015). Specifically, equity crowdfunding (ECF) is a very recent market which is still in the process

✉ Silvio Vismara
silvio.vismara@unibg.it; silvio.vismara@imtlucca.it

Peter Wirtz
pwirtz@em-lyon.com

¹ Department of Management, University of Bergamo, Via dei Caniana, 2–24127, Bergamo, Italy

² Laboratory for the Analysis of CompleX Economic Systems (AXES), IMT School for Advanced Studies Lucca, Piazza S.Francesco, 19–55100, Lucca, Italy

³ Emlyon Business School, 144 Av. Jean Jaures, 69007 Lyon, France

of becoming and not yet stabilized (Cumming et al., 2024). It appears that the ECF market has very specific characteristics, with exceptionally high levels of risk attached in terms of adverse selection and moral hazard (Cumming et al., 2021b). These very particular contingencies consequently warrant a specific examination of the link between environmental and social ethics and financial performance for ECF-backed ventures.

ECF has been identified as an important resource, not only in providing initial funding to environmental-oriented ventures (EOVs) but also in providing cognitive resources to the process of Environmental Orientation innovation (Troise et al., 2021). However, the possibility of making the economy more environment-friendly is contingent on EOVs eventually turning into economically sustainable businesses. A recent study by Cumming et al. (2024) focuses on crowdfunding platforms and documents that those that implement ESG criteria in selecting the ventures to list on their portal are more likely to attract more investors and, hence, to survive over time. Anecdotal evidence on the environmental orientation of ECF investors can be found, for example, in a statement made by Rhys Francis, a financial advisor who invests in Crowdcube in a personal capacity. Environmental credentials are one of his five principles for backing a company. “I drive an electric car, I’ve got solar panels, I’ve planted lots of trees, I have an air source heat pump,” he says. “So investing in these types of businesses is a continuation of what I do in my personal life.”¹

In this paper, we investigate the long-term financial performance of equity-crowdfunded EOVs to address the following research question: Are ECF-backed ventures that display environmental ethics associated with sustainable business performance for crowd investors?

Long-term viability requires long-term commitment and support from stakeholders such as investors to translate into an economically sustainable business (see, e.g., Fischer et al., 2020). For such support to materialize, the providers of resources need to derive utility from their investment. A fast-growing literature has recently focused on crowdfunding success of EOVs, where the emphasis is on short-term financial performance conceived as campaign success (Bento et al., 2019; Calic & Mosakowski, 2016; Calic et al., 2021; Caputo et al., 2022; Defazio et al., 2021; Farè et al., 2024; Gafni et al., 2021; Hornuf et al., 2021; Siebeneicher & Bock, 2022; Testa et al., 2020; Vismara, 2019; Wessel et al., 2021). In this context, short-term success corresponds to the ability

to successfully secure funds in a crowdfunding campaign and, specifically, to the attainment of the funding goal. There is, however, still a lack of research on the long-run (i.e., post-campaign) financial performance of ventures (Böckel et al., 2021; Wehnert & Beckmann, 2023). One notable exception is Mansouri and Momtaz (2022), who examine financial performance related to initial coin offerings conducted to fund sustainable entrepreneurship. However, blockchain-based markets are a very specific segment of the entrepreneurial finance landscape.

The present research is one of the very first to explicitly address both the short- and long-run financial performance of equity-crowdfunded EOVs. To do so, we examined a sample of 534 initial offerings made between 2014 and 2020 on Crowdcube and Seedrs, the UK’s two most important equity-crowdfunding platforms. In this sample, we identified 114 environmental-oriented ventures (EOVs). We worked from the assumption that environmental orientation is valued by investors (Cumming et al., 2024; Martzmark and Sussman, 2019). ECF markets have, however, been shown to have exceptionally high risks related to adverse selection and moral hazard (Cumming et al., 2021b). The presumed quality features of a firm, such as high ethical standards in terms of environmental responsibility, are hence credible to prospective investors if the venture makes a costly choice, which acts as an effective signal. This is the case when entrepreneurs render some of their control rights over the venture to future investors. Hence, corporate governance mechanisms are expected to be an important dimension in the relationship between environmental orientation and funding performance. Based on prior literature, we derived a set of hypotheses where environmental orientation is supposed to be a driver of short- and long-run financial performance. We tested these hypotheses, running various regressions with short-run performance and long-run performance as the dependent variables. Alternatively, we also use failure as the dependent variable, and to the best of our knowledge, we are the first to test the impact on successful and unsuccessful offerings simultaneously.

Our results corroborate the expected positive impact of environmental orientation on short-term funding performance, but only when this is associated with the costly signal of corporate governance mechanisms. Conditional on short-term success, we also observe a significantly positive impact of environmental orientation on long-run financial performance as measured by the probability of attracting additional funds after the initial offering. Hence, we find empirical evidence that, provided the right corporate governance mechanisms, an environmental orientation has not only ethical value but is also conducive to financial performance and economic sustainability for EOVs.

This study contributes to at least three fields of research: business ethics, sustainable (or green) finance, and

¹ This quotation is extracted from the Crowdcube portal (<https://www.crowdcube.eu/explore/blog/crowdcube/investing-in-a-more-sustainable-future>). Similar support can be found on the Seedrs’ portal (<https://www.seedrs.com/insights/blog/investing-insights-esg-sustainability>).

entrepreneurial finance (specifically ECF). The first major contribution is to business ethics, where we join the broader discussion aiming to understand if finance in general (Dixon-Fowler et al., 2013; Hockerts et al., 2022; van Beurden & Gössling, 2008) and, more specifically entrepreneurial finance (Fassin & Drover, 2017), is antagonistic or compatible with the ethics of social and environmental responsibility. We take this question to the quite recent but fast-developing ECF market, following the call by Dixon-Fowler et al. (2013) to take contingency seriously and examine this general question of business ethics in specific organizational and institutional contexts. As noted by Guedhami et al. (2023), recent research on some ethical aspects of microfinance has been facilitated by access to novel datasets, including crowdfunding, but we remain in the early stages of developing the ethics literature in this area. Grounding the paper in the business ethics literature, we focus on environmental orientation, which is indeed a major concern in contemporaneous business ethics (cf. the special issue of the *Journal of Business Ethics* introduced by de Lange et al., 2012). Specifically, we hypothesize that if crowd investors see value in the existence of EOVs per se (beyond monetary returns), they can be expected to support EOVs (Tenner & Hörisch, 2021; Testa et al., 2019). Such perceived value and the material support it triggers is a potential driver of venture success, not only over the short run (campaign success in initial ECF success) but also over the long run (successful follow-on funding or merger prospects). This raises of course the question of the materiality of environmental-oriented strategy beyond mere discourse and potential greenwashing. For that reason, investor support of EOVs most likely depends on the existence of organizational arrangements, such as corporate governance mechanisms that grant investors effective leverage over an EOV's strategy, as shown consistently in our empirical results.

Secondly, we contribute to the more general literature on sustainable or green finance (Edmans & Kacperczyk, 2022), where the impact of environmental orientation on investor performance has been a longstanding issue (Brooks & Oikonomou, 2018). But the entrepreneurial finance segment is still under-researched in this respect. There is presently emerging research on impact investing and sustainable development in the traditional venture capital segment (Barber et al., 2021). We operate with a specific focus on the alternative finance segment and, more specifically, environmental-oriented ECF. We analyze if equity-crowd investors can expect superior financial performance when they make ethical investment choices by backing EOVs.

Finally, there are few studies up to date related to post-campaign financial performance in ECF in general (Butticè et al., 2020; Coakley et al., 2022a; Drover et al., 2017b; Hornuf et al., 2018; Rossi et al., 2023; Signori & Vismara, 2018; Walthoff-Borm et al., 2018). We contribute to this

strand of literature and are the first to identify environmental ethics as a potential driver.

The remainder of this article is structured as follows. In Sect. “**Literature Review**”, we briefly review the literature on environmental orientation and performance issues for investors in general and in the ECF market in particular. Theoretical grounding is provided, and hypotheses on the link between environmental orientation and the performance of ECF-backed entrepreneurial firms are developed in Sect. “**Hypotheses**”. Sect. “**Research Design**” presents the empirical research design. Sect. “**Results**” contains a presentation of the results. We discuss these and conclude in Sect. “**Discussion**”.

Literature Review

The present research examines the influence of environmental orientation on the performance of ECF-backed ventures. In doing so, it contributes to investigating the general question of whether business ethics has a positive financial impact (van Beurden & Gössling, 2008) in a specific context. It should be noted that our study approaches performance specifically as financial performance. The latter is proxied by ECF-campaign success in the short-term and as follow-on funding success over the long run. Hence our research is different from papers that approach performance through global ESG metrics (Hussain et al., 2018), where environmental and social performance are measured through distinct metrics. Such an endeavor would be impossible at the present stage of development of the ECF market due to the absence of reliable data on ESG performance for young entrepreneurial ventures. In our research, environmental orientation is construed widely as a strategic commitment to the environment, and we study the latter's impact on financial performance.

Environmental Orientation and its Relation to Investor Performance

In their introduction to the special issue on sustainable finance, Edmans and Kacperczyk (2022) define sustainable finance as “the integration of environmental, social, and governance (“ESG”) issues into financial decisions” (p. 1309). Hussain et al. (2018) explicitly relate sustainable development to three dimensions: environmental, social, and economic. Sustainability is hence typically presented as a complex multidimensional concept, where the precise linkage and potential causal relationship between the various dimensions are still not well understood and, hence, an object of ongoing research. In the past, empirical studies concerning the link between sustainability and financial performance have mostly been conducted on samples of stock-listed

public corporations. Among those studies, the impact of various sustainability metrics on short-term stock returns has received much attention. Flammer (2013), for instance, examines the stock market reaction to the announcement of eco-friendly and eco-harmful events. She observes positive stock-price performance in the case of eco-friendly events and negative performance when eco-harmful events are announced.

More recently, Capelle-Blancard and Petit (2019) conduct an extensive event study where the authors examine the influence of public news concerning a firm's sustainability on its stock returns. They find an asymmetry in the reactions to positive and negative ESG news, where the former has no significant impact on stock returns, and the latter features significantly negative stock-price reactions. Hence, the relationship between sustainability and financial performance is far from trivial. Theoretical work in the field of business ethics suggests that there are costs and benefits related to ethical behavior in firms (Gössling, 2003). Environmentally ethical behavior has a price, because it restricts economic choice which may lead to forego short-term economic benefits. One example is the internalization of negative environmental externalities. The use of green production technologies, for example, which reduce CO₂ emissions and other polluting activities (for soil and water) are often more costly than more traditional technology with strong externalities. Organic farmers, for instance, produce lower volume and have an increased risk of crop destruction, because they ban chemical pesticides. Whether benefits exceed costs likely depends on various contingency factors (Dixon-Fowler et al., 2013; Gössling, 2003). Ultimately, this is an empirical question, and the answer is expected to be context-specific. In fact, research indicates that the average investor in financial markets puts a strong value on sustainability (Hartzmark & Sussman, 2019), and a meta-analysis conducted by van Beurden and Gössling (2008) concludes that "there is clear empirical evidence for a correlation between corporate social and financial performance". But an average positive impact does not signify that the ethics of environmental responsibility have economic benefits in all markets and for all firms. The authors themselves conclude that it would be beneficial to take future research further and study the "worth of values" in specific segments of groups of firms (p. 420). Dixon-Fowler et al. (2013) conduct research to go beyond the question "if" it pays to be green to better understand "when" it pays to be green. Their meta-analysis identifies various moderators of the relationship between environmental performance and financial performance, firm size being one of them. But not all small firms are equal, and young entrepreneurial ventures have specific characteristics, even more so when they seek funding on ECF platforms. In many contemporaneous empirical studies, ethical orientation in terms of social and environmental responsibility

is measured by using various ESG rankings. These rely on composite scores where the criteria used to measure each of the three dimensions of ESG (environmental, social, and governance), as well as their respective weight feature significant variance from one ranking to the other (Billio et al., 2024).

From a theoretical perspective, there are actually various tensions between the constituent dimensions of ESG, and resolving those tensions in an integrative framework is a demanding task (Hahn et al., 2015). The difficulty of defining a unanimously accepted multi-criteria metric for sustainability can be avoided by focusing on one of its three key dimensions only. Flammer (2013), for example, looks at stock-price performance related exclusively to the environmental dimension of sustainability. The meta-analysis conducted by Dixon-Fowler et al., (2013, p. 357) also explicitly focuses on the environmental dimension only.

Many of the above studies, however, have in common the fact that they were conducted using data from samples of stock-listed public corporations, where the dependent variable, performance, is measured using abnormal daily stock returns. Financial performance metrics are readily available in this specific context, as are ESG ratings (the independent variable) due to the public exposure of this kind of firm. But even in empirical fields where the various metrics to measure ESG as a proxy for ethical orientation are easily available, there are voices (Edmans, 2023) that make a plea to disaggregate ESG and focus research on separate dimensions for the sake of theoretical relevance: "Empiricists often use aggregate ESG scores, even if the question or identification strategy focuses on a specific issue. For example, a paper might study how a company's response to climate change news depends on its ESG rating. However, it may only be the E dimension that's relevant" (p. 12). We follow this lead and choose to focus on the environmental dimension of sustainability only. This is coherent with the finding by Cumming et al. (2024) that crowdfunding platforms with higher ESG scores are more likely to survive over time but, while G is the most significant factor to platform survival, E has increased in importance most recently. Hence, it makes sense, in the ECF market, to disaggregate ESG and focus on its most relevant dimensions only.

Financial Performance Measurement in Crowdfunding

Compared to public corporations, environmental orientation has received less attention in the case of young ventures. This is partly due to the evident lack of data, where stock-market returns (and also accounting metrics) are simply not publicly available. Entrepreneurial finance has consequently engaged in developing its own specific financial performance metrics. In studies related to ventures funded

by crowd-investors, financial performance is regularly proxied through campaign success, where the attainment of the initially set funding goal is seen as a measure of short-run performance (Defazio et al., 2021; Hornuf et al., 2021; Siebeneicher & Bock, 2022; Vismara, 2019).

Long-term financial performance metrics are less developed for ECF-backed entrepreneurial firms. In specific research efforts on the connection between crowdfunding and sustainability, most of the work to date has focused on the pre-campaign stage, and post-campaign research is still relatively under-developed, as observed in a recent systematic literature review (Böckel et al., 2021). Empirical research has however begun to engage in the endeavor of studying long-run success. One example is the seminal study by Cumming et al. (2019) on the importance of ownership structure as a driver of success over a longer time horizon than just initial campaign success. In their work, the authors identify an entrepreneurial ECF-backed firm “as successful when, after successfully raising equity in crowdfunding offerings, it either attracts further equity financing or delivers an exit opportunity to crowdfunding investors, either in the form of IPO or M&A” (Cumming et al., 2019: p.3).

Long-run financial performance is hence operationalized through the success in raising follow-on funding or successful exit. This approach is consistent with our research question focused on the economic sustainability of EOVs, where economic sustainability critically depends on ongoing support from various stakeholders, such as the providers of equity capital. Another recent example where post-campaign success is measured using follow-on funding is Buttice et al. (2020), who use the attraction of venture capital funding as a performance indicator. Hornuf et al. (2018) and Signori and Vismara (2018) also use various forms of follow-on funding as proxies for the long-run financial performance of ECF-backed ventures. Alternatively, Signori and Vismara (2018) report the failure rate of entrepreneurial ventures, which can be considered as a proxy for negative performance, and the authors show that failure is relatively low for firms that successfully completed an ECF campaign. However, none of these studies are specifically aimed at the impact of environmental orientation on such long-term performance.

Environmental Orientation and Corporate Governance

Prior research indicates a positive relationship between corporate governance and eco-friendliness. Yao et al. (2023) show that empowering minority shareholders by granting them effective online voting rights pressures firms into more eco-friendly behavior. This is consistent with Broccardo et al. (2022) who demonstrate the influence of effective shareholder voice in pushing the environmental ethics. Hence, shareholder empowerment through effective

corporate governance reduces the gap between ownership and control and limits managers’ discretion to engage in unethical behavior. In other words, it makes unecological behavior costly for entrepreneurs.

In the case of equity-based crowdfunding, crowd investors share the characteristics of minority shareholders (Cumming et al., 2021b). Ventures that seek funding on ECF platforms can opt for either one of two governance systems: (1) direct ownership or (2) the nominee governance system. Direct ownership leaves minority shareholders with the classical dilemma of the separation of ownership and control (Fama & Jensen, 1983), whereas the nominee governance mechanism bundles the voting rights of all crowd investors and hence confers on the nominee effective power of influence. Cumming et al., (2021b, p. 84) suggests that, in the case of ECF, corporate governance may play an important role in signaling value to potential investors. One of the roles of effective governance is to monitor moral hazard. In the case of ECF, it has been argued that platforms acting as nominees are the more effective monitors to curb moral hazard in the interest of the crowd-investors (Cumming et al., 2021b) because this organizational arrangement is a possible solution to the issues of the separation of ownership and control and free riding. Beyond the traditional forms of moral hazard extensively studied in the general literature on corporate governance, EOVs face a specific form of moral hazard, which is the risk that ventures could deviate in their actual behavior from their initial strategic commitment to environmental ethics, a phenomenon also qualified as mission drift in the broader literature on social enterprise (Grimes et al., 2019; Ramus & Vaccaro, 2017). The question is if platforms acting as nominees have specific incentives to monitor the moral hazard of mission drift. We believe they do. In fact, prior empirical work by Cumming et al. (2024) suggests that platform survival over the long run may depend on establishing a solid reputation in supporting environmental orientation. The ECF market is quite recent, and the various platforms compete for survival. The authors find, in this context, that platforms that feature environmental criteria for venture selection have relatively stronger chances of survival. If platforms do not live up to their monitoring duties towards investors who value environmental orientation, ultimately their reputation would be compromised, and their survival put at risk.

Hypotheses

Short-run Performance (Campaign Success)

Environmental orientation is likely to be positively perceived by potential backers for two reasons (Hartzmark & Sussman, 2019): (1) growing ethical commitment and positive

emotions linked to the environment which influences the utility of a significant and increasing part of crowd investors (Edmans & Kacperczyk, 2022; Heeb et al., 2023; Tenner & Hörisch, 2021; Testa et al., 2019), which means that making ethical investment choices makes investors feel good (a phenomenon also called warm glow), and (2) the potentially positive impact (real or perceived) of environmental ethics for future business prospects and, hence, long-run economic performance (Hornuf and Siemroth, 2023). Declaring ethical commitment to the environment in an ECF campaign may thus be highly valued by potential investors, leading to an increase in the probability of a venture's short-term success as measured by campaign success. Consequently, we may expect environmental orientation to act as a driver of short-run financial performance.

However, ethical behavior has not only benefits but also costs attached to it (Gössling, 2003). From a purely theoretical and general point of view, it is hence not easy to determine whether benefits in terms of utility increase are higher than costs. This most likely depends on various contingency factors, such as the institutional environment in which a firm operates (Dixon-Fowler et al., 2013; Gössling, 2003). It is ultimately an empirical question that needs to be investigated for each specific context. Recent research in finance finds that the average investor in the wider financial market puts a relatively stronger value on sustainability than he perceives costs attached. This is consistent with van Beurden's and Gössling's (2008) meta-analysis of the worth of values. This justifies our baseline hypothesis 1, which should be expected to hold if and only if ECF investors behave like the average investor in the wider traditional financial market.

Hypothesis 1 Environmental orientation is positively related to short-run venture performance (Campaign Success).

There are however number of reasons why we should assume that the ECF market's specific characteristics make it significantly different from the traditional segments of the financial market (and even the historical segments of entrepreneurial finance, such as VC). First, crowd investors are, to a large part, unsophisticated investors (unlike those who act in the mutual funds market analyzed by Hartzmark & Sussman, 2019). They may consequently have a hard time distinguishing between high-quality and low-quality ventures. Besides, crowdfunding markets are typically characterized by a particularly high degree of information asymmetry, which makes potential problems of adverse selection and moral hazard even more pervasive than in the traditional financial markets (e.g., Cumming et al., 2021b). The latter has in fact developed mechanisms to cope with these problems related to information asymmetry through specific signaling and monitoring mechanisms (such as rating agencies, analyst following, etc. for public corporations, and due

diligence, board membership, etc. for VC-backed firms), whereas the ECF market may still be prone to attract an exceptionally high proportion of "lemons" (Walthoff-Borm et al., 2018). In the relatively young ECF market, where many new platforms are created and where a lot of organizational experimentation takes place, it is hence hardly surprising that many ECF platforms also die and that corporate governance is one of the most significant dimensions of platform survival (Cumming et al., 2024). There are hence strong specificities of the ECF market in terms of its information economics (Cumming et al., 2021b), which imply potential differences concerning the link between specific ethical qualities (such as environmental orientation) and performance when compared to the traditional financial markets (as in Hartzman and Sussman, 2019). Under conditions of severe information asymmetry, it is difficult for a member of the crowd who has neither the experience nor the incentives to conduct thorough due diligence to distinguish between real environmental orientation and mere cheap talk. For self-declared environmental responsibility to be perceived as a real attribute of an ECF-backed venture, sending a credible signal can be a solution.

Signaling theory works from the premise that "actions speak louder than words". This means that to be credible, a signal must come at a cost and that the cost is inversely correlated to the truth of the information content the signal tries to convey to the imperfectly informed crowd. Ideally, the signal's cost will be prohibitive for anyone using it who does not meet the quality standards he displays. In his seminal paper on signaling, Spence (1978) applies this rationale to the quality of human resources and the value attached to such quality by potential employers in the labor market. Since there is information asymmetry in the labor market, high-quality employees have the incentive to make themselves known through costly signals. This rationale can be supposed to also apply to the ethical qualities of a firm, which may have a particular value for investors. Applied to our question of environmental ethics, this means that a firm's environmental orientation is not a signal, but one of the venture's attributes that a costly signal can transform into credible (and hence valuable) information. As Vismara puts it, "intentions are credible signals only when they are binding, and repercussions occur if the signal's senders do not follow through on their intended behavior" (Vismara, 2018, p. 34).

One way of making a signal costly to the entrepreneur is by construing governance mechanisms that confer on investors certain control rights. Leland and Pyle (1977) actually identify choice in terms of a firm's ownership structure as a potentially strong signal of quality. In ECF-backed ventures, the nominee shareholder structure has been pinpointed as an important specific governance mechanism to resolve problems of information asymmetry (Cumming et al., 2021b).

Cumming et al. (2021b) see the nominee structure as a solution to problems of ex-post misconduct and, hence, moral hazard. We go further and assume that, as a voluntary and irreversible choice when a funding campaign is initially launched, the adoption of the nominee structure may also serve as a credible and strong signal to resolve information asymmetry ex ante. The reason is that it commits the entrepreneur to undergo effective monitoring in the future. If, at any time in the future, he deviates from the initially displayed environmental orientation strongly valued by investors, effective governance should impose significant costs on the deviant entrepreneur. Hence, effective governance can be instrumental in resolving adverse selection problems. Sharing control comes at a cost to the entrepreneur because it allows the imposition of a penalty on behavior that deviates from declared intent. Effective corporate governance puts a check on the entrepreneur because it grants investors leverage on a venture's strategic decision-making.

But what is effective governance in the context of equity crowdfunding? Governance can be considered effective when control rights do not only exist on paper but when investors are given real power of influence. In that respect, ECF faces challenges comparable to the open stock market, where public firms face the separation of ownership and control (Fama & Jensen, 1983). In the ECF market, the problem of moral hazard is actually even stronger than in standard stock markets because exit is not an option for dissatisfied investors who lack an efficient and liquid market to sell their stock. There exist two forms of shareholder governance in ECF: direct ownership or the nominee structure (Butticè et al., 2020; Cumming et al., 2021b). Direct ownership leads to a dispersion of control and voting rights, giving each shareholder a potential voice but no effective control. Consequently, agency costs are expected to be relatively high under the direct ownership model (Butticè et al., 2020). The nominee structure bundles all crowd-investors' control rights, which are then exercised by the nominee, typically the platform, on behalf of the owners. This confers real influence and power. One may object that the nominee structure creates an agency problem of its own, where the nominee is the agent of the crowd and may thus pursue his or her own agenda and spoil the crowd investors. So the question arises of how the monitor is himself monitored. In this vein, Chen and Ma (2023) show that lead investors in the Chinese ECF market who typically exercise the control rights on behalf of a crowdfunding syndicate they form have a strong incentive to extract private benefits. However, the structure of the Chinese ECF market, as described in Chen and Ma (2023), is very specific and different from nominee ownership structures typically found on the UK ECF platforms we study. In fact, in our empirical setting, it is not a professional lead investor who puts together an

investment syndicate that he dominates; it is the platform itself that typically acts as the nominee. The platform actually has two types of incentives to act as a good agent to assure effective monitoring on behalf of the crowd: indirect and direct. Indirect incentives are related to reputation in an environment where ECF platforms struggle for survival (Cumming et al., 2024) and where a reputation of poor ethics can prove fatal. Platforms also have direct economic incentives to be effective monitors because they typically share in the value created at exit (Cumming et al., 2021b). Consequently, although there is perceived value in environmental orientation, self-declared environmental responsibility alone does not necessarily have an impact on funding performance in the ECF market where adverse selection is particularly strong (Walthoff-Borm et al., 2018). Effective governance, in turn, may have a positive moderating effect. When environmental orientation comes with a choice of effective governance, acting as a costly signal, we should observe a positive impact on campaign success according to signaling theory.

It should be noted that there is an alternative, albeit consistent, explanation to signaling theory concerning the value perceived by crowd investors in nominee-based governance. In fact, in the case of direct ownership, investors contributing small amounts of money have an incentive to free ride on the monitoring efforts of their co-investors to curb the risk of moral hazard where entrepreneurs may deviate from the promise of environmental orientation in the future. Such free-riding may lead to the breakdown of the market, and delegating the monitoring to a correctly incentivized third party (the platform as nominee), whose survival depends on satisfying crowd investor demands, is a possible solution to the free-rider problem (Cumming et al., 2021b).

Hypothesis 2 Environmental orientation is more positively related to short-run venture performance (campaign success) if offerings feature a nominee ownership structure.

Figure 1 summarises the set of hypotheses on the short-run performance.

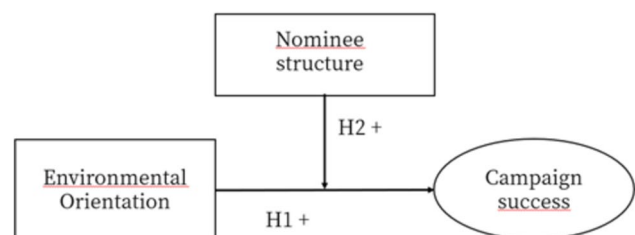


Fig. 1 Short-run effects

Long-run Performance

The rationale behind the baseline explanation of the influence of environmental orientation on long-run performance is similar to short-run performance: costs and benefits are attached to environmental orientation, in the short- and in the long run. Environmental orientation carries the promise of potentially strong benefits in terms of future market opportunities. Over the long run, as events unfold, some opportunities may receive confirmation in the market. Hence, initially perceived potential may turn into real benefits. Additionally, in terms of risks, over the long run, environmental norms tend to increase strongly, at least in Western European countries, and environmental issues may induce potentially strong losses due to litigation and consumer discontent. Based on the above, we suppose that, over the long run, the benefits of EO outweigh the costs.

Hypothesis 3 Environmental orientation is positively related to long-run venture performance.

In their integrative theoretical framework of corporate governance in the ECF market, Cumming et al. (2021b) apply information economics to address issues related to both pre-campaign adverse selection and post-campaign performance. We have argued *supra* that the nominee structure is an effective governance mechanism to address both (*ex ante*) adverse selection and (*ex post*) moral hazard. Long-run post-campaign performance partially depends on potential moral hazard. In the ECF market, with very strong informational asymmetry between entrepreneurs and non-expert investors from the crowd, it cannot be excluded that opportunistic entrepreneurs do not keep up with their promise of environmental responsibility. The nominee structure may act as an effective monitoring mechanism here to fight this kind of moral hazard. As Cumming et al., (2021b, p. 25) put it, “because nominees generally share in the value created at an exit, they have incentives to monitor. Thus, free rider problems among individual crowd investors are avoided. [...] Hence, a nominee structure may be more effective [than the direct ownership structure] to reduce possible moral hazard issues.”

Hypothesis 4 Environmental orientation is more positively related to long-run venture performance if offerings feature a nominee ownership structure.

Prior research suggests that short-term campaign success in ECF is a positive predictor of long-run performance (Messeni Petruzzelli et al., 2019). This may appear rather trivial. It is less trivial, however, to investigate if, in addition to this well-known direct effect, short-term success also adds explanatory power as a moderator in combination with

environmental orientation. There are several reasons for the positive perception of environmental responsibility and its potential role in the success of follow-on funding. One possible explanation is specific to the group of ethical investors, while other arguments are valid for all investor categories. One of the reasons is that environmental orientation carries ethical value, but only for a specific category of the investor community. These are the impact investors whose utility function is at least partially driven by ethics and not by prospects of financial return only. Doing “the right thing”, in ethical terms, may be a source of positive emotions for such investors (Heeb et al., 2023; Hartzmark & Sussman, 2019), and they may readily invest in environmental-oriented ventures, especially if these ventures have already proved to be successful over the short run. Hence, impact investors are driven to contribute to follow-on funding when ethics are at stake. Taste could also play a role, where “green” investments may simply be preferred to “brown” investments by certain individuals (Edmans & Kacperczyk, 2022). Hence, the odds of follow-on funding of environmental-oriented ventures should be expected to increase because they benefit from a potentially larger pool of investors than purely commercially oriented ventures. The reason is that this pool of resources extends to impact investors (i.e., impact venture capital funds, impact business angels).

Beyond ethical motives or taste, which only concern one (albeit growing) part of the contemporaneous investment community, discourse on environmental orientation may also be perceived as positive information with potentially strong implications for a venture’s future cash flows and, hence, its prospects for long term value creation for all investor types. That is because environmental responsibility can reduce risk related to environmental litigation or the growing arsenal of environmental norms and regulations. Environmental orientation also has the potential to create new business opportunities related to green tech, for example. This perceived positive influence of environmental orientation on future cash flows can be expected to be especially strong for ventures that send a positive signal concerning effective corporate governance and that have already demonstrated short-term success. In fact, Messeni Petruzzelli et al., (2019, p. 146) argue that “the [...] findings (related to commercial projects) supporting the “theorem” that better crowdfunding performance can favor project success in the market should be even more valid for the Environmental Orientation initiatives. That is, the role of crowdfunding [and campaign success] is likely to be even more crucial for the overall success of Environmental Orientation initiatives.” As noted before, there are costs and benefits attached to environmental orientation, and in the minds of investors, short-term campaign success may likely be an important argument to tip the scale in favor of benefits perceived to be stronger than costs. Hence, the combination of initial campaign success

with environmental orientation should be expected to be particularly conducive to long-run success.

Hypothesis 5 Short-run campaign success positively moderates the influence of EO on long-run performance.

The set of hypotheses on the long-run performance is summarized in Fig. 2.

Research Design

Sample and Data Sources

Being the largest market for ECF, the United Kingdom provides the best opportunity to investigate how crowdfunding investors consider the environmental orientation of ventures. Due to its status as the largest global market for ECF, the UK offers researchers a substantial pool of startups that have initiated ECF campaigns, regardless of the campaigns' ultimate success. Other countries also host ECF markets, but the volumes involved are comparatively lower in terms of both the number of campaigns conducted and the capital raised. Notably, even the United States presents a more constrained range of ECF offerings than the United Kingdom, as evidenced by research conducted by Rossi et al. (2021). Furthermore, a majority of studies in this field have predominantly employed the UK as their empirical setting, either concentrating on a single platform in isolation or encompassing the entire market (e.g., Buttice et al., 2020; Coakley et al., 2022a, 2022b; Cumming et al., 2019; Signori & Vismara, 2018; Vismara, 2016; Walthoff-Borm et al., 2018; 2018b). By centering our investigation on the United Kingdom, we not only align with established research practices but also enhance empirical consistency with prior studies that have similarly focused on this influential ECF landscape.

The two largest ECF platforms in the United Kingdom are Crowdcube and Seedrs. These platforms represent pioneering platforms in the domain of ECF, fundamentally reshaping the landscape of entrepreneurial finance. Launched in 2011, Crowdcube has played a crucial role in democratizing investment by connecting startups and growing businesses with a diverse array of investors. Its innovative model allows individuals to invest in exchange for equity, promoting financial inclusivity and community engagement. Similarly, Seedrs, founded in 2009, distinguishes itself through meticulous due diligence processes and a commitment to regulatory compliance. Seedrs provides a platform for a broad spectrum of investors, both individual and institutional, to participate in funding rounds and gain equity in promising ventures.

Ventures had to fulfill several criteria to be part of our final sample. First, follow-on offerings are removed to avoid endogeneity issues that may arise from the relationship between the initial campaign and the first follow-on success. Second, we focus on UK ventures only to reduce cross-country heterogeneity related to different reporting and regulatory frameworks and to limit the variety of extra-financial reasons for seeking crowdfunding in the UK. Third, we exclude mini-bond offerings and offerings of convertible bonds. Fourth, due to our focus on environmental ethics, we exclude firms operating in the Finance & Payments and the Insurtech sectors. Fifth, we exclude offerings for which we could not access the information about their business “idea” and the “market” (in Crowdcube) or the “key information” (in Seedrs) sections. This results in a slightly biased selection with a larger presence of successful offerings (54% of the offerings in our sample are successful, which is slightly above the 40% to 50% statistics reported in other papers such as Vismara, 2016; Coakley et al., 2022a, 2022b; Buttice et al., 2020; Rossi et al., 2023) but we have no reason to expect any bias about the environmental orientation or governance aspects of the offerings. These selection criteria resulted in a sample that comprises 328 initial equity offerings listed on Crowdcube and 206 in Seedrs in the period 2014–2020, for a total sample of 534 ECF offerings.

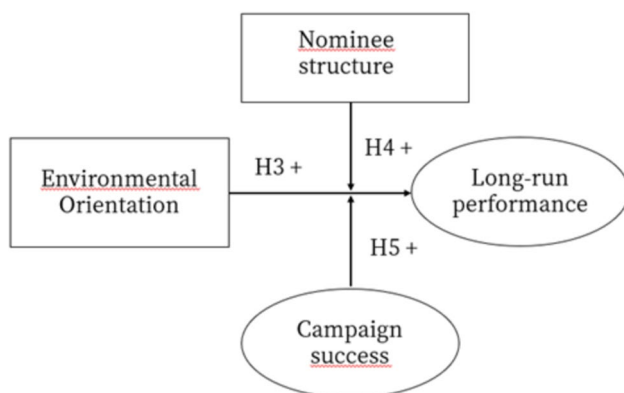


Fig. 2 Long-run effects

Identification of EOVs

To identify EOVs, we followed the approach of the “text as data” literature in economics (Gentzkow et al., 2019). We first performed a text analysis by inspecting the “idea” and the “market” (in Crowdcube) or the “key information” (in Seedrs) sections of the crowdfunding offerings. This was done using a web crawling algorithm to analyze the two crowdfunding portals (i.e., Crowdcube and Seedrs), as well as access internet archives to go back in time and capture historical data. We used the following 32 keywords (or combination of words) derived from previous literature (Adams et al., 2016; Mansouri & Momtaz, 2022; Vismara, 2019):

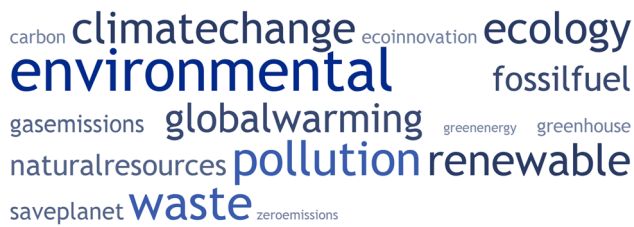


Fig. 3 Relative importance of sustainability keywords for the identification of 114 Environmental Orientation ventures (EOVs)

climate_change, natural_resources, pollution, waste, ecological, eco_innovation, eco-efficient, eco-effective, eco-design, ecology, environmental, renewable, fossil_fuel, carbon, gas_emissions, zero_emissions, co_emissions, coal_power, coal_projects, away_fossil, solar_wind, global_warming, save_planet, greenhouse, green_house, green_finance, green_investment, green_energy, green_deal, green_credentials, green_debt, new_green.² To limit the possibility of alternative meanings, this initial selection was scrutinized by using traditional human coding.

This method yielded the identification of 119 offerings. Since some keywords might have alternative meanings, this initial selection was scrutinized by the authors to exclude ventures that do not display Environmental Orientation. This led to the exclusion of 5 ventures, leaving the identification of 114 EOVs out of the original sample of 534 ventures (21.3%). In Seedrs, 48 out of 206 ECF offerings are EOVs (23.3%), while in Crowdcube, this ratio is 66 over 328 (20.1%).

Figure 3 illustrates the word cloud corresponding to the frequency of the keywords used to identify these ventures. Examples of EOVs in the sample are “The Cheeky Panda 100%”, which commercializes low-carbon bamboo tissue products; “Antaco”, which aims at making the world cleaner by converting organic waste into a solid biofuel; and “Mishergas Energy Recovery”, which develops sustainable

² Climate_change, natural_resources, pollution, waste are from the MSCI ESG Intangible Value Assessment; ecological, eco_innovation, eco-efficient, eco-effective, eco-design, ecology are from Adams et al., (2016); environmental and renewable are from Vismara (2019). Mansouri and Momtaz (2022) use a machine learning approach, creating an ESG-specific dictionary in the startup context. They start from 70 environmental “seed words”, reported in their Table I.A.1. From this list, we selected the following words (or combination of words) fossil_fuel, carbon, gas_emissions, zero_emissions, co_emissions, coal_power, coal_projects, away_fossil, solar_wind, global_warming, save_planet, greenhouse, green_house, green_finance, green_investment, green_energy, green_deal, green_credentials, green_debt, new_green. Note that we use single words that comprehend a number of combinations. For instance, by using “carbon”, we include 13 combinations in Mansouri and Momtaz (2022), such as carbon_emission, carbon_footprint, and low_carbon.

answers to environmental hazards whilst creating profitable business models.

Corporate Governance Mechanisms

UK ECF platforms historically have employed two types of governance mechanisms – direct and nominee ownership (Butticè et al., 2020; Coakley et al., 2022a; Walthoff-Borm et al., 2018). Under the direct ownership structure – originally associated with Crowdcube – investors directly own shares in the venture they help to fund. By contrast, the Seedrs nominee structure pools hundreds of individual investors from the crowd and accredited investors into a special purpose vehicle or nominee account. Typically, the platform acts as a nominee and, by implication, as the sole legal owner when it comes to exercising control rights, but individual investors remain the ultimate beneficial owners. Crowdcube introduced the possibility to opt for a nominee structure in 2015, resulting in a choice between direct ownership and nominee offerings within the same platform. Consequently, both options—direct and nominee structures—are currently available for firms seeking funds through Crowdcube.

The direct shareholder structure enables crowd investors to directly acquire ownership in the company. Under this arrangement, crowd investors obtain shares with both voting and preemptive rights if their investment meets or exceeds a predetermined threshold established by the entrepreneur. Conversely, investments below this threshold result in shares without voting and preemptive rights. Therefore, in direct ownership ECF offerings, investors directly own shares in the ventures, but small investors do not enjoy voting rights (Cumming et al., 2019). This leads to agency costs and conflicts between large and small investors.

The nominee shareholder structure stands as an alternative to the direct shareholder arrangement, wherein a single legal shareholder, known as the nominee, represents the interests of the crowd by holding shares on behalf of individual investors (Butticè et al., 2020). The nominee is endowed with decision-making authority in various matters during general meetings, encompassing issues such as company liquidation or the issuance of ordinary and preference shares. The nominee structure offers the advantage of a unified approach to monitoring and enforcing investors’ rights. Investors retain indeed the right to participate in dividend distribution and uphold fiscal benefits, such as tax reliefs linked to their investments (Coakley et al., 2022a), while ventures are relieved of the need to independently manage their crowd investors, avoiding tasks such as organizing large corporate events or ensuring attendance quorums at general meetings. However, a drawback of the nominee shareholder structure is the limited opportunity for entrepreneurs to

seek advice, networking, and mentoring from their investors (Walthoff-Borm et al., 2018).

Previous studies have highlighted that the nominee structure signals better investor protection (especially for the crowd) relative to direct ownership (Cumming et al., 2021b). It also minimizes coordination and related administrative costs for startups as the platform as the nominee manages the arm's length relationship between the shareholders and the venture founder team through electronic voting and updates and online meetings (Butticè et al., 2020). We measure *Nominee* as a dummy variable equal to one if the ECF offering is with a nominee structure. As reported in Table 1, we find that while nominee structure ECF offerings account for 61.4% of EOY ventures, they only account for 49.3% of the non-EOY ventures (statistical difference at 5%).

Outcomes

We analyze the impact of environmental orientation and governance on offering and post-offering outcomes. First, we investigate the *Short-term outcome*, measured with a dummy variable equal to 1 for offerings that collected at least the target amount of money. ECF platforms employ an all-or-nothing scheme. This means that offerings are successful only when funding goals are reached, and pledges are then transferred within six weeks from the escrow accounts to the venture's accounts. Investors thus become shareholders in the companies. When targets are not reached, all pledges are voided, and ventures do not receive any funding from the campaign. *Short-term outcome* measures, therefore, the

probability of the venture successfully raising funds in the initial campaign. This type of dependent variable has been used in many studies for ECF firms (e.g., Ahlers et al., 2015; Vismara, 2016).

Second, we measure the *Long-term outcome* of a venture that went through a crowdfunding offering by looking at what happens after the initial offering, in line with existing studies (e.g., Butticè et al., 2020; Coakley et al., 2022a, 2022b; Cumming et al., 2019; Hornuf et al., 2018; Signori & Vismara, 2018; Walthoff-Borm et al., 2018). This is done for both successful and unsuccessful offerings through a hierarchical criterion. First, (long-term) *Failures* are identified when firms are insolvent, liquidated, or dissolved following an offering. Failures are identified using Companies House, which is a government agency acting as the official registrar of UK companies. We use the first announcement date of the insolvency or liquidation as the failure event. Alternatively, a venture is identified as *Successful* when, after successfully raising equity in crowdfunding offerings, it either attracts further equity financing or delivers an exit opportunity to crowdfunding investors, either in the form of an IPO or M&A. Only one venture in our sample successfully underwent an M&A, while no IPO was registered. The time to the occurrence of the event is measured in months from the closing date of the initial ECF offering, as reported on platform websites. We use the date of completion as reported on the platform websites or of the private deal, as recorded in Crunchbase. We then cross-checked the information using Companies House. We did not observe any startup that failed after raising follow-up capital. Hence, there is no overlap

Table 1 Variables definition

Variable	Definition
Short-term outcome	Dummy = 1 if the equity crowdfunding offering is successful; 0 otherwise
Long-term outcome—failure	Dummy = 1 if the venture is insolvent, liquidated, or dissolved following the offering
Long-term outcome—successful	Dummy = 1 if the venture attracts further equity financing after the initial offerings or delivers an exit opportunity in the form of IPO or M&A
Environmental_oriented	Dummy = 1 if the campaign is Environmental-Oriented (see details on identification in Sect. “ Identification of EOYs ”); 0 otherwise
Nominee	Dummy = 1 if the offering is with a nominee structure; 0 if with direct ownership
Age	Age of the venture at the moment of the offering (years)
Positive_sales	Dummy = 1 if the venture has already reported positive sales; 0 otherwise
Total_assets	Total assets of the venture (natural logarithm of one plus total assets, in the regressions)
Funding_goal	Target capital to be raised (000£)
Equity_offered	Percentage of equity offered
Patents	Dummy = 1 if the venture has registered patents; 0 otherwise
Board_size	Number of directors at the beginning of the offering
VC-backing	Dummy = 1 if the venture has received finance from venture capital or other institutional investors prior to the offering; 0 otherwise
Exit_intention	Dummy = 1 if an exit strategy is planned within 5 years; 0 otherwise
Previous_Year_EOY	Instrumental variable measured as the fraction of EOYs of all equity offerings in the same platform in the previous year

Table 2 Descriptive statistics

	Mean	Min	Max	Successful	Unsuccessful	EOV	Non-EOV	Nominee	Direct	Seedrs	CC			
<i>Panel A: Descriptives</i>														
Short-term outcome	0.545	0	1	1.000	***	0.000	0.526	0.550	0.556	0.533	0.558	0.537		
Long-term—failure	0.247	0	1	0.144	***	0.371	0.193	0.262	0.242	0.253	0.243	0.250		
Long-term—Success	0.251	0	1	0.368	***	0.111	0.237	0.255	0.285	*	0.214	0.286	0.229	
EOV	0.213	0	1	0.206		0.222	1.000	***	0.000	0.253	**	0.171	0.233	0.201
Nominee	0.519	0	1	0.529		0.506	0.614	**	0.493	1.000	***	0.000	1.000	0.216
Age	3.160	0	21	3.520	***	2.729	2.613	***	3.308	2.912		3.427	2.910	3.317
Positive_sales	0.530	0	1	0.629	***	0.411	0.456	*	0.550	0.520		0.541	0.520	0.537
Total_assets (000£)	497	0.010	47.194	515	**	477	488		500	481		516	480	508
Funding_goal (000£)	305	100	5,000	318	*	289	311		303	321		288	321	295
Equity_offered	12.67	0.05	60	11.39	***	14.20	12.31		12.77	11.78	***	13.63	11.78	13.23
Patents	0.109	0	1	0.155	***	0.053	0.088		0.114	0.123		0.093	0.122	0.101
Board_Size	3.203	1	9	3.245	*	3.153	2.983		3.263	3.347	**	3.048	3.347	3.113
VC-Backing	0.195	0	1	0.206		0.181	0.184		0.198	0.209		0.179	0.209	0.186
Exit_Intention	0.086	0	1	0.089		0.083	0.061		0.093	0.087		0.086	0.087	0.085
<i>Panel B: No. observation</i>														
Full sample	534			291		243	114		420	277		257	206	328
Successful	291			291		0	60		231	154		137	115	176
Unsuccessful	243			0		243	54		189	123		120	91	152
EOV	114			60		54	114		0	70		44	48	66
Non-EOV	420			231		189	0		420	207		213	158	262
Nominee	277			154		123	70		207	277		0	206	71
Direct	257			137		120	44		213	0		257	0	257

This table reports the descriptive statistics (Panel A) and number of observations (Panel B) for the sample of 534 equity offerings. The tests compare successful vs unsuccessful offerings, Environmental Orientation vs non Environmental Orientation ventures and nominee vs direct ownership offerings. The significance levels are based on t-statistics. Statistical significance levels are at 1% (***), 5% (**), or 10% (*). The last two columns compare the averages of offerings in Seedrs vs Crowdcube (CC.)

between the *Failure* and the *Successful* outcome. To identify these follow-on funding events, we monitor companies in the sample from the closing date of their initial offering to December 2023. As a result, companies are observed over different time windows. Ventures that do not fall into the 'Failures' or 'Successful' categories are considered right-censored observations, truncated as of December 2023.

It is important to observe that, while short-term and long-term outcomes exhibit a significant correlation, an initial failure in equity crowdfunding does not preclude the possibility of achieving long-term success. As indicated in Table 2, 11.1% (27 out of 243) of offerings that did not achieve their funding targets in their initial equity crowdfunding campaigns (unsuccessful offerings) subsequently secured follow-on funding.³ The case of Wombat exemplifies the potential for long-term success, despite initial setbacks in equity crowdfunding. (Table 3) In 2018, Wombat,

a nascent company, unsuccessfully sought to raise £250,000 on Crowdcube, with a pre-money valuation of £730,000. Wombat continued to develop and refine its business model, culminating in a successful crowdfunding campaign on the same platform in 2022, where the company raised £3 million, reflecting a pre-money valuation of £23.5 million. This is an example of an unsuccessful crowdfunding offering followed by a successful one, categorized in our analysis as a long-run success after an initial short-run negative outcome. Companies that fail to achieve their goals through equity crowdfunding may also turn to private equity investors. For example, Wildanet was unable to raise equity crowdfunding capital in 2022 but successfully obtained significant private equity funding a year later.

Control Variables

Table 1 provides the list and the definitions of independent variables, which are defined in line with previous studies on ECF (for an excellent systematic literature review, see Mazzocchini & Lucarelli, 2022). *Age* is the proponent venture's age (in months). *Positive_Sales* is a dummy variable

³ While obtaining funding on the first attempt to ECF markets defines short-term success, securing funding on a second attempt represents a long-run success.

Table 3 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Environmental_Orientation	1												
(2) Nominee	0.06	1											
(3) Age	-0.14*	-0.04	1										
(4) Positive_Sales	-0.06	-0.03	0.28*	1									
(5) Total_Assets	-0.05	-0.04	0.41*	0.37*	1								
(6) Funding_Goal	0.01	0.08	0.23*	0.33*	0.05	1							
(7) Equity offered	-0.06	-0.14*	-0.08*	-0.07	0.11*	0.04	1						
(8) Patents	-0.07	-0.07	-0.09*	-0.23*	-0.29*	-0.05	-0.03	1					
(9) Board_Size	0.03	-0.04	0.09	0.11	0.19*	0.25*	-0.20*	0.12	1				
(10) VC-Backing	-0.02	0.06	0.02	0.16*	0.07	0.15*	-0.12	-0.01	0.05	1			
(11) Exit_Intention	-0.04	0.03	0.00	0.01	0.03	0.01	-0.02	0.01	0.07	0.01	1		
(12) Short-term Outcome	-0.00	0.02	-0.07	0.31*	0.06	-0.05	-0.09*	0.02	0.12	0.16*	0.03	1	
(13) Long-term—Failure	-0.06	-0.05	-0.07	-0.04	-0.14*	0.13*	-0.02	0.06	-0.03	-0.10	0.02	-0.24*	1
(14) Long-term—Success	-0.05	0.09	0.03	0.19*	0.07	0.08	-0.09*	0.06	0.07	0.18*	-0.03	0.29*	-

A star indicates a significance level of 1%. See Table 1 for the definition of the variables

equal to 1 if the venture has already reported positive sales. We control the venture’s size (*Total_Assets*), measured as the startup’s total assets (the natural logarithm of one plus total assets in the regressions). Total assets refer to the value of the balance sheet the year before the offering, expressed in millions of British pounds. We control for intellectual property rights by introducing a *Patents* variable equal to one if the venture has registered patents (measured as in using data from ORBIS). Regarding the structure of the offer, the target amount of capital to be raised (*Funding_Goal*) and the relative percentage of equity offered to investors (*Equity_Offered*) in each offering are measured as in previous studies (e.g., Ahlers et al., 2015; Vismara, 2016). We also control for some additional characteristics of corporate governance by controlling for *Board_Size*, which is defined as the number of directors as disclosed on the ECF platform’s website. Considering the startup phase of most ventures in our sample, the board of directors often comprises all the entrepreneurial team members. Building on prior research (e.g., Lo Monaco et al., 2024), we anticipate that larger teams will be preferred, as they can distribute and manage the organizational workload required for a funding round more effectively across multiple members. Companies that previously raised external financing, such as from venture capital or other institutional investors, are expected to be more successful in raising capital in ECF. Hence, we introduce a *VC_Backing* dummy, equal to one if the venture has received finance from venture capital or other institutional investors prior to the offering (Kleinert et al., 2020). The inclusion of exit strategy options remains a contentious topic in elucidating the outcomes of ECF. Early literature posits that such declarations may be perceived as mere “cheap talk” (Vismara, 2016), while recent studies suggest that they can enhance investor attraction and increase the likelihood of success (Kleinert et al., 2020) by mitigating liquidity risks. Hence, we include in our econometric analysis a dummy variable *Exit_Intention* equal to one if an exit strategy is planned within five years. Finally, we control for the industry starting from Crowdcube and Seedrs classification. The offerings are classified into the following ten sectors: Advertising & Marketing; Automotive & Transport; Clothing & Accessories; Data, Analytics & Programming; Energy; Entertainment & Games; Food & Beverage; Healthcare; Home & Personal; Travel, Leisure & Sport. As depicted in Fig. 3, the most represented sectors in the sample are Food & Beverage (92 offerings), Entertainment & Games (69), and Travel, Leisure & Sport (68). While in some sectors, EOVs are over 40%, such as Energy (42.4%) and Clothing & Accessories (41.5%), in others, EOVs are below 15%, such as Entertainment & Games (11.6%) and Travel, Leisure & Sport (14.7%) Fig. 4.

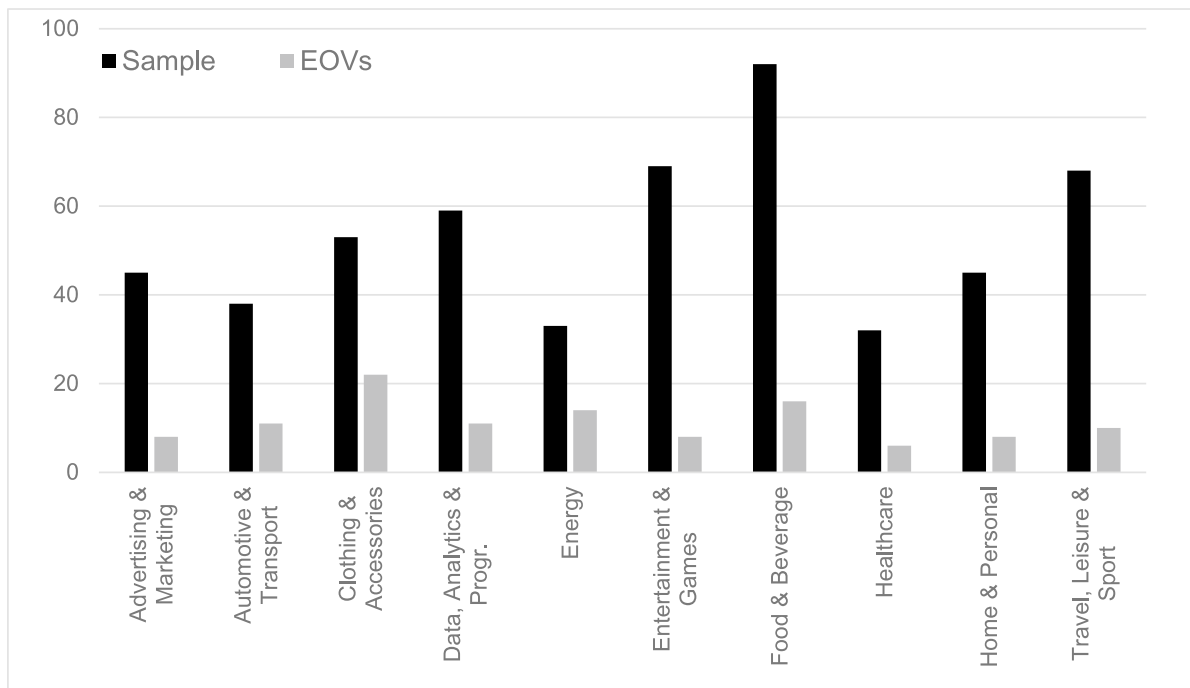


Fig. 4 Industry composition (full sample vs. EOVs)

Endogeneity

Endogeneity can arise for several reasons, often categorized into four categories: omitted variable, reverse causality, measurement error, and selection. First, selection bias might occur when observations are not randomly sampled but self-selected. While Seedrs has maintained its nominee structure, Crowdcube has allowed both nominee and direct ownership campaigns since February 2015. Accordingly, we refine our analysis by focusing solely on the subset of 277 Crowdcube offerings between February 2015 and 2020, thereby isolating the effect of the nominee ownership structure from platform-specific influences (see Sect. “[Introduction of Nominee Option in Crowdcube](#)”). Second, measurement error endogeneity. Data for our dependent variables are collected either from crowdfunding platforms (short-run) or from Crunchbase and Companies House (long-run). Since all our sample firms are domestic UK firms, they are all listed in Companies House. Hence, we can cover the full sample. Our main explanatory variable (EOV) is measured by performing text analysis of the “idea” and the “market” (in Crowdcube) or the “key information” (in Seedrs) sections of the crowdfunding offerings. Data for the control variables are collected directly from the crowdfunding platforms. Since our data are from direct sources and measurement error is more commonly a problem with surveys, we believe that measurement error is not a major concern in our study relative to the literature. Third, reverse causality

(or simultaneity). We argue that an environmental orientation is positively related to short-run and long-run venture performance. Our econometric approach uses two outcome variables, namely Short-term outcome and Long-term outcome. Both these dependent variables are measured after the definition of the text of the online offerings, on which the environmental orientation is assessed. Hence, the dependent variables are measured at the end of the campaigns, while our explanatory and control variables are measured at the launch of the campaigns, with no temporal overlap. However, the temporal condition is not sufficient to determine causality, in that higher-quality companies might be the ones that perform better and are also more sensitive (or can afford to be sensitive) to the environment. For this type of concern, the solution to simultaneity problems using instrumental variables is essentially the same as the solution to omitted variables’ endogeneity.

Omitted variable endogeneity is the main concern because higher-quality companies might be the ones that perform better and are also more sensitive to the environment. While we cannot unequivocally measure firm quality, we use a large set of controls. For instance, we control for *Positive_Sales*, which has been frequently used to proxy quality in the context of startups raising funds in ECF markets (Vismara, 2018). Nevertheless, we acknowledge that this is not enough to rule out concerns of omitted variables. Instrumental variables offer an avenue to alleviate such concerns. Identification requires that the instrument is

associated with the (supposedly) endogenous treatment variable (relevance), but is not directly related to the outcome (validity). In our case, the instrument should be highly correlated with the entrepreneurial orientation of the focal venture but not directly correlated with the probability of success of its ECF offering or the probability of follow-on financing.

We rely on *Previous_Year_EOV*, which is defined as the reference variable (i.e., environmental orientation) and is measured for each venture as the fraction of EOVs of all equity offerings listed on the same platform in the previous year.⁴ The underlying assumption is that when approaching ECF markets, ventures tend to conform. This approach is a common behavior to achieve legitimacy when raising external equity (Ponomareva et al., 2022) and is frequently used in corporate finance studies in contexts such as initial public offerings (Bertoni et al., 2014; Colombo et al., 2019; Fisch et al., 2022) or digital finance offerings (e.g., Block et al., 2022; Cumming et al., 2019, 2024; Huang et al., 2022; Vismara, 2019). Coherently, we observe that the environmental orientation of a venture listing on an ECF platform is correlated to the fraction of EOV listed on such a platform in the previous year (1.027***, Model 2 of Table 4). The relevance condition is therefore met. As for the exclusion restriction, we believe that the instrument *Previous_Year_EOV* should not have a direct influence on the outcome of ECF offerings. In other words, we do not expect that the environmental orientation of previous campaigns will directly affect the chances of short- or long-term success of a focal venture. Thus, we believe that the frequency of offerings by EOVs preceding each offering is a suitable instrumental variable in this study.

Models

Our analysis first examines whether environmental orientation affects the likelihood of success for crowdfunding offerings (*Short-term outcome*). Concerns about the potential endogeneity between an environmental orientation and the outcome of crowdfunding offerings are determined by the possibility that these two variables can be jointly affected by the firm's unobserved characteristics, which may result in spurious correlations. We address this issue by employing an instrumental variable approach, using a two-stage least squares (2SLS) regression. In the first stage, environmental orientation is instrumented by using the *Previous_Year_EOV* variable, as explained above. In the second stage, we employ probit regressions with *Short-term outcome* as the

dependent variable. The regression models include a set of control variables as defined above. Industry and year-fixed effects are finally included with a set of dummy variables.

After modeling the determinants of the success of the offerings, our analysis focuses on post-offering outcomes, identifying cases of long-run success and firm failure as possible outcomes. In our framework, older campaigns are observed for a longer time compared to more recent offerings. This diversity is taken into account using a competing risks proportional hazard duration model (Fine & Gray, 1999), fitted using the maximum likelihood approach. This approach allowed us to determine the hazard rate for the post-offering outcome scenario of interest in the presence of other possible competing scenarios, namely Failures and Successful. Ventures that do not belong to any of these two categories correspond to the right-censored observations. The time to the occurrence of the event is measured in months from the closing date of the initial ECF offering. To study post-offering outcomes, we implement a competing risk model using the full sample of 534 successful and unsuccessful offerings. We use the same set of control variables as used in the short-term analysis, with the addition of the Short-term Outcome variable as a regressor. We indeed expect that being successful or not in the ECF offering will affect the future prospects of the ventures.

To summarize, our system of equations includes a Probit using environmental orientation as the dependent variable in the first stage (Eq. 1) and the success dummy Outcome as the dependent variable in the second stage (Eq. 2). The Outcome variable is the Short-term Outcome for the analysis of the short-term performance, and the competing events Success vs Failure in the analysis of the long-term performance. In the second stage, Environmental orientation is instrumented with *Previous_Year_EOV*.

Our system of equations is as follows:

$$\text{Environmental Orientation} = \alpha + \beta_1 \bar{X} + \beta_2 \text{Previous_Year_EOV} + \varepsilon \quad (1)$$

$$\begin{aligned} \text{Outcome} = & \alpha + \beta_1 \text{Environmental Orientation} \\ & + \beta_2 \text{No min ee} + \beta_3 \text{Environmental Orientation} \\ & \text{XNo min ee} + \beta_4 \bar{X} + \varepsilon \end{aligned} \quad (2)$$

where \bar{X} contains the control variables and the year and industry fixed effects; ε is the error term.

Results

Univariate Analysis

Panel A of Table 2 reports the descriptive statistics for the sample of 534 ECF offerings. The univariate analysis shows

⁴ For example, for an ECF offering taking place in Seedrs on July 1, 2020, *Previous_Year_EOV* is measured as the number of EOVs over the total number of offerings listed in Seedrs in the period from July 1, 2019, to June 30, 2020.

Table 4 Short-run performance

	(1)	(2)	(3)	(4)	(5)	(6)
	Short-term Out- come	Environmen- tal Orienta- tion	Short-term Out- come	Short-term Out- come	Short-term Out- come	Short-term Outcome
Environmental Orientation	0.067 (0.112)	–	–	–	0.286 (0.208)	0.116 (0.218)
Environmental Or. x Nominee	0.125*** (0.042)	–	–	–	–	0.238*** (0.081)
Nominee	0.128 (0.091)	0.005 (0.015)	–	0.842* (0.454)	0.725* (0.420)	0.245 (0.178)
Age	– 0.267* (0.148)	– 0.265*** (0.079)	– 0.264* (0.143)	– 0.270* (0.147)	– 0.140 (0.100)	– 0.118 (0.099)
Positive_Sales	1.204*** (0.238)	– 0.368* (0.220)	1.207*** (0.246)	1.228*** (0.268)	1.612*** (0.321)	1.614*** (0.406)
Total_Assets	0.040 (0.081)	– 0.267 (0.261)	0.039 (0.079)	0.031 (0.080)	0.040 (0.077)	0.035 (0.072)
Funding_Goal	– 0.093 (0.192)	0.388 (0.408)	– 0.085 (0.212)	– 0.070 (0.148)	– 0.118 (0.150)	– 0.119 (0.143)
Equity_Offered	– 1.934** (0.893)	– 0.246 (0.261)	– 1.930** (0.891)	– 1.826* (0.938)	– 1.320* (0.691)	– 1.352* (0.712)
Patents	0.446 (0.326)	0.068 (0.082)	0.598 (0.416)	0.556 (0.392)	0.554 (0.391)	0.562 (0.394)
Board_Size	0.221 (0.140)	0.012 (0.014)	0.296** (0.147)	0.269* (0.145)	0.258* (0.149)	0.256* (0.146)
VC-Backing	0.027 (0.021)	0.021 (0.026)	0.024 (0.018)	0.028 (0.021)	0.028 (0.021)	0.027 (0.020)
Exit_Intention	0.082 (0.148)	0.028 (0.068)	0.098 (0.162)	0.095 (0.159)	0.096 (0.164)	0.098 (0.168)
Previous_Year_ EOV	–	1.027*** (0.109)	–	–	–	–
Constant	12.786*** (1.235)	– 0.030 (0.085)	9.785 (1.154)	12.028 (1.288)	12.293 (1.421)	11.623 (1.513)
No. obs	534	534	534	534	534	534
R ² or Pseudo R ²	0.34	0.12	0.31	0.34	0.43	0.39

Model 1 reports the results of an OLS regression on the determinants of the success of ECF offerings. The following models refer to a two-stage Probit using environmental orientation as dependent variable in the first stage (Model 2) and the success dummy Short-term Outcome as dependent variable in the second stage (Models 3 to 6). In the second stage, Environmental orientation is instrumented with *Previous_Year_EOV*. Model 3 includes the variables in our baseline specification. The Nominee dummy is added in Model 4, the Environmental Orientation in Model 5, and their interaction in the full Model 6. The variable definitions are in Table 1. Coefficients of industry and year effects are omitted for readability. Heteroscedasticity-robust standard errors are reported in parentheses. ***, **, * represent, respectively, significance levels below 1%, 5%, 10%

that ventures that successfully secure funding in their initial ECF offerings are more likely in the long run to further raise capital in follow-on rounds and are less likely to fail. In line with previous studies (e.g., Ahlers et al., 2015), successful ventures are, on average, more mature and with a consolidated track record of positive sales. In line with previous studies (Vismara, 2016), the relative amount of equity

offered is a signal of commitment toward the venture: by retaining more ownership, founders convey a positive signal to crowd investors. EOVs are not statistically different from other ventures in terms of the probability of short-term success. They are more likely to opt for a nominee structure and are, on average, younger than other ventures. The average offering with a nominee structure is characterized by a

lower fraction of equity offered relative to direct ownership offerings.

Panel B of Table 2 presents the contingency tables, cross-tabulating successful and unsuccessful offerings, EOVs and non-EOVs, and nominee versus direct ownership offerings. This provides insight into the number of observations categorized within each group. For instance, we observe that the sample includes 291 successful offerings, of which 60 are EOVs and 231 are non-EOVs. Out of the 114 EOVs, 70 opted for a nominee structure, while 44 utilized direct ownership. Notably, all 206 Seedrs offerings are nominees, whereas in Crowdcube, there are 257 direct ownership offerings and 71 nominees.

A correlation matrix among all the independent variables is shown in Table 3. The variance inflation factors (VIFs) associated with each model specification all fall well below the acceptable threshold of 10, indicating multicollinearity is not a concern.

Short-term outcome

Table 4 reports the results of testing the drivers of short-term performance (campaign success). First, we perform an OLS regression on the determinants of the success of ECF offerings. We find that environmental orientation is not significant (0.067, Model 1), while the interaction between environmental orientation and nominee structures is significant (0.125***, Model 1). Therefore, the results of this preliminary analysis support Hypothesis 2 but not Hypothesis 1. Next, we run a two-stage Probit model, using environmental orientation as the dependent variable in the first stage and the success dummy Short-term Outcome as the dependent variable in the second stage. The instrument is included in the first stage. We find that an environmental orientation by itself does not increase the chance of success of ECF offerings (0.286, Model 5). Hence, we do not find empirical support for our Hypothesis 1. A possible interpretation is that although highly valued for ethical reasons and because of its potentially positive impact on future cash flows, young ventures face extreme information asymmetry. However, when a signal is sent concerning effective corporate governance designed to contain moral hazard by granting crowd investors effective control over entrepreneurs' ethical behavior and respect for their sustainability engagement, things change. The results of the interaction between environmental orientation and nominee structure (0.238***, Model 6) are consistent with Hypothesis 2, which predicted that environmental orientation is more positively related to short-term venture performance if offerings feature a nominee ownership structure. The environmental orientation matters when crowdfunding investors can collectively influence the firms' decisions. With the signal of effective governance in place, environmental orientation becomes

credible information to investors. The chances of succeeding in an ECF campaign actually rise by more than 20% for EOVs with a nominee ownership structure when compared to simply commercially oriented ventures without specific sustainability engagements.

The main control variables that were found to be relevant in prior research are significant and carry the expected signs. Namely, positive sales have a strongly positive impact on campaign success, whereas the proportion of equity offered is negatively related to campaign success. This was expected since the proportion of equity retained by the entrepreneur signals her confidence in her venture's prospects and future performance because he puts a relatively large proportion of his wealth at stake. Similarly, board size is positively related to the probability of success.

Long-Term Outcome

Table 5 reports the results on how environmental orientation relates to the post-offering outcomes. Environmental orientation does not play a significant role in general (0.216*, Model 3), but it is significant for successful offerings: the effect of short-term funding success on long-run performance is higher for ventures with an environmental orientation. This result is highly significant at the 1% level (0.860***, Model 7). Remarkably, the economic impact of interacting previous success with environmental orientation is even stronger than for previous success taken by itself. So clearly, environmental orientation strongly matters for long-run success. This evidence lends support to our Hypothesis 5. Hence, we conclude that short-run success positively moderates the relationship between environmental orientation and long-run performance performance. The same variable also positively influences failure, albeit to a lesser degree and less significantly (0.356*, Model 8). One possible explanation is that environmental orientation positively influences expected future performance and also risk. The latter is consistent with theoretical work suggesting that environmental orientation carries not only specific benefits but also specific costs (e.g., Gössling, 2003). For certain EOVs, those specific environmental costs likely outweigh the benefits of environmental orientation. For most EOVs, however, the benefits seem to outweigh the costs. A successful short-term financing campaign is more likely than for non-EOVs to lead to good long-term performance, while a successful short-term financing campaign does not seem to reduce the risk of failure for EOVs, whereas it does for non-EOVs. Consequently, a crowd-investor who invests in a portfolio of EOVs is expected to achieve gains more frequently than losses. This interpretation is also consistent with the recent empirical finding at the platform level by Cumming et al. (2024) that platforms with a high proportion of EOVs have better survival rates than those where the E-scores are

Table 5 Long-run performance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Success	Failure	Success	Failure	Success	Failure	Success	Failure
Short-term Outcome	0.742*** (0.148)	- 0.408*** (0.120)	0.750*** (0.153)	- 0.448*** (0.119)	0.765*** (0.160)	- 0.452*** (0.128)	0.616*** (0.207)	- 0.485*** (0.126)
Short-term x Env. Or	-	-	-	-	-	-	0.860*** (0.314)	0.356* (0.210)
Environm. Orientation	-	-	0.216* (0.124)	0.153 (0.216)	0.158 (0.099)	0.082 (0.194)	- 0.022 (0.024)	0.061 (0.156)
Envir. Or. x Nominee	-	-	-	-	0.261* (0.152)	0.009 (0.011)	0.197 (0.159)	0.011 (0.009)
Nominee	0.054** (0.026)	- 0.138 (0.584)	0.047** (0.023)	- 0.139 (0.577)	0.037* (0.020)	- 0.114 (0.486)	0.031 (0.028)	- 0.088 (0.427)
Age	- 0.204 (0.137)	0.190 (0.181)	- 0.228 (0.147)	0.188 (0.182)	- 0.237 (0.148)	0.192 (0.188)	- 0.228 (0.145)	0.192 (0.185)
Positive_Sales	0.792** (0.311)	- 0.951** (0.473)	0.845*** (0.325)	- 0.968** (0.473)	0.855*** (0.312)	- 0.968** (0.467)	0.851*** (0.312)	- 0.896* (0.470)
Total_Assets	1.328 (1.083)	- 0.069 (0.119)	1.292 (1.056)	0.124 (0.231)	1.223 (1.044)	- 0.109 (0.193)	1.355 (1.096)	0.103 (0.157)
Funding_Goal	0.205* (0.123)	- 0.360 (1.225)	0.268* (0.146)	- 0.396 (1.138)	0.212* (0.125)	- 0.414 (1.316)	0.195 (0.120)	- 0.355 (1.212)
Equity_Offered	- 0.020 (0.017)	- 0.015 (0.019)	- 0.022 (0.018)	- 0.011 (0.015)	- 0.019 (0.016)	- 0.008 (0.014)	- 0.019 (0.017)	- 0.009 (0.014)
Patents	0.485* (0.292)	0.201 (0.182)	0.478 (0.295)	0.208 (0.184)	0.476 (0.296)	0.208 (0.185)	0.469 (0.298)	0.211 (0.186)
Board_Size	0.205* (0.112)	- 0.037 (0.104)	0.201* (0.114)	- 0.039 (0.105)	0.194 (0.120)	- 0.038 (0.107)	0.187 (0.123)	- 0.040 (0.116)
VC-Backing	0.064*** (0.024)	- 0.074 (0.066)	0.059** (0.025)	- 0.068 (0.072)	0.059** (0.026)	- 0.07 (0.071)	0.058** (0.027)	- 0.069 (0.068)
Exit_Intention	0.158 (0.152)	- 0.109 (0.071)	0.156 (0.149)	- 0.111 (0.072)	0.155 (0.149)	- 0.111 (0.071)	0.151 (0.150)	- 0.110 (0.070)
No. obs	534	534	534	534	534	534	534	534
Wald Chi-squared	737.4	50.5	767.3	50.9	931.2	63.2	937.5	85.0

Competing risks regression on long-term performance, with three possible outcomes, i.e., Success (odd-numbered Models), Failure (even-numbered Models), and active ventures being the baseline outcome. Models 1 and 2 include the variables in our baseline specification, the Nominee dummy and the Short-term Outcome as independent variables. The Environmental Orientation is added in Models 3 and 4, and their interaction in Models 5 and 6. In Models 7 and 8, it is included an interaction between Short-term Outcome and Environmental Orientation. The variable definitions are in Table 1. Coefficients of industry and year effects are omitted for readability. Heteroscedasticity-robust standard errors are reported in parentheses. ***, **, * represent, respectively, significance levels below 1%, 5%, 10%

low. This has important implications concerning the question of environmental ethics, which also pays off economically for ECF-backed ventures. Our results show that they do on average. This also has policy implications. It makes sense to promote environmental ethics on a large scale in EFC markets. The latter could become a valuable tool in the promotion of sustainable development goals.

It is also remarkable that, over the long run, the signal related to the nominee structure seems to fade. While it was significant in the explanation of short-term success, it lost its significance over the long run (Models 7 and 8). Specifically, we find limited support (0.261*, Model 5) for our

Hypothesis 3, which suggests that environmental orientation is more positively related to long-run venture performance if offerings feature a nominee ownership structure. There may be several reasons for this. Hypothesis 2 is based on the assumption that effective governance acts as a positive signal when information asymmetry is strong. Long-term success is measured after an initial offering. Consequently, the firm has already acquired a track record at that point, and information asymmetry decreases.

When checking control variables, we observe, once again, a strongly positive impact of positive sales on performance (0.792***, Model 1), this time measured over a long-time

horizon. Positive sales are also negatively related to failure. Not surprisingly, the success of the initial offerings matters, as successful offerings are more likely to achieve long-term success and less likely to fail. Both results are consistently significant at the 1% level (0.742***, Model 1). Initial campaign success reduces information asymmetry for follow-on investors by starting to create a positive track record. This increases the odds of raising additional funds.

Introduction of Nominee Option in Crowdcube

Crowdcube and Seedrs have historically employed two distinct governance mechanisms in their operations: direct ownership and nominee ownership. Under the direct ownership structure, originally associated with Crowdcube, investors directly acquire shares in the ventures they contribute to funding. In contrast, Seedrs' nominee ECF structure consolidates investors into a special-purpose vehicle or nominee account. While Seedrs has maintained its nominee structure, Crowdcube has allowed both nominee and direct ownership campaigns since February 2015. These changes in governance and offering structures underscore the importance of examining governance structure in ECF firms. However, they also raise concerns about self-selection. Prior to February 2015, the choice of platform for listing campaigns already implies an endogenous selection between the two governance structures.

To alleviate this concern, we refine our analysis by focusing solely on the subset of 277 Crowdcube offerings between February 2015 and 2020, thereby isolating the effect of the nominee ownership structure from platform-specific influences. Table 6 reports the results of the short-term and long-term analysis.

For the short-term performance, we replicate the two-stage Probit using environmental orientation as dependent variable in the first stage (Model 1) and the success dummy Short-term Outcome as dependent variable in the second stage (Model 2). The instrumental variable *Previous_Year_EOV* is measured for each venture as the average of all equity offerings in the previous year in the ECF platform Crowdcube. The results of the main analysis are confirmed, although with a slightly lower statistical significance. Consistently with Hypothesis 2, an environmental orientation increases the probability of success of ECF offerings if combined with the nominee ownership structure (0.282**, Model 2). For these offerings, the structure of the ECF matters, as the fraction of equity offered is a predictor of success (−0.584**, Model 2). A high percentage of equity offered may send a negative signal about possible opportunistic behavior. This result is coherent with previous studies on the platform Crowdcube (e.g., Coakley et al., 2022a; Vis-mara, 2016) and other platforms (e.g., Ahlers et al., 2015).

For the long-term performance, we replicate the competing risks regression, with three possible outcomes, i.e., Success (Model 3), Failure (Model 4), and active ventures being the baseline outcome. The results confirm that an environmental orientation has a positive influence on long-run performance for ventures that successfully complete an initial ECF offering (0.628**, Model 4), thereby supporting Hypothesis 4. More generally, the success of the ECF offering and the positive sales track record prior to the offerings are strong indicators of both increased likelihood of securing follow-up funding post-offering and decreased probability of failure.

Discussion

Starting from the general question of the “worth of values” (van Beurden & Gössling, 2008) to financial investors, we set out to delve deeper into the very specific context of the ECF market. This market is particularly interesting because the members of the crowd are, to a large extent, quite unsophisticated in terms of financial skills and, hence, do not represent the average investor that has typically been investigated in prior studies of more traditional financial markets (e.g. Hartzmark & Sussman, 2019). Another distinctive feature of the ECF market is that issues related to adverse selection and moral hazard are relatively stronger than in the traditional markets, not only for public firms but also for VC-backed firms (Cumming et al., 2021a; Walthoff-Borm et al., 2018), which may affect the values-worth relationship observed in prior studies (Dixon-Fowler et al., 2013). To the best of our knowledge, our study is the first to simultaneously address short-term funding performance and long-run post-campaign performance of ECF-backed ventures that display a strong environmental orientation. We find that the overall positive impact of social and environmental ethics on positive financial outcomes observed in prior research (Dixon-Fowler et al., 2013; van Beurden & Gössling, 2008) also holds in the ECF market, but only when specific governance mechanisms (such as the nominee structure) are chosen to resolve the particularly strong challenges related to information asymmetries.

Beyond business ethics, we also make at least two significant contributions to the ECF literature. First, we document that environmental orientation has a positive impact on (short-term) campaign success, but only when it is combined with effective corporate governance. Investors in equity capital logically base their investment decisions on the (real or perceived) prospects of future cash flows. Alternatively, they can also be guided by positive emotions triggered by ethical investment choices (warm glow) (Hartzmark & Sussman, 2019). We observe a positive impact of environmental orientation on ECF-campaign success, which hence implies that

Table 6 Nominee option in Crowdcube

	(1)	(2)	(3)	(4)
	Environmental Or	Short-term outcome	Success	Failure
Short-term outcome	–	–	0.548***	– 0.347***
			(0.164)	(0.118)
Short-term x Env. Or	–	–	0.628**	0.314
			(0.281)	(0.195)
Environm. orientation	–	0.096	0.018	0.061
		(0.128)	(0.021)	(0.156)
Envir. Or. x nominee	–	0.282**	0.218	0.008
		(0.118)	(0.141)	(0.007)
Nominee	0.008	0.185*	0.056	– 0.053
	(0.021)	(0.098)	(0.036)	(0.186)
Age	– 0.265***	– 0.060	– 0.192	0.084
	(0.079)	(0.093)	(0.126)	(0.091)
Positive_sales	– 0.244	1.375***	0.724***	– 0.744**
	(0.186)	(0.521)	(0.287)	(0.349)
Total_assets	– 0.117	0.028	0.838	0.082
	(0.093)	(0.051)	(0.744)	(0.107)
Funding_goal	0.526	– 0.184	0.206	– 0.428
	(0.437)	(0.165)	(0.134)	(0.620)
Equity_OFFERED	– 0.149	– 0.584**	0.014	– 0.008
	(0.218)	(0.292)	(0.010)	(0.011)
Patents	0.042	0.408	0.258	0.047
	(0.069)	0.368	(0.185)	(0.084)
Board_size	0.027	0.214	0.025	– 0.038*
	(0.021)	(0.141)	(0.018)	(0.021)
VC-backing	0.014	0.018	0.042**	– 0.057
	(0.020)	(0.016)	(0.017)	(0.041)
Exit_intention	0.038	0.116	0.086	0.042
	(0.052)	(0.148)	(0.054)	(0.066)
Previous_year_EOV	0.834***	–	–	–
	(0.142)	–	–	–
No. obs	277	277	277	277
Pseudo R ²	0.10	0.28	–	–
Wald Chi-squared	–	–	726.2	91.5

This Table replicates the analysis focusing solely on the subset of 277 Crowdcube offerings between February 2015 and 2020. First, for the short-run performance, we replicate the two-stage Probit using environmental orientation as dependent variable in the first stage (Model 1) and the success dummy Short-term Outcome as dependent variable in the second stage (Model 2). For the long-term performance, we replicate the competing risks regression, with three possible outcomes, i.e., Success (Model 3), Failure (Model 4), and active ventures being the baseline outcome. We report only the results of the full models (i.e., Model 2 corresponds to Model 5 of Table 4, while Models 3 and 4 correspond to Models 7 and 8 of Table 5). The variable definitions are in Table 1. Coefficients of industry and year effects are omitted for readability. Heteroscedasticity-robust standard errors are reported in parentheses. ***, **, * represent, respectively, significance levels below 1%, 5%, 10%

investors see potential in green strategy to strengthen future cash flows (or, more generally, to enhance their personal utility, even beyond future cash flows, through perceived ethical benefits, for example). But in a situation of exceptionally severe information asymmetry, there is strong uncertainty concerning the materiality of green strategy beyond mere discourse (Drover et al., 2017a). Hence, effective corporate

governance acts as a positive signal, which reduces information asymmetry *ex-ante*. Environmental orientation alone is not sufficient to heighten the chances of EOVS' campaign success when compared to other ventures. Prior research has shown that the nominee structure acts as an effective governance mechanism in the pursuit of lowering agency costs (Butticè et al., 2020; Coakley et al., 2022a). Setting up

a nominee structure in an ECF campaign can thus be considered a positive signal for future investors. It enhances the credibility of environmental orientation. Our results show that the corporate governance signal makes the difference. Beyond the impact of environmental orientation on short-term crowdfunding success, our findings are thus consistent with recent research on the importance of corporate governance in ECF more generally (Cumming et al., 2021b). Cumming et al. (2019) are actually the first to examine the impact of the separation of ownership and control on an ECF platform. Such an ownership structure naturally creates a situation where information asymmetry is strong, and corporate governance mechanisms reduce the risks concerning the prospects of future cash flows. To the best of our knowledge, we are the very first to highlight the role of governance in the success of environmental-oriented entrepreneurial strategies.

Second, we show that most ventures that are successful in an ECF campaign in the short run, are also economically sustainable over the long run as they manage to attract additional resources (follow-on funding). That is true for EOVs and non-EOVs. This may appear trivial, and it is consistent with prior research, which has shown that ECF-campaign success is a strong driver of long-run performance in general. But environmental orientation and initial campaign success combined make a real difference. The interaction effect is strong and highly significant, and it contributes to the explanation beyond the observed direct effect of short-term performance alone. The combined positive effect of environmental ethics and short-term financial performance on long-run performance is highly significant and stronger than the related observed increase in risk. This observation of a combined effect (as demonstrated by the strongly significant result for Hypothesis 5) is not trivial. Environmental orientation clearly adds explanatory power to prior explanations of the determinants of the long-run success of ECF-backed ventures.

Today, there is much debate about the materiality of green corporate strategies vs. simple greenwashing. Our results indicate that crowd investors who value environmental responsibility do not naively trust self-declarative statements about green business, nor do they simply want to express their attitude in vocal statements (voice only), but they seek effective influence in governance (the nominee structure) as a way to control materiality. This means that effective corporate governance is important for success in green entrepreneurship. In other words, sustainability has become an important ethical standard, but its effective implementation and impact on firm success depend on the corporate governance mechanisms.

We demonstrate that ethics pay off in ECF of EOVs, but only if the sustainability discourse is backed by signaling the existence of appropriate governance mechanisms. This is especially true for short-term success. Once proved

successful in an initial campaign, ECF-backed firms are also high performers over the long run, more so if they feature an environmental orientation. The governance signal loses, however, its strength over the long run. That is hardly surprising since signals have the most value when information asymmetry is strong. Over the long run, EOVs acquire a track record, and information asymmetry decreases. Short-term performance, which is itself enhanced by governance mechanisms, substitutes as a strong signal for follow-on investors.

These results have practical implications. We have demonstrated that ECF can be an interesting tool in promoting ethical, environmental-oriented investment. ECF platforms can promote sustainability. But if they seek to do so successfully, they have a strong interest in promoting the nominee ownership structure. By doing so, they could develop a reputation as effective gatekeepers for environmental-oriented investments. Crowd investors who are interested in supporting ethical standards of protecting the environment should give priority to EOVs that adopt the nominee ownership structure for their crowdfunding campaign. This is instrumental in selecting only those ventures where it can be expected that the entrepreneurs will eventually live up to their self-declared ethical standards. Once an EOV successfully completes a crowdfunding campaign, it also has a strong probability of being a high performer over the long run. It should be noted that short-run success enhances long-run performance for crowd-backed ventures in general. However, this effect is observed to be significantly stronger for EOVs than for non-EOVs. Hence, crowd investors who wish to support environmental sustainability during crowdfunding campaigns have a high chance of reaping long-run economic benefits from the ethical orientation of their investment.

Of course, our research also has limitations. First, we worked on a sample of ECF campaigns exclusively drawn from UK-based platforms. There is no guarantee that the results can be extended to other national contexts, provided that national business culture and institutions may have a bearing on the appreciation of initiatives related to the environment (Farè et al., 2024). One example is the Chinese ECF market, where crowdfunding campaigns are typically investor-led, which induces specific agency problems (Chen & Ma, 2023). It is not certain that the crowd reacts in the same way to sustainability everywhere, nor is the nominee structure necessarily a universally effective signal. Hence, future research may benefit from extending our work to different national contexts. However, the exclusive focus on the UK has the advantage that this ECF market is the best developed and one of the most active in the world, which guarantees a high degree of reliability of our data and results.

Second, ECF markets provide ventures with the opportunity to raise finance through equity offerings in the primary

market. Coherently, this is the focus of our paper. However, ventures with better fundraising performance do not necessarily have better financial performance, as Hartzmark and Sussman (2019) find that mutual funds with higher sustainability scores attract more investor capital, but they don't outperform any of the lowest-rated funds in terms of returns. Unfortunately, ECF platforms typically do not have secondary markets. For example, in the 'Risk Warning' section of Crowdcube, investors are cautioned that 'there is no guarantee you will find a buyer' due to the absence of a secondary market. Without a liquid market to exchange shares, measuring 'continuous holding period return' is not feasible except by referring to discrete exit events (Signori & Vismara, 2018), as we do in this paper. If secondary markets develop in the near future, a more comprehensive analysis should include estimates of returns on investments in ECF. Also, our sample size does not allow us to investigate whether ventures that fail on their first attempt and succeed later have better or worse chances of long-term success compared to those that succeed from the start. However, it is reassuring that 27 out of 243 offerings that did not achieve their funding targets in their initial equity crowdfunding campaigns (unsuccessful offerings) subsequently secured follow-on funding. It seems that venture managers also learn from unsuccessful attempts.

Third, a limitation of this study is that the direct incentive of ECF platforms is explicitly financially oriented, while the ethical dimension is more an indirect reputational incentive. It is in the end uncertain that EOVs will not experience mission drift. While our data do not allow for a precise examination of this issue, existing research and our findings suggest that platforms, particularly those incorporating ESG criteria, have a vested interest in monitoring moral hazards related to mission drift (Cumming et al., 2024). Our results indicate that environmentally oriented ventures tend to perform better in the long run, which may mitigate concerns about mission drift. However, as ventures mature, deviations from their initial commitments may become more apparent, especially during due diligence by follow-on investors. This highlights the need for further research, particularly with data from platforms with diverse ethical orientations and governance structures.

Conclusion

In conclusion, we observe a significantly positive impact of environmental orientation on the short-term financial performance of ECF-backed ventures, but only when the offering includes a nominee ownership structure. Thus, corporate governance plays a central role in the success of environmentally oriented ECF offerings. Environmental orientation also positively influences the long-term financial performance of

ECF-backed ventures, but this effect is strongly significant only when combined with initial campaign success. Therefore, over the long run, investors value both environmental ethics and financial performance. The interaction between short-term financial success and environmental orientation is positive, while environmental orientation alone does not appear to have a significant influence on long-term performance. This suggests that a warm glow alone is insufficient to garner strong investor support. It is the combination of both effects—the ethical commitment and the demonstration of financial performance—that investors value in the long run. This finding aligns with a growing body of literature on the complexity of backers' motivations (Aouni et al., 2024; Moss et al., 2018). While directly observing these complex motivations empirically is beyond the scope of this study, it presents an important avenue for future research.

Our results are an interesting contribution to research on the link between environmental ethics and finance, where most of the research to date has been done on public corporations or private firms that turn to the more traditional segments of the VC market. We are among the first to contribute to this stream of research from the perspective of entrepreneurial finance in an ECF setting and the very first to look simultaneously at short-term and long-run performance. We also show that the appropriate governance structure is important for EOVs to take the first hurdle on the path towards economic sustainability. This has implications for business ethics. In the context of ECF, we show that environmental responsibility carries ethical and economic value for investors, provided that ethical crowd investors are granted leverage through effective corporate governance mechanisms.

Authors Contributions All authors contributed to the study conception, design. And to writing the first draft of the manuscript. All authors read and approved the final manuscript.

Funding Open access funding provided by Università degli studi di Bergamo within the CRUI-CARE Agreement.

Data availability The data that has been used is confidential.

Declarations

Conflicts of interest No funding was received to assist with the preparation of this manuscript. The authors have no relevant financial or non-financial interests to disclose.

Research Involving Human Participants and Animals Not applicable.

Informed consent Not applicable.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source,

provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-oriented innovation: A systematic review. *International Journal of Management Reviews*, *18*(2), 180–205.
- Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in equity crowdfunding. *Entrepreneurship Theory and Practice*, *39*(4), 955–980.
- Aouni, Z., Hudon, M., Périlleux, A., & Wry, T. (2024). Crowdfunding social ventures: Who will reward (or punish) hybridity?. *Entrepreneurship Theory and Practice*, 10422587231218194.
- Barber, B. M., Morse, A., & Yasuda, A. (2021). Impact investing. *Journal of Financial Economics*, *139*(1), 162–185.
- Bento, N., Gianfrate, G., & Thoni, M. H. (2019). Crowdfunding for sustainability ventures. *Journal of Cleaner Production*, *237*, 117751.
- Bertoni, F., Meoli, M., & Vismara, S. (2014). Board independence, ownership structure and the valuation of IPOs in continental Europe. *Corporate Governance: An International Review*, *22*(2), 116–131.
- Billio, M., Murgia, M., & Vismara, S. (2024). Sustainable and climate finance: An integrative framework from corporates to markets and society. *Review of Corporate Finance*, *4*(1–2), 1–16.
- Block, J. H., Fisch, C., Meoli, M., & Vismara, S. (2022). The effect of trademark breadth on IPO valuation and post-IPO performance: An empirical investigation of 1510 European IPOs. *Journal of Business Venturing*, *37*(5), 106237.
- Böckel, A., Hörisch, J., & Tenner, I. (2021). A systematic literature review of crowdfunding and sustainability: Highlighting what really matters. *Management Review Quarterly*, *71*(2), 433–453.
- Broccardo, E., Hart, O., & Zingales, L. (2022). Exit versus voice. *Journal of Political Economy*, *130*(12), 3101–3145.
- Brooks, C., & Oikonomou, I. (2018). The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. *British Accounting Review*, *50*(1), 1–15.
- Brown, B. (1998). Do stock market investors reward companies with reputations for social performance? *Corporate Reputation Review*, *1*, 271–280.
- Butticè, V., Di Pietro, F., & Tenca, F. (2020). Is equity crowdfunding always good? Deal structure and the attraction of venture capital investors. *Journal of Corporate Finance*, *65*, 101773.
- Calic, G., Arseneault, R., & Ghasemaghaei, M. (2021). The dark side of Machiavellian rhetoric: Signaling in reward-based crowdfunding performance. *Journal of Business Ethics*, 1–22.
- Calic, G., & Mosakowski, E. (2016). Kicking off social entrepreneurship: How a sustainability orientation influences crowdfunding success. *Journal of Management Studies*, *53*(5), 738–767.
- Capelle-Blancard, G., & Petit, A. (2019). Every little helps? ESG news and stock market reaction. *Journal of Business Ethics*, *157*, 543–565.
- Caputo, A., Schiocchet, E., & Troise, C. (2022). Sustainable business models as successful drivers in equity crowdfunding. *Business Strategy and the Environment*, *31*(7), 3509–3522.
- Chen, X., & Ma, L. (2023). Lead investors' insider ownership and crowd investors' agency concerns in investor-led equity crowdfunding. *Pacific-Basin Finance Journal*, *78*, 101978.
- Coakley, J., Lazos, A., & Liñares-Zegarra, J. M. (2022a). Seasoned equity crowdfunding offerings. *Journal of Corporate Finance*, *77*, 101880.
- Coakley, J., Lazos, A., & Liñares-Zegarra, J. M. (2022b). Equity crowdfunding founder teams: Campaign success and venture failure. *British Journal of Management*, *33*, 286–305.
- Colombo, M. G., Meoli, M., & Vismara, S. (2019). Signaling in science-based IPOs: The combined effect of affiliation with prestigious universities, underwriters, and venture capitalists. *Journal of Business Venturing*, *34*(1), 141–177.
- Cumming, D., Hornuf, L., Karami, M., & Schweizer, D. (2021a). Disentangling crowdfunding from fraudfunding. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-021-04942-w>
- Cumming, D., Meoli, M., Rossi, A., & Vismara, S. (2024). ESG and crowdfunding platforms. *Journal of Business Venturing*, *39*(1), 106362.
- Cumming, D., Meoli, M., & Vismara, S. (2019). Investors' choices between cash and voting rights: Evidence from dual-class equity crowdfunding. *Research Policy*, *48*(8), 103740.
- Cumming, D. J., Vanacker, T., & Zahra, S. A. (2021b). Equity crowdfunding and governance: Toward an integrative model and research agenda. *Academy of Management Perspectives*, *35*(1), 69–95.
- de Lange, D. E., Busch, T., & Delgado-Ceballos, J. (2012). Sustainability in organizations. *Journal of Business Ethics*, *110*(2), 151–156.
- Defazio, D., Franzoni, C., & Rossi-Lamastra, C. (2021). How pro-social framing affects the success of crowdfunding projects: The role of emphasis and information crowdedness. *Journal of Business Ethics*, *171*(2), 357–378.
- Dixon-Fowler, H. R., Slater, D. J., Johnson, J. L., Ellstrand, A. E., & Romi, A. M. (2013). Beyond “does it pay to be green?” A meta-analysis of moderators of the CEP–CFP relationship. *Journal of Business Ethics*, *112*, 353–366.
- Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A., & Dushnitsky, G. (2017a). A review and road map of entrepreneurial equity financing research: Venture capital, corporate venture capital, angel investment, crowdfunding, and accelerators. *Journal of Management*, *43*(6), 1820–1853.
- Drover, W., Wood, M., & Zacharakis, A. (2017b). Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*, *41*(3), 323–347.
- Edmans, A. (2023). The end of ESG. *Financial Management*, *52*, 3–17.
- Edmans, A., & Kacperczyk, M. (2022). Sustainable finance. *Review of Finance*, *26*(6), 1309–1313.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, *26*(2), 301–325.
- Farè, L., Meoli, M., & Vismara, S. (2024). Sustainable crowdfunding and cultural contexts: Evidence from a longitudinal multi-country analysis. *Finance Research Letters*, *70*, 106345.
- Fassin, Y., & Drover, W. (2017). Ethics in entrepreneurial finance: Exploring problems in venture partner entry and exit. *Journal of Business Ethics*, *140*(4), 649–672.
- Fine, J. P., & Gray, R. J. (1999). A proportional hazards model for the subdistribution of a competing risk. *Journal of the American Statistical Association*, *94*(446), 496–509.
- Fisch, C., Meoli, M., & Vismara, S. (2022). Does blockchain technology democratize entrepreneurial finance? An empirical

- comparison of ICOs, venture capital, and REITs. *Economics of Innovation and New Technology*, 31(1–2), 70–89.
- Fischer, D., Brettel, M., & Mauer, R. (2020). The three dimensions of sustainability: A delicate balancing act for entrepreneurs made more complex by stakeholder expectations. *Journal of Business Ethics*, 163(1), 87–106.
- Flammer, C. (2013). Corporate social responsibility and shareholder reaction: The environmental awareness of investors. *Academy of Management Journal*, 56(3), 758–781.
- Gafni, H., Hudon, M., & Périlleux, A. (2021). Business or basic needs? The impact of loan purpose on social crowdfunding platforms. *Journal of Business Ethics*, 173, 777–793.
- Genzkow, M., Kelly, B., & Taddy, M. (2019). Text as data. *Journal of Economic Literature*, 57(3), 535–574.
- Gössling, T. (2003). The price of morality. An analysis of personality, moral behaviour, and social rules in economic terms. *Journal of Business Ethics*, 45, 121–131.
- Grimes, M. G., Williams, T. A., & Zhao, E. Y. (2019). Anchors aweigh: The sources, variety, and challenges of mission drift. *Academy of Management Review*, 44(4), 819–845.
- Guedhami, O., Liang, H., & Shailer, G. (2023). Business Ethics Issues in Finance: Challenges and Recommendations. *Journal of Business Ethics*, forthcoming.
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 127, 297–316.
- Hartzmark, S. M., & Sussman, A. B. (2019). Do investors value sustainability? A natural experiment examining ranking and fund flows. *Journal of Finance*, 74(6), 2789–2837.
- Heeb, F., Kölbl, J. F., Paetzold, F., & Zeisberger, S. (2023). Do investors care about impact? *Review of Financial Studies*, 36(5), 1737–1787.
- Hockerts, K., Hehenberger, L., Schaltegger, S., & Farber, V. (2022). Defining and conceptualizing impact investing: Attractive nuisance or catalyst? *Journal of Business Ethics*, 179(4), 937–950.
- Hornuf, L., Schmitt, M., & Stenzhorn, E. (2018). Equity crowdfunding in Germany and the United Kingdom: Follow-up funding and firm failure. *Corporate Governance: An International Review*, 26, 331–354.
- Hornuf, L., & Siemroth, C. (2023). A field experiment on attracting crowdfunders. *Economics Letters*, 222, 110928.
- Hornuf, L., Stenzhorn, E., & Vintis, T. (2021). Are Environmental Orientation investors different? Evidence from equity crowdfunding. *Journal of Technology Transfer*, 47, 1662–1689.
- Huang, W., Vismara, S., & Wei, X. (2022). Confidence and capital raising. *Journal of Corporate Finance*, 77, 101900.
- Hussain, N., Rigoni, U., & Orij, R.P. (2018). Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance. *Journal of Business Ethics* 149, 411–432.
- Johnson, T. C. (2015). Reciprocity as a foundation of financial economics. *Journal of Business Ethics*, 131(1), 43–67.
- Kleinert, S., Volkmann, C., & Grünhagen, M. (2020). Third-party signals in equity crowdfunding: The role of prior financing. *Small Business Economics*, 54, 341–365.
- Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance*, 32(2), 371–387.
- Lo Monaco, V., Meoli, M., Vanacker, T., & Vismara, S. (2024). Entrepreneurial team size and fundraising success: Evidence from equity crowdfunding. *IEEE Transactions on Engineering Management*, 71, 11687–11702.
- Mansouri, S., & Momtaz, P. P. (2022). Financing sustainable entrepreneurship: ESG measurement, valuation, and performance. *Journal of Business Venturing*, 37(6), 106258.
- Mazzocchini, F. J., & Lucarelli, C. (2022). Success or failure in equity crowdfunding? A systematic literature review and research perspectives. *Management Research Review*, 46(6), 790–831.
- MesseniPetruzzelli, A., Natalicchio, A., Panniello, U., & Roma, P. (2019). Understanding the crowdfunding phenomenon and its implications for sustainability. *Technological Forecasting and Social Change*, 141, 138–148.
- Moss, T. W., Renko, M., Block, E., & Meyskens, M. (2018). Funding the story of hybrid ventures: Crowdfunder lending preferences and linguistic hybridity. *Journal of Business Venturing*, 33(5), 643–659.
- Ponomareva, Y., Federo, R., Aguilera, R. V., & Collin, S. O. (2022). The cost of conformity to good governance: Board design and compensation. *Corporate Governance: An International Review*, 30(4), 399–420.
- Ramus, T., & Vaccaro, A. (2017). Stakeholders matter: How social enterprises address mission drift. *Journal of Business Ethics*, 143, 307–322.
- Rossi, A., Vanacker, T., & Vismara, S. (2021). Equity crowdfunding: New evidence from US and UK markets. *Review of Corporate Finance*, 1, 407–453.
- Rossi, A., Vanacker, T., & Vismara, S. (2023). Unsuccessful equity crowdfunding offerings and the persistence in equity fundraising of family business start-ups. *Entrepreneurship Theory and Practice*, 47(4), 1327–1355.
- Siebeneicher, S., & Bock, C. (2022). Sustainable aim and personal gain? How sustainable value affects the relation between personal value and crowdfunding success. *Technological Forecasting and Social Change*, 183, 121938.
- Signori, A., & Vismara, S. (2018). Does success bring success? The post-offering lives of equity-crowdfunded firms. *Journal of Corporate Finance*, 50, 575–591.
- Spence, M. (1978). Job market signaling. In *Uncertainty in Economics* (pp. 281–306). Academic Press.
- Tenner, I., & Hörisch, J. (2021). Crowdfunding sustainable entrepreneurship: What are the characteristics of crowdfunding investors? *Journal of Cleaner Production*, 290, 125667.
- Testa, S., Nielsen, K. R., Bogers, M., & Cincotti, S. (2019). The role of crowdfunding in moving towards a sustainable society. *Technological Forecasting and Social Change*, 141, 66–73.
- Testa, S., Roma, P., Vasi, M., & Cincotti, S. (2020). Crowdfunding as a tool to support sustainability-oriented initiatives: Preliminary insights into the role of product/service attributes. *Business Strategy and the Environment*, 29(2), 530–546.
- Troise, C., Tani, M., Dinsmore, J., Jr., & Schiuma, G. (2021). Understanding the implications of equity crowdfunding on environmental orientation innovation and changes in agri-food systems: Insights into an open innovation approach. *Technological Forecasting and Social Change*, 171, 120959.
- Van Beurden, P., & Gössling, T. (2008). The worth of values—a literature review on the relation between corporate social and financial performance. *Journal of Business Ethics*, 82, 407–424.
- Vismara, S. (2018). Signaling to Overcome Inefficiencies in Crowdfunding markets. The Economics of Crowdfunding, in Cumming D. and Hornuf L., *The Economics of Crowdfunding*, Palgrave MacMillan, 29–56.
- Vismara, S. (2016). Equity retention and social network theory in equity crowdfunding. *Small Business Economics*, 46, 579–590.
- Vismara, S. (2019). Sustainability in equity crowdfunding. *Technological Forecasting and Social Change*, 141, 98–106.
- Walthoff-Borm, X., Vanacker, T., & Collewaert, V. (2018). Equity crowdfunding, shareholder structures, and firm performance. *Corporate Governance: An International Review*, 26, 314–330.
- Wehnert, P., & Beckmann, M. (2023). Crowdfunding for a sustainable future: A systematic literature review. *IEEE Transactions on Engineering Management*, 7(9), 3100–3115.

- Wessel, M., Gleasure, R., & Kauffman, R. J. (2021). Sustainability of rewards-based crowdfunding: A quasi-experimental analysis of funding targets and backer satisfaction. *Journal of Management Information Systems*, 38(3), 612–646.
- Yao, S., Pan, Y., Wang, L., Sensoy, A., & Cheng, F. (2023). Building eco-friendly corporations: The role of minority shareholders. *Journal of Business Ethics*, 182(4), 933–966.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.