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False signaling by platform team members and post-campaign venture outcomes: Evidence from an equity crowdfunding platform

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ABSTRACT

In equity crowdfunding (ECF), early investments serve as signals of venture potential to prospective investors, making them more likely to join an offering. We argue that ECF platform team members can exploit this mechanism and convey false signals to unsophisticated investors. Data from a prominent ECF platform indicate that platform team members "invest" in ventures that exhibit weaker post-campaign outcomes. However, in ventures that successfully fundraise, platform team members typically withdraw their investment (after it incentivized others to join), and these ventures show even weaker post-campaign outcomes. Finally, ventures' post-campaign outcomes are particularly weak when this "invest-and-withdraw" tactic is executed by the platform's upper echelons, whose investments can further be perceived as endorsement signals by the crowd, despite significant goal incongruence between the upper echelons and the crowd. Our study presents novel theoretical and empirical insights into the signaling, financial misconduct, and ECF literature, and holds important policy implications.

Executive summary: Past research has shown that equity crowdfunding (ECF) platforms can reduce agency problems between entrepreneurs and ECF investors, such as adverse selection problems, by providing selection and due diligence activities. In other words, past research has focused on the bright side of ECF platforms. However, this study focuses on a possible dark side of ECF platforms. The paper investigates the practice of ECF platform team members fabricating support (i.e., using an invest-and-withdraw tactic) towards firms with weaker prospects listed on their own platform.

ECF platform team members can use an invest-and-withdraw tactic in firms with weaker prospects. Indeed, through their investments, ECF platform team members influence early investments, which are often used by prospective ECF investors as a quality signal to influence their own investment decisions. However, platform team members then withdraw their investments (after their investment lured follow-on investors to the offering). As such, platform team members

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convey false signals to unsophisticated ECF investors. The paper highlights an underexplored agency problem between ECF platforms and investors, where platform goals (such as higher platform fundraising success rates and increasing revenue generation, which require platforms where more deals get done) may conflict with investor interests.

Theoretically, these agency problems and the fact that one can withdraw investments at zero cost during a cooling-off period may explain why ECF platform team members engage in false signaling to support firms with weaker prospects. More specifically, we expect that platform team members will invest in firms with weaker post-campaign prospects. Also, their investment withdrawals are expected to be especially correlated with weaker post-campaign venture outcomes. Finally, the investments of the platform's upper echelons are expected to be particularly correlated with weaker post-campaign outcomes.

Empirically, we use unique data from a leading ECF platform from a country with developed financial markets. The paper provides empirical support for the above expectations and underscores the need for policy attention to mitigate such possible misconduct. The goals of ECF platform team members are unlikely to always align with what ECF investors want. More specifically, ECF platform team members can use private information and exploit rules meant to protect buyers online (i.e., the cooling-off period, which allows for investment withdrawals at no cost) to support the fundraising of firms with weaker prospects on their platform.

Our research adds to the signaling literature by highlighting false signals conveyed by ECF platform team members and especially the upper echelon members. The paper further contributes to the misconduct literature in entrepreneurial finance, which has mostly focused on entrepreneur and/or investor misconduct, while we focused on possible misconduct by platform team members who are generally viewed as benign. It focuses on an underexplored agency problem in entrepreneurial finance between platforms and ECF investors. The paper also adds to the ECF literature by providing novel insights into post-campaign venture outcomes. Finally, the paper further contributes to the discussion about the need for better regulations in ECF markets. More transparent information and limiting the possibility of invest-and-withdraw tactics might help channel funds to the most promising ventures, ultimately providing added value for the economy and ensuring the long-term prospects of the ECF market.

1. Introduction

A major concern in entrepreneurial finance is adverse selection or the scenario where investors invest in low-quality firms that have been (mis)represented to them by entrepreneurs as high-quality (Bellavitis et al., 2019; Bruton et al., 2009; Chua et al., 2011; Cumming et al., 2023; Drover et al., 2017a; Momtaz, 2021). This concern is especially acute in equity crowdfunding (ECF) markets (Cumming et al., 2021), where ECF investors have few incentives to perform due diligence (Ahlers et al., 2015), often lack the necessary skills (Meoli et al., 2022), and have limited information on the ventures that seek funding beyond what is provided on the ECF platform (Mochkabadi et al., 2024). Extant research has shown the bright side of ECF platforms in that they can reduce these concerns via their screening and due diligence activities (Cumming et al., 2019a; Kleinert et al., 2022).

Still, "[ECF] platforms have received very limited attention" and the literature has "understudied how the[se] operators behave" (Butticè and Vismara, 2022: 1238). An emerging stream of research shows that ECF platform team members surprisingly often invest (Cumming et al., 2025; Johan and Reardon, 2024) and withdraw their investments (Meoli and Vismara, 2021) in offerings listed on their platforms. This research has focused on the effects of such tactics at the time of fundraising (i.e., on fundraising success). Meoli and Vismara (2021), for example, show that platform team members especially invest in cold offerings, which look less likely to achieve the target capital. By doing so, ECF platform team members can "send the signal to potential late investors that they believe in the project and trust its proponent" (Vismara, 2018: 471). However, our theoretical and empirical understanding of whether and how such support by platform team members relates to post-campaign venture performance remains very limited.

In this paper, we ask: *How do ECF platform team member investments (withdrawals) relate to post-campaign venture outcomes?* At first blush, the fact that early investors "invest in a new venture conveys that the firm has attractive resources and prospects" (Ozmel et al., 2013: 854), which incites later investors to join an ECF offering. For example, Hornuf and Schwienbacher (2018) show that an investment of 5000 (10,000) euros or more increases investments on the subsequent day by 6.6 % (31.6 %). However, we argue that platform team members can exploit this mechanism and convey "false" signals to the crowd. In particular, we contend that platform team members can fabricate support for weaker firms and engage in false signaling due to (1) an underexplored agency problem between ECF platforms and ECF investors, and (2) the limited costs linked to ECF platform team members' investment withdrawal.

Specifically, the firms that survive ECF platform due diligence and get listed are still characterized by varying prospects and varying likelihoods of raising the target funding amount. ECF platform team members have incentives to grow the number of campaigns that fundraise successfully because they drive platform revenue generation (Cumming et al., 2024), while ECF investors only want to invest in the most promising opportunities that list on a platform. This goal incongruence points to an agency problem between ECF platform team members and ECF investors, which is expected to push platform team members to "invest" in firms with weaker prospects from the pool of firms that list on their platform to foster additional investments from unsophisticated ECF investors. Importantly, many of the platform team member investments are not actual investments and are withdrawn (at no financial cost) after incentivizing other

ECF investors to join a (weaker) campaign.[1] Accordingly, when platform team members deliberately want to support firms with weaker prospects, one would further expect that their investment withdrawals will be correlated with weaker post-campaign outcomes (i.e., you do not want to keep your money in firms with weaker prospects). Overall, platform team member investments made to attract other investors, which are then withdrawn, can be considered false signals. In other words, the platform team members are fabricating a false signal (by investing) to attract other investors and initiate the mechanism of information cascades (Vismara, 2018), to later on withdraw the investment.

Finally, ECF platform teams include a multitude of members, who are fundamentally concerned with platform survival, from the upper echelons, including founders/top managers, to lower-level employees. Especially investments made by the platform's upper echelons will be visible, attended to, and can be interpreted by the crowd as endorsement signals (in addition, to their investments influencing early investments, which prospective ECF investors can use as a signal as well) and, thereby, positively influence their perception regarding the venture's prospects (e.g., Anglin et al., 2020; Courtney et al., 2017; Plummer et al., 2016; Stuart et al., 1999). However, the upper echelons have even stronger incentives to support firms with weaker prospects that are listed on the platform because they get disproportionate (non-)financial benefits from doing so. In other words, the underlying goal incongruence between ECF platform team members and investors is even stronger for the upper echelons. Hence, their investments are expected to be more strongly related to firms with weaker post-campaign outcomes.

Empirically, we use a sample of 555 first-time ECF campaigns listed on a leading ECF platform in the period 2017–2020. Our sample includes both firms that successfully raised ECF, as well as those firms that were not successful in raising ECF. For each campaign, we identify whether a platform team member invested in it (and if so, withdrew the investment) or not. For each firm, we subsequently check multiple post-campaign outcomes, such as survival, follow-on fundraising, credit score, and secondary market listing using multiple data sources, including Orbis (e.g., Colombo et al., 2019; Vanacker et al., 2017) and CrunchBase (e.g., Bellavitis et al., 2022; Fisch and Block, 2021; Ko and McKelvie, 2018). Following the recommendations by Wiklund et al. (2019), we have also conducted exploratory interviews with (former) platform founders, managers, and employees from different countries to enrich our paper's theorizing.

Our findings document that platform team member investments (and investment amounts) are negatively related to post-campaign outcomes. Moreover, in those firms that successfully raised ECF, and in which platform team members invested but have withdrawn their investments, we observe even more negative post-campaign outcomes. These findings indicate that platform team members do not withdraw at random but knowingly withdraw their investments from firms with weaker prospects. Interestingly, we do not find such evidence for withdrawals by non-platform team members. Finally, our evidence shows that investments by the platform's upper echelons have even more negative post-campaign outcomes.

Our study makes several contributions. First, this study contributes to the signaling literature in entrepreneurship and management (e.g., Connelly et al., 2011) by highlighting the dangers of false signals conveyed by parties that are usually described as benign. We add to a cognitive view on signaling (e.g., Anglin et al., 2018; Butticè et al., 2022; Drover et al., 2018; Hallen and Pahnke, 2016; Heil and Robertson, 1991), which accounts for the fact that the interpretation of *possible* signals is neither automatic nor straightforward and can even be fallible. More specifically, we establish that platform team members can fabricate false signals to misguide the crowd of prospective investors, who have limited means, time, and/or knowledge to decipher possible signals correctly. Furthermore, we also contribute to the literature on endorsement signals. Prior research has largely focused on the positive outcomes of third-party endorsements (e.g., Courtney et al., 2017; Kleinert et al., 2020; Plummer et al., 2016; Stuart et al., 1999), but we present the novel case of false endorsements by the platform's upper echelons. Indeed, the (fabricated) support by the platform's upper echelons can also be perceived (wrongly) by the unsophisticated crowd as an endorsement. While extant theory and empirical research highlight boundary conditions for endorsement effects such that endorsements can be very beneficial or simply be ignored because endorsers are viewed as not credible (e.g., Megginson and Weiss, 1991), we show that under specific conditions they can be false and linked to negative firm outcomes. Thus, when misinterpreted as credible endorsement signals, investments by the platform's upper echelons can drag ECF investors into firms with lower prospects.

Second, we contribute to the scant literature on financial misconduct in entrepreneurial finance markets (Cumming et al., 2023; Belavina et al., 2020; Hornuf and Schwienbacher, 2017). To date, most research on financial misconduct has focused on public markets (Cumming et al., 2015) and extant research in entrepreneurial finance has focused on misconduct by entrepreneurs *and/or* investors (e.g., Drover et al., 2014; Harris et al., 2009; Rutherford et al., 2009). We focus on possible misconduct by ECF platforms, which connect entrepreneurs with investors. The "invest-and-withdraw" tactic of ECF platform team members harms ECF investors and represents an underexplored ECF platform-investor agency problem. Indeed, while ECF platforms receive from ECF investors the task of removing fraudulent firms and firms with weaker prospects from listing on the platform, our results suggest that from the set of firms that do list on platforms, platform team members support firms with weaker prospects to help them successfully fundraise.

Third, we contribute to the ECF and broader entrepreneurial finance literature. Current research has a largely positive view of ECF platforms, stressing their screening and due diligence function (e.g., Cumming et al., 2019a, 2021; Kleinert et al., 2022). By theorizing on and presenting evidence of a "dark side" of ECF platforms, we do not refute the importance of platforms within the ECF ecosystem,

[1] As with online purchases in general, the online nature of investments on ECF platforms allows ECF investors to reconsider their investments and ask their funds back (at no cost) during a legally specified cooling-off period. See Schwartz (2023) for the legal aspects of investment crowdfunding and specifically of the cooling-off period. Moreover, please note that in those firms for which the fundraising campaign was not successful (i.e., the firm did not reach its target), investment withdrawal (e.g., by platform employees) is not relevant because investors automatically get their money back.

but we paint a more nuanced picture where ECF platforms do good things but, at times, can also exhibit troublesome behaviors. As such, this study also contributes to agency theory in entrepreneurial finance by shedding light on the underlying and underexplored agency problem (and related goal incongruence) between ECF platform team members and investors. Our findings contribute to the debate on the need for more effective governance practices in the ECF market (e.g. Cumming et al., 2021). Finally, we contribute to a dearth of ECF research on post-campaign outcomes (e.g., Blaseg et al., 2021; Butticè et al., 2020; Coakley et al., 2022b; Hornuf et al., 2018, 2022; Signori and Vismara, 2018; Walthoff-Borm et al., 2018a, 2018b) by presenting first-time evidence on how platform team member investments and withdrawals are negatively related with post-campaign outcomes. These findings also carry important policy implications to which we come back in the discussion.

2. Theory

2.1. Background literature

Raising external finance is a daunting task for entrepreneurial ventures due to the high levels of information asymmetry between entrepreneurs and investors (e.g., Amit et al., 1998; Arthurs and Busenitz, 2003; Bellavitis et al., 2019; Momtaz, 2021). Information asymmetry can lead to adverse selection (e.g., Cumming et al., 2021; Sewaid et al., 2021). Because all entrepreneurs have incentives to present themselves and their ventures as high-quality, investors run the risk of contributing funds to lower-quality entrepreneurs (ventures), who successfully disguise themselves as high-quality (e.g., Amit et al., 1998). Such concerns can be especially acute in ECF markets where entrepreneurs deal with (unsophisticated) investors (Cumming et al., 2021). When investors cannot differentiate higher-quality from lower-quality ventures and are only willing to pay average prices, only the "lemons" are willing to give up part of the equity of their venture to raise ECF (Blaseg et al., 2021; Walthoff-Borm et al., 2018b).

While ECF platforms play an important intermediary function by enabling entrepreneurs to raise funds from a large group of prospective investors, the role of platforms has largely been overlooked in ECF research (Coakley and Lazos, 2021). More recently, scholars have articulated the need for more research on ECF platforms (e.g., Belavina et al., 2020; Kleinert et al., 2022; Pollack et al., 2021). Unsurprisingly, a recent and growing stream of research has focused on how these platforms can minimize the serious agency risk of adverse selection between entrepreneurs and investors.

Extant research has shown that platforms are selective. As Kleinert et al. (2022: 1626) note "only a lucky few [less than 10% of applications] … survive the rigorous selection process imposed by [ECF] platforms". Platforms engage in due diligence, which comprises "background checks, site visits, credit checks, cross-checks, account monitoring, and third-party proof on funding projects" and such activities are especially prominent on ECF platforms (Cumming et al., 2019a: 1). Through their selection and due diligence, platforms want to discard the lowest quality projects and minimize the risk of listing outright fraudulent campaigns, thereby protecting their reputation and minimizing adverse selection risks for investors. Additionally, they provide services to the campaigns they list on their platform in the form of pre-launch, ongoing, and post-offering support (Rossi and Vismara, 2018). Prior research has demonstrated the benefits of these platform screening, due diligence, and support activities. Platforms that perform due diligence exhibit a higher success rate, larger amounts of capital raised, and attract a greater number of investors (Cumming et al., 2019a).

Despite this recent and important stream of research on the positive side of platforms (see, e.g., Drover et al., 2017a; Wallmeroth et al., 2018), it is important to also examine the potential darker sides of ECF platforms. Specifically, platforms have the potential to impact the funding campaign dynamics through their investment behavior (e.g., Cumming et al., 2025; Johan and Reardon, 2024; Hornuf and Schwienbacher, 2018; Meoli and Vismara, 2021). Platform team members' investments directly influence early investments, which have a signaling effect and incite other (unsophisticated) investors to pledge money (Vismara, 2018). However, in a setting where (1) platform goals do not fully align with ECF investor goals and (2) false signaling does not trigger significant costs, adverse ECF platform behaviors can occur, which harms ECF investors. Below, we develop this argument in more detail.

2.2. Hypothesis development

Firms that survive an ECF platform's due diligence and get listed on the platform will still be characterized by a wide variety of prospects. Consistent with this idea, the literature on the post-campaign performance of ECF firms shows a wide variety in the performance of these firms (e.g., Butticè et al., 2020; Coakley et al., 2022b; Hornuf et al., 2018; Signori and Vismara, 2018; Walthoff-Borm et al., 2018a). Moreover, research shows that at fundraising some projects have, while others lack, "(observable) characteristics that are generally believed to indicate higher venture quality" (Ahlers et al., 2015: 960). Given the early stage of those ventures, investors look for quality signals that allow them to distinguish higher from lower-quality ventures. Different types of quality signals, both venture-specific as well as borrowed signals (through third-party endorsement) have been shown to affect fundraising success. For example, firms that retain more equity or already have positive sales experience a greater likelihood of fundraising success (e.g., Ahlers et al., 2015; Rossi et al., 2021; Vismara, 2016). Accordingly, firms with "quality signals" are more likely to achieve fundraising success, while firms without such signals (and weaker prospects) are expected to experience bigger fundraising challenges (e.g., Ahlers et al., 2015; Coakley et al., 2022a; Le Pendeven and Schwienbacher, 2023; Rossi et al., 2021; Kleinert, 2024; Scheaf et al., 2018).

Early investments can also represent quality signals for ECF campaigns that incite other investors to join the campaign (Hornuf and Schwienbacher, 2018; Meoli and Vismara, 2021; Vismara, 2018). We argue that platform team members have incentives to exploit this mechanism, in essence, creating false signals. Specifically, we argue that within the set of firms that get listed on an ECF platform, platform team members have incentives to support especially the firms with weaker prospects. First, platform team members have incentives to increase the percentage of firms listed on the platform that successfully raise funding (i.e., the platform's fundraising

success rate); and to do so, they will have to especially support the firms with weaker prospects. Indeed, the fundraising success rate is a vital metric for ECF platforms, and it is also of great relevance to both entrepreneurs and investors. Entrepreneurs are unlikely to select platforms on which fundraising prospects are low once they get listed (and thus survived platform due diligence). Prospective investors are unlikely to invest and support specific projects on platforms when projects have a high probability of not reaching fundraising targets, even when in such cases investors get their money back (e.g., Cumming et al., 2020; Vismara, 2018). Ultimately, platforms care about their fundraising success rates, as it will impact their ability to attract a continuous stream of entrepreneurial projects and an active set of crowd investors, which is critical for their survival. Moreover, given the increasing number of platforms, competition between platforms, and the related consolidation pressures (e.g., Dushnitsky et al., 2016; Meoli et al., 2022), it is nowadays even more important to attract entrepreneurs and investors alike towards the platform, which requires a platform on which "deals happen".

Second, ECF platforms need to care about platform profitability to safeguard their long-term survival (Cumming et al., 2024). Indeed, one of the key factors behind the platform consolidation wave was the need to ensure greater efficiency so that platforms reached a sufficiently large scale (Fleming and Sorenson, 2016), which ensured that their revenue generation was able to cover their costs, and so that platforms are profitable. Platform revenues are generated by charging entrepreneurs fees, which oftentimes consist of a percentage of the amount raised (Meoli and Vismara, 2021; Cumming et al., 2019b). With a fundraising success fee of, for example, 6 %–7 %, the platform will obtain $42,000 to $49,000 if an average firm raises its target of $700,000. This fee structure further stresses the importance of having a high platform fundraising success rate, which again provides platform team members with incentives to support firms with weaker prospects listed on the platform because these firms will experience more challenges to independently raise their target amount of funding.

In exploratory interviews, a platform co-founder when discussing the behavior of other platforms told us:

> Yeah, totally. They play games. They place orders … to make their campaigns seem hot. That way, they hope to dazzle both the entrepreneurs and the investors…
> They are surely doing it intentionally. … It's like running a restaurant in a super touristy spot. Tourists won't stop if they walk past and see an empty place.

A former employee of an ECF platform further corroborates some of the ideas from above when discussing his/her investments:

My performance was linked to the performance of the companies I had selected. By performance, I mean the amount of capital the companies raise relative to their offering target.

As an employee, I frequently invested in the offerings that I helped select… *mostly* to support their kick-off. (emphasis added).

One could wonder whether platform team members' support of the firms with weaker prospects that are listed on their platforms will not damage the platform's reputation and thus entail a reputational cost (Megginson and Weiss, 1991). This is unlikely for at least three reasons. First, it is important to stress that our argument is *not* that platforms will support outright failures. Rather, platforms do perform due diligence (e.g., Cumming et al., 2019a); however, these activities still result in a set of firms of varying quality levels that list on platforms (e.g., Ahlers et al., 2015). It is from this set of firms that survived due diligence and eventually listed on platforms, that ECF platform members are more likely to support the firms with weaker prospects. Second, while investors often care about the longer-term outcomes of their investments (Lukkarinen and Schwienbacher, 2023), it is also well-recognized that the longer-term (post-campaign) outcomes from the broad set of firms that are listed on an ECF platform are not very visible to unsophisticated crowd investors (e.g., Bollaert et al., 2021). Third, even if platforms are transparent about, for example, failure rates among their crowd-funded firms (which they often are not), failure is an inherent part of entrepreneurship, and platforms cannot (or will not) necessarily be blamed for it. Indeed, even in the portfolio of professional venture capital investors (e.g., Dimov and De Clercq, 2006) and angel investors (e.g., Mason and Harrison, 2002), the majority of investments never generate any return. Ultimately, many factors can explain weak post-campaign performance, including weak management and environmental factors, so that unsophisticated ECF investors do not necessarily link weaker post-campaign outcomes to past investments by platforms multiple months or even years earlier. A cognitive view on signaling also supports the idea that signal receivers may not always accurately assess an organization's reputation or track record (e.g., Hallen and Pahnke, 2016). Hence, there are multiple reasons why platform team members' support of weaker firms that eventually exhibit lower post-campaign performance is unlikely to strongly affect the platform's reputation. As a former employee of an ECF platform further indicates:

> The more the early investments, the more appealing the offering appears to both platform managers and entrepreneurs. This is good. If then the offering turns out successful, everyone is happy. So, as an employee, you have every incentive to contribute towards improving its chances of success. *And no negative consequences. So, why not?* (emphasis added).

In sum, platform team members have financial and non-financial incentives to support firms with weaker prospects listed on their platforms.[2] Platform team members can do so by investing themselves. These investments directly influence the early investments, which can be interpreted as quality signals by the crowd and as such attract additional investors through information cascading and/or

[2] Clearly firms with stronger prospects will require less support from platform team members. Still, the attentive reader might ask why platform team members do not *also* support in the highest quality firms and generate returns. While possible, such behavior is expected to be limited or very difficult. Indeed, entrepreneurial finance research based on some of the most professional investors in the market (i.e., venture capitalists) is clear that it is easier to identify weaker firms relative to identifying "home run" investments (e.g., Dimov and Shepherd, 2005).

herding (e.g., Cong and Xiao, 2024; Vismara, 2018). Consistent evidence of information cascading is also found in other investment crowdfunding platforms, such as peer-to-peer lending (e.g., Zhang and Liu, 2012).[3] Ultimately, when platform team members' investments are especially used to support the fundraising success of firms with weaker prospects, these investments are expected to be correlated with lower post-campaign outcomes. As such, we hypothesize:

Hypothesis 1. Platform team member investments are negatively related to post-campaign venture outcomes.

The false signaling strategy, described above, where platform team members support firms with weaker prospects through making personal investments on the platform may be perceived as a very costly strategy (indeed, it is one of the reasons why late investors react to earlier investments). However, many unsophisticated ECF investors may not understand that the strategy can be followed at zero financial cost, which further emphasizes the idea of false signaling. More specifically, platform team members can take advantage of a legal protection mechanism that provides online investors with a legally specified cooling-off period during which investors can still withdraw their investments (Meoli and Vismara, 2021; Schwartz, 2023). As one ECF platform founder and main shareholder told us:

> Like any other investor, we [managers or employees of the crowdfunding platform] are entitled to change our minds within the so-called cooling-off period. Therefore, we can eventually withdraw our initial investment.

Accordingly, platform team members can initially boost campaigns via their personal investments, thereby attracting more investors (e.g., Hornuf and Schwienbacher, 2018; Vismara, 2018), only to subsequently withdraw their initial investment at no cost. Withdrawals generally have no impact on future fundraising (Hornuf and Schwienbacher, 2018), possibly because they are less visible to investors on the platforms. While new investments are typically displayed at the top of the investment roster, withdrawals are more difficult to detect. For example, with withdrawals, an investment line disappears, so the crowd would have to remember the past roster. Also, the withdrawal might co-occur with other new investors still contributing funds as a reaction to seeing prior investments. Hence, this withdrawal option might be very alluring to platform team members who, as argued above, are highly incentivized to increase the platform's success rate and revenue generation. The following quote corroborates some of our theoretical ideas above:

> Yes, they pull out (*withdraw*) later on. And, absolutely, they're doing it intentionally… No, I don't think later withdrawals will be noticed…
> As a former ECF employee further argues on the invest-and-withdraw strategy:
> Sometimes, I did so strategically, with the clear intention of withdrawing my investment later on. This strategy is not imposed by the platform but is widely adopted by my colleagues. To some extent, I think it is part of an "ownership" concept, where you feel valued based on the performance of the offerings to which you are linked. After all, investing and withdrawing take little time and cost you nothing.

Obviously, platform team members can decide to withdraw their investment (like any other investor) for a multitude of reasons that are not linked to firm prospects. However, platform team members can also use this withdrawal strategy to increase the platform's fundraising success rate and revenue generation by *knowingly* giving an extra "push" to firms that have weaker prospects, which represents a clear agency problem between ECF platform team members and ECF investors. When this is the case, platform team members will be especially likely to withdraw their investments in the lower-quality firms before they get successfully funded because otherwise their personal funds are locked into what they know are lower-quality firms (from, for example, their private due diligence), which would entail they also incur a significant cost. Overall, relative to simply investing, situations in which platform team members invest and then withdraw their investment should be correlated with the weakest post-campaign outcomes. Hence, we hypothesize:

Hypothesis 2. Platform team member investment withdrawal is negatively related to post-campaign venture outcomes.

Problematic behaviors in firms, such as those described above, "can be perpetrated by those at the very top or the very bottom of the managerial hierarchy, and can result from active participation or passive acquiescence" (Zahra et al., 2005: 806). Investments (and withdrawals) by a wide range of platform team members in campaigns listed on their platforms are not isolated events; instead, they are widespread on different ECF platforms (Johan and Reardon, 2024; Meoli and Vismara, 2021). It is commonly acknowledged that "[i]f we want to understand why organizations do the things they do, or why they perform the way they do, we must consider the biases and dispositions of their top executives" (Hambrick, 2007: 334).

We argue that the platform's upper echelons can benefit the most from supporting firms with weaker prospects that list on their platforms. Indeed, the incentives to bolster the platform's fundraising success rate and ensure its profitability are expected to be more pronounced for the upper echelons compared to employees in general. First, the upper echelons are more likely to enjoy the non-monetary benefits related to leading larger platforms that allow more entrepreneurs to raise larger amounts of money (i.e., the idea of managers as empire builders; e.g., De Motta, 2003). Second, much of the monetary benefits from having larger, more successful platforms also accrues to the platform's upper echelons, who can capture excess profits, compared to employees with largely fixed wages. As such, the upper echelons are more incentivized, compared to employees in general, to invest in firms with weaker prospects that would otherwise experience bigger hurdles to reach their funding goal, in an effort to ensure the platform's survival and increase its size.

In addition, the support of offerings by the upper echelons of the platform will likely entail greater information cascade and/or

[3] Some studies (e.g., Kuppuswamy and Bayus, 2017) present evidence that is not in line with information cascades and/or herding but these studies are not focused on investment-based crowdfunding but rather focus on reward-based crowdfunding.

herding effects in a market with unsophisticated investors, making firms with weaker prospects more likely to fundraise. The roster containing information on investors and their investment amounts is available and visible to all prospective investors on some ECF platforms. Accordingly, when members of the platform's upper echelons invest in an offering, the offering might not only benefit from the signaling value of the investment (as with any early investment) but these investments can further be interpreted by the crowd as an endorsement of the offering. Indeed, the upper echelons of leading ECF platforms are likely very prominent people in the ECF market. Accordingly, the names of the platform's upper echelons will be more salient within the ECF community as compared to the names of lower-level platform employees and, thereby, investments by the upper echelons have a more visible and credible endorsement value (e.g., Courtney et al., 2017). Given the rising number of dedicated information channels and discussion platforms for ECF investors, think of TechCrunch, BusinessCloud, PitchBook, and Crowdfund Insider, among others, it seems highly reasonable that upper-echelon members are known to the ECF community. Furthermore, a quick Internet search in the more widespread popular press (e.g., Financial Times, Yahoo Finance) learns that changes in management or top executive positions at the most renowned ECF platforms are also covered and as such communicated to an even larger audience; actually, ECF platform websites themselves clearly discuss the upper echelon and changes in the upper echelon. Combined, ECF investors are likely to perceive investments by the upper echelons as an endorsement, making them more likely to contribute funds, while the platform's upper echelons actually have a greater incentive to fabricate support towards offerings of firms with weaker prospects. As such, we hypothesize:

Hypothesis 3. Investments made by the platform's upper echelons are more negatively related to post-campaign venture outcomes as compared to investments made by employees.

3. Data and methods

3.1. Sample

The sample is obtained from an ECF platform whose name will be concealed due to the sensitive nature of the research question and findings. This anonymized approach ensures data access and objectivity in the research findings. Important to note, however, is that the platform information was revealed during the review process to the blind reviewers and editor to enable a correct assessment. The platform used in this study is located in a country with well-developed capital markets and adopts an "all-or-nothing" funding mechanism, where offering firms receive the funds only if the target amount is reached (Cumming et al., 2020). If the target amount is not reached, investors receive their money back. By looking at the amount raised at the closing date of each offering, we classified offerings based on their successful and unsuccessful outcomes. Our sample comprises 555 initial equity offerings listed on this platform over the 2017–2020 period, and for each offering, we observe a two-year post-campaign period. Both successful and unsuccessful campaigns have been monitored.

3.2. Dependent variables

We study four types of post-campaign dependent variables: first, we identify those firms that failed in the two years after the initial ECF campaign (*Failure*); second, among those that did not fail, we identify firms that were able to attract finance, in the two years following the ECF campaign, in the form of seasoned equity offering (*SEO*), classifying them according to the type of funding, either private equity or further ECF; third, we classify campaigns according to the credit score (*Credit score*), observed two years after the campaign; and fourth, we identify those campaigns that, in the two years following the campaign, had their security traded on any security market (*Secondary*).[4]

The main source of information for failures was Orbis, a database managed by Bureau Van Dijk (a Moody's Analytics company), which includes detailed accounting data on public and private firms. Orbis reports whether a firm is in default of payment or subject to insolvency proceedings. We classified firms as failures when one of the following statuses could be identified within two years following the completion of the crowdfunding campaign: bankruptcy, dissolved, in default of payment, in liquidation, inactive, or insolvency proceedings. Obviously, failure is a negative outcome.

As far as post-campaign financing is concerned, we identified successful firms based on the information on equity rounds carried out, obtained through ECF platforms, Orbis, and Crunchbase (e.g., Cumming et al., 2019b; Signori and Vismara, 2018). Crunchbase is a database of entrepreneurial ventures operated by TechCrunch that records information about their characteristics and relevant events (Crunchbase, 2021). When approaching ECF markets, ventures typically disclose optimistic growth projections that may be challenging to achieve without additional infusions of capital. Successful ECF firms are unlikely to achieve the predicted high growth status without additional financing deals, and they may eventually turn into "living dead" entities (Sahlman, 1990). The ability to secure follow-on funds is important for ECF ventures to realize their growth aspirations and, in line with previous research (e.g., Coakley et al., 2022b; Signori and Vismara, 2018; Walthoff-Borm et al., 2018a), it is considered a positive outcome. We distinguish firms that were able to attract entrepreneurial finance (*SEO*), between those that receive capital infusions from private equity investors, including venture capitalists or angels (*SEO: PE*), and those that secure capital through further successful ECF offerings (*SEO: ECF*).

[4] Due to the fact that we can observe more recent campaigns for a smaller period of time, our analysis could suffer from truncation. However, our research design is set up to minimize the impact of truncation effects, by defining all outcome variables over a two-year period following the campaign, and by selecting a sampling period from 2017 to 2020, allowing to observe all campaigns for at least two years up to the end of year 2022.

The third dependent variable is the credit score assigned to firms (*Credit score*). The credit scores are available to specific subscribers, such as banks, and are also included in credit reports that can be purchased (e.g., by creditors or potential creditors) from a high-quality and established data provider, which we do not disclose to guarantee the anonymity of the ECF platform (and the specific country it operates in). The dummy Credit score equals 1 if the credit score is "Normal" or better, and 0 otherwise (i.e., "High Risk" and "Caution"). The score relates to a commercial product, so its exact calculation is proprietary information.

Last, to identify ECF firms listed on secondary markets, we monitored all security exchanges. In fact, ECF investors have only limited chances to exit their investments. In the absence of liquid secondary markets, they have the opportunity to realize returns on their investments only in the presence of post-offering deals, such as mergers and acquisitions (M&As) or initial public offerings (IPOs). Lukkarinen and Schwienbacher (2023) demonstrate how participation in equity ownership can be increased through well-functioning secondary markets, which however are difficult to achieve within ECF. We therefore consider the listing on a secondary market as a positive outcome.

It is important to recognize that the type of firms on ECF platforms are often very early-stage ventures, for which little public information is available (e.g., Robb and Robinson, 2014). Accordingly, the fact that we have access to such a rich set of dependent variables related to post-campaign outcomes is a significant strength. In the additional tests below, we further consider alternative definitions for the dependent variables, whenever possible.

3.3. Platform investments and withdrawals

The selection of the ECF platform as a testing bed for our research was motivated by the possibility of systematically monitoring the list of investors engaged in each offering. This roster was made publicly available and consistently updated on the platform's portal, allowing us to identify the campaigns with at least one investment by platform team members, which was critical information for testing our hypotheses. For each campaign, the platform presents a dedicated section that, for each investment, provides details on the invested amount, investment date, geographical location, and the identity of the investor. This information is prominently displayed for each campaign. The identification of platform members as investors is not immediately visible; it necessitates a process of cross-referencing investor names and surnames with data from external sources, such as LinkedIn and the ECF platform website. Our definition of platform team members includes both the management and the staff employed by the platform, which comprises over 100 employees.

Our main independent variable is *Platform member offering*, which identifies offers with at least one investor with the same name *and* surname as a platform team member.[5] Further, as described by Meoli and Vismara (2021), regulations in many countries around the world provide a withdrawal right, namely a period of reflection for the consumer who retains the right to withdraw an investment (e.g., within 14 days). To test Hypothesis 2, we make use of *Platform withdrawal* offerings, a dummy variable identifying cases with at least one withdrawal by platform members. Finally, to test Hypothesis 3, we focus on investments made by the platform's *Upper Echelons*, including a dummy equal to one for investments made by the platform's founders and board members only.

3.4. Control variables

Following prior literature on the post-campaign outcomes of firms raising funds through ECF (e.g., Hornuf et al., 2018; Rossi et al., 2023), our analysis includes offering-level control variables that can affect post-campaign outcomes. Our analysis is conducted on firms that have (not) experienced successful initial ECF offerings, thus there is a possibility that such fundraising success affects our analysis, and a *Successful campaign* dummy is therefore included as a first control variable. Since low-quality projects are less likely to perform following the campaign, we measure the general quality of each offer by variables established in extant literature: *Equity offered* (Vismara, 2016; Cumming et al., 2019b); that is, the percentage of shares offered to investors; *Positive sales*, a dummy variable equal to one if the company already reported positive sales at the time of the offering (Ahlers et al., 2015; Vismara, 2018); *TMT Size*, as the number of members in the top management team (Ahlers et al., 2015); *Target capital*, namely the target amount of funds to consider an offering successful (Ahlers et al., 2015; Vismara, 2016); the *Debt-to-Asset ratio*, to account for a firm's financial structure (i.e., leverage), and the *Tangible-to-Total Assets ratio*, to control for a firm's asset structure (i.e., collateralizable assets). To distinguish firm quality from *Campaign quality*, we rely on former literature analyzing the content of campaigns (Block et al., 2018), and include the Flesch Readability Index (Flesch, 1948), using a categorization with a seven-item scale (Courtis, 1995), where 1 corresponds to a Flesch index of 0–30 (very difficult language), 2 to 31–50 (difficult), 3 to 51–60 (fairly difficult), 4 to 61–70 (standard), 5 to 71–80 (fairly easy), 6 to 81–90 (easy), and 7 to 91–100 (very easy language). Last, to take into account the fact that crowdfunding projects may refer to firms operating in different industries, we make use of a set of 9 *Industry dummy* variables, according to the first digit (industry) of the ICB, the Industry Classification Benchmark.[6] Definitions for all variables employed in our study are also provided in Table 1.

[5] Given that our main goal is that of identifying the effect of a platform team member investment signal, we use here a dummy variable for campaigns with at least one investment by a platform team member. Given that there is limited variability in the number of platform member investment but larger variability in investment amounts, we use the investment value in additional tests.

[6] Notice that ICB is available from prospectuses for IPOs, while it has been manually identified for the campaigns, based on the industry description available on the platform.

Table 1
Variable Definitions. This table provides an overview of how the variables are measured.

Dependent variables	
Failure	Dummy = 1 if the company failed in the two years following the initial equity crowdfunding offering
SEO	Dummy = 1 if the company attracted equity financing in the two years following the initial equity crowdfunding offering, either in the form of equity crowdfunding or private equity. In robustness analysis, the natural logarithm of the amount raised (from Orbis M&A/Zephyr, the platform and Crunchbase) in US dollar is also used
SEO: PE	Dummy = 1 if the company attracted equity financing in the two years following the initial equity crowdfunding offering, only in the form of private equity, including venture capitalists. In robustness analysis, the natural logarithm of the amount in US dollar (from Orbis M&A/Zephyr) is also used
SEO: ECF	Dummy = 1 if the company attracted equity financing in the two years following the initial equity crowdfunding offering, only in the form of equity crowdfunding. In robustness analysis, the natural logarithm of the amount in US dollar (from the platform and Crunchbase) is also used
Credit score	Dummy = 1 if the credit score is Normal or better, and zero if High Risk or Caution (scores observed two years following the campaign). In robustness analysis, we use an ordinal scale with higher values indicating greater credit quality
Secondary market	Dummy = 1 if the company equity shares started being negotiated on any secondary stock market in the two years following the initial equity crowdfunding offering. In robustness analysis, the first second-market valuation (available through Euripo) over the pre-listing total asset is also used

Independent variables	
Successful campaign	Dummy = 1 if the company's initial crowdfunding campaign was successful, namely if the proceedings were equal to or greater than the target capital
Equity offered	Percentage of shares offered in the offering
Positive sales	Dummy = 1 if the company has already reported positive sales at the time of the offering
TMT Size	Number of members in the top management team
Target capital	Target amount of funds to consider an offering successful (natural logarithms are used in regression analyses)
Debt-to-Total Assets	Company's total debt divided by company's total assets, at the time of the crowdfunding campaign
Tangible assets-to-Total Assets	Company's fixed assets divided by company's total assets, at the time of the crowdfunding campaign
Campaign quality	Campaign quality is measured through the Flesch Readability Index, using a categorization with a seven-item scale (Courtis, 1995), where 1 corresponds to a Flesch index of 0–30 (very difficult language), 2 to 31–50 (difficult), 3 to 51–60 (fairly difficult), 4 to 61–70 (standard), 5 to 71–80 (fairly easy), 6 to 81–90 (easy), and 7 to 91–100 (very easy language)
Platform member investment	Dummy = 1 if at least one investor has the same name and surname as a platform member
Platform member investment value	Amount invested by platform investors, in US dollar. Natural logarithms are used in regression analyses
Platform withdrawal	Dummy = 1 if there is at least one investment withdrawal by a platform member
Platform Upper Echelons	Dummy = 1 if at least one investor has the same name and surname as a platform's Upper Echelons, including its founders and board members
Industry dummies	Set of 9 dummy variables, according to the first digit (industry) of the ICB, the Industry Classification Benchmark. Notice that ICB is available from prospectuses for IPOs, while it has been manually identified for the campaigns, based on the industry description available on the platform

3.5. Model

Our main analyses focus on post-campaign outcomes and are reported in Tables 5 to 8. As all our dependent variables in the main analyses are dummy variables, we implement Probit regressions to test our hypotheses. Hypothesis 1 is tested by including the variable Platform member investment into our regression models (Table 5): a positive and statistically significant coefficient in Model 1 (i.e., failure) and a negative and statistically significant coefficient in Models 2 to 6 (i.e., SEO, credit score, and secondary market listing) is in support of Hypothesis 1. We additionally test the relevance of platform team member investment value in Table 6. Next, we also include the variable Platform withdrawal offering[7] to test Hypothesis 2 in models similar to those described before (Table 7). Here, we focus on the subsample of successful offerings only because in campaigns that are ultimately unsuccessful a withdrawal decision is not necessary (indeed, funds get automatically returned). Finally, we include the Platform's Upper Echelons dummy[8] to test Hypothesis 3 (Table 8).

4. Results

4.1. Descriptive statistics

Table 2 reports the descriptive statistics of our sample, which consists of 555 first-time ECF campaigns, while Table 3 reports the

[7] The Platform withdrawal variable can take positive values only for campaigns where platform member investment is positive. The inclusion of both variables allows to disentangle the two effects. The potential endogeneity of platform member investment is dealt with in section 4.3.

[8] The Platform Upper Echelons variable can take positive values only for campaigns where platform member investment is positive. The inclusion of both variables allows to disentangle the two effects. The potential endogeneity of platform member investment is dealt with in section 4.3.

Table 2
Summary statistics. This table represents the summary statistics, including the mean, standard deviation, minimum, and maximum of the variables used in the multivariate analyses.

	Obs.	Mean	St. Dev.	Min	Max
Dependent variables					
Failure	555	0.29	0.45	0	1
SEO	555	0.40	0.49	0	1
SEO: PE	555	0.11	0.10	0	1
SEO: ECF	555	0.39	0.49	0	1
Credit score	555	0.10	0.31	0	1
Secondary market	555	0.11	0.31	0	1
Independent variables					
Successful campaign	555	0.70	0.46	0	1
Equity offered (%)	555	0.12	0.05	0.05	0.35
Positive sales	555	0.48	0.50	0	1
TMT Size (No.)	555	6.63	3.21	1	14
Target capital (000 $)	555	346.08	529.82	0.88	6337
Debt-to-Total Assets (%)	555	5.35	15.94	0	0.85
Tangible-to-Total Assets (%)	555	6.48	15.54	0	0.80
Campaign quality	555	2.24	0.65	1	6
Platform member investment	555	0.64	0.48	0	1
Platform member investment value ($)	555	560.73	2565.26	0	10,000
Platform withdrawal	555	0.32	0.47	0	1
Platform Upper Echelons	555	0.12	0.32	0	1

correlation matrix. About 70 % of the campaigns turned out to be successful, meaning that they were able to raise their targeted amount. In terms of *dependent variables*, we observe that 29 % of the ventures eventually fail in our study's timeframe, whereas 40 % are able to raise follow-on financing, mainly in the form of additional equity crowdfunding (i.e., 39 %) but also in the form of private equity (i.e., 11 %). The ventures that are listed on the platform, however, still exhibit high risk, as reflected in their credit score dummy. Only 10 % of the sample ventures obtained a 'normal' or better credit score, implying that 90 % of the ventures are labeled 'caution' or 'high risk'. Furthermore, only 11 % of the ventures have their shares listed on a secondary market. This again underscores the risk for investors due to the limited liquidity of the shares.

In terms of *independent and control variables*, Table 2 shows that about 64 % of all the campaigns included in our sample receive at least one investment from a platform team member. In 32 % of all campaigns, an investment by a platform member was subsequently withdrawn during the cooling-off period (again, please note that in the other cases with platform team member investments, a withdrawal might not have been needed, as the campaign turned out unsuccessful and money gets automatically returned). Moreover, 48 % of the ventures report positive sales at the time of the crowdfunding campaign and, on average, offer 12 % of the equity, meaning that they retain a large portion of the equity and as such have "skin in the game". The management team typically consists of 6 to 7 people. Additionally, the average targeted amount is just above US $346,000, while the maximum targeted amount in our sample exceeds US $6 million.

In Table 4, we compare the dependent variables for campaigns that did versus did not receive investments from platform team members. We observe that post-campaign outcomes are significantly different on several dimensions. The survival rate, the likelihood of raising follow-on equity (in terms of equity crowdfunding as well as private equity), the likelihood of a normal or better credit rating, and the probability of having the shares listed on a secondary exchange are all significantly lower when platform member investments have occurred. Hence, we observe a negative relation between post-campaign outcomes and platform team member investment, which provides preliminary, descriptive support for Hypothesis 1. We also notice that, despite the absence of signals of higher quality, campaigns that received investments from platform team members tend to set higher targets.

4.2. Multivariate analyses

Table 5 reports Probit models in which we regress several post-campaign outcome measures on a dummy equal to one if the campaign received an investment by a platform member (and equal to zero if no investment by a platform member was received).[9]

The control variables confirm that quality signals at the time of fundraising, such as positive sales and a larger part of retained equity, are mostly significantly and positively correlated with subsequent firm survival, follow-on fundraising, credit scores, and secondary market listing. We also control for campaign fundraising success in all models: a successful offering, or fundraising success, is positively and significantly related to post-campaign outcomes such as survival, follow-on fundraising, credit scores, and secondary

[9] As a robustness test, we rerun our models with venture failure and follow-on fundraising as dependent variables, using the shared-frailty Weibull survival-time models. This approach allows to control for a *potentially omitted factor* affecting the survival and/or fundraising chances of ventures (Meoli et al., 2022). Our findings regarding the independent variable and control variables remain stable and confirm the weaker post-campaign outcomes associated with platform member investments.

Table 3
Correlation matrix. Correlation coefficients among variables employed in the analysis. * identifies statistical significance levels at less than 1 %.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Failure	1																
2	SEO	−0.351*	1															
3	SEO: PE	−0.066	0.127*	1														
4	SEO: ECF	−0.338*	0.978*	−0.084	1													
5	Credit score	−0.217*	0.199*	−0.036	0.208	1												
6	Secondary market	−0.144*	0.352*	−0.036	0.362	0.412*	1											
7	Successful campaign	−0.120*	0.278*	0.068	0.265	0.222*	0.227*	1										
8	Equity offered	0.014	−0.041	0.193*	−0.083	0.004	0.094	0.000	1									
9	Positive sales	−0.135*	0.103	0.109*	0.081	0.145*	0.225*	0.251*	0.119*	1								
10	TMT Size	0.007	0.042	−0.053	0.053	−0.019	−0.130*	−0.052	−0.153*	−0.033	1							
11	Target capital	−0.082	0.130*	0.034	0.124	0.107	0.072	0.046	0.200*	0.092	0.157*	1						
12	Debt-to-Total Assets	0.051	−0.045	−0.025	−0.040	0.016	−0.012	0.013	−0.039	−0.033	−0.001	0.015	1					
13	Tangible-to-Total Assets	0.030	0.025	0.020	0.021	0.004	0.007	−0.013	−0.020	−0.027	−0.017	0.045	0.255*	1				
14	Campaign quality	0.036	0.013	−0.012	0.016	−0.053	−0.021	−0.094	0.051	−0.080	0.024	−0.023	−0.001	0.079	1			
15	Platform member inv.	−0.062	0.130*	−0.099	0.151	−0.062	0.067	0.242*	0.020	−0.005	−0.057	0.198*	0.051	0.004	0.041	1		
16	Platform member inv. value	−0.093	−0.006	−0.035	0.001	0.023	0.121*	0.137	−0.131*	0.081	0.060	0.024	0.062	0.014	−0.013	0.040	1	
17	Platform withdrawal	0.054	0.076	−0.043	0.086	−0.008	0.185*	0.146*	−0.023	0.024	0.143*	0.368*	0.019	0.028	0.028	0.439*	−0.113*	1
18	Platform Upper Ech	−0.111*	0.092	−0.074	0.108	−0.097	−0.006	0.276*	−0.001	0.091	−0.061	0.212*	0.035	−0.001	−0.001	0.754*	0.042	0.224*

Table 4
Comparative statistics. In this table, we present the mean of the dependent and independent variables for campaigns that did not receive platform investments (a) and campaigns that did receive investments from platform members (b). In the last column, the difference in means is tested using a non-parametric test. ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	No platform investment (a)	Platform investment (b)	Difference (b-a)
Frequency (%)	35.7 %	64.3 %	
Dependent variables			
Failure	24.2 %	32.3 %	8.1 %**
SEO	47.1 %	34.3 %	−5.8 %***
SEO: PE	15.2 %	8.2 %	−7.0 %**
SEO: ECF	47.1 %	34.4 %	−12.7 %**
Credit score	13.2 %	8.1 %	−5.1 %*
Secondary market	14.1 %	8.8 %	−5.3 %*
Independent variables			
Successful offering (%)	72.2 %	68.6 %	−3.6 %
Equity offered (%)	18.5 %	16.9 %	−1.21 %
Positive sales	47.9 %	47.4 %	−0.5 %
TMT Size (No.)	6.80	6.54	−0.26
Target capital (000 US$)	290.27	377.12	86.85*
Debt-to-Total Assets	4.59 %	6.21 %	1.62 %
Tangible-to-Total Assets	6.42 %	6.54 %	0.12 %
Campaign quality	2.21	2.27	0.06

Table 5
Post-campaign success and platform team member investment. This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 555 offers in our sample. Δ-Pseudo R^2 identifies the change in the statistics due to the inclusion of the variable Platform member investment. Industry dummies are included in all specifications (with respect to a model limited to all other control variables). In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit scores (5)	Secondary markets (6)
Successful offering	−0.189**	0.852***	0.636***	0.791***	0.262***	0.421***
	(0.084)	(0.151)	(0.146)	(0.148)	(0.091)	(0.179)
Equity offered	1.864*	−3.340***	−5.731***	−3.218**	−1.216*	−4.575**
	(1.114)	(1.126)	(1.295)	(1.165)	(0.606)	(2.259)
Positive sales	−0.225*	0.274**	0.147	0.268**	0.160	0.977***
	(0.130)	(0.127)	(0.124)	(0.115)	(0.246)	(0.195)
TMT size	−0.069*	0.101**	0.059	0.091**	0.067	0.101*
	(0.038)	(0.045)	(0.043)	(0.038)	(0.061)	(0.060)
Target Capital	−0.260***	0.285***	0.079	0.266***	0.879***	0.290**
	(0.084)	(0.086)	(0.081)	(0.075)	(0.132)	(0.113)
Debt-to-Total Assets	0.418	−0.493	−0.661	−0.481	−0.365	−0.261
	(0.369)	(0.391)	(0.408)	(0.308)	(0.666)	(0.612)
Tangible-to-Total Assets	−0.096	0.398	0.098	0.365	0.534	0.039
	(0.399)	(0.393)	(0.426)	(0.298)	(0.642)	(0.685)
Campaign quality	−0.012	0.126	0.138	0.087	0.011	0.013
	(0.088)	(0.108)	(0.108)	(0.105)	(0.191)	(0.148)
Platform member investment	0.127	−0.213**	−0.350***	−0.134**	−1.362***	−0.203*
	(0.127)	(0.096)	(0.127)	(0.052)	(0.180)	(0.109)
Constant	2.630***	−3.601***	0.603	−2.468***	−12.387***	−4.919***
	(1.012)	(1.080)	(1.024)	(0.685)	(1.772)	(1.378)
Observations	555	555	555	555	555	555
Pseudo R^2	0.128	0.163	0.171	0.162	0.348	0.221
Δ-Pseudo R^2	0.006	0.011	0.012	0.010	0.012	0.008
(due to Platform member investment)						
Log-likelihood	−303.4	−296.2	−290.1	−296.2	−98.6	−129.1

market listing.

In Table 5, we find that platform team member investments are positively but not significantly related to venture failure. However, we find significant and negative relationships between platform team member investments and follow-on fundraising, credit scores, and secondary listing of shares. Our results are significant at less than 1 % for post-campaign fundraising by private equity and credit scores, at less than 5 % for all types of post-campaign fundraising and for fundraising by follow-on crowdfunding campaigns, and at less than 10 % for secondary listing. These findings suggest that platform member investments support the firms with weaker prospects and are consistent with Hypothesis 1. In terms of economic magnitude, the coefficient of −0.213 in Model 2 implies that platform investments decrease the likelihood of follow-on fundraising by 8 %, in all firms, when estimating the effect using average values for continuous variables, and median values for dummy variables. The effect is larger in magnitude when calculated for fundraising by private equity (−13 %). Platform investments also significantly reduce the probability of receiving good credit scores (−43 %) and secondary listing (−8 %).[10]

We replicate our analysis reported in Table 5 by also including a variable measuring the platform team member investment value (for which we observe great variability; contrary to the number of platform investments which is typically either 0 or 1). Results reported in Table 6 show that the negative effects on fundraising, credit score, and secondary listing likelihood are even more robust when a coefficient for platform team member investment value is estimated.[11] Hence, the negative correlation between platform team member investments and post-campaign outcomes is stronger for larger investment amounts. It is further evidence in line with our logic linked to Hypothesis 1.

In Table 7, we run our models again on the subset of campaigns that successfully fundraised and now also include platform investment withdrawal. As Meoli and Vismara (2021) showed, platform members can invest (to attract subsequent investments from the crowd) and subsequently withdraw their investments during a cooling-off period. In unsuccessful campaigns, all investors automatically get their money back (so investment withdrawal is not relevant). However, in campaigns that successfully fundraise, if platform members knowingly support firms with lower prospects (by investing, which via information cascade and herding effects then leads to subsequent investments by the crowd (Cong and Xiao, 2024; Vismara, 2018)), they might want to subsequently withdraw their investments. By doing so, they reduce the cost they incur from knowingly supporting firms with lower prospects. Consistent with this idea, in Table 7, we find that platform member investment withdrawal is related to higher venture failure rates and *additional* negative effects for follow-on fundraising (at less than 10 % statistical significance for all types of follow-on fundraising), and secondary market listing (at less than 1 % statistical significance). These findings support Hypothesis 2. In terms of economic magnitude, the coefficient of −0.172 and −0.415 in Model 2 imply that platform investments decrease the likelihood of follow-on fundraising by 6 %, and platform investment withdrawal by an additional 13 %, when estimating the effect by using average values for continuous variables, and median values for dummy variables.[12]

In Table 8, we examine the upper echelons dummy. Investments made by the platform's upper echelons are associated with more negative post-campaign outcomes, at a statistical significance of less than 10 % for failure, less than 5 % for post-campaign fundraising and secondary listing, and less than 1 % for credit scores. These findings support Hypothesis 3, stating that upper echelons have larger incentives to support weaker firms to increase platform fundraising success rates, platform size, and platform profitability. In terms of economic magnitude, the effect on follow-on fundraising is more than 50 % stronger when the platform investment is carried out by a member of the upper echelon. A similar magnitude can be estimated on the other outcome variables.[13]

4.3. Additional analyses

In this section, we report the results of additional analyses. In particular, we address endogeneity concerns, the issue of investment timing, the effects of investment withdrawals by non-platform team members, and alternative specifications for the dependent variables.

4.3.1. Determinants of campaign funding and endogeneity concerns

In our main tests, we show that campaigns that received platform team member investments exhibit weaker post-campaign outcomes, consistent with our explanation that platform team members decided to support (selected) firms with weaker prospects. One could argue that platform member investments and post-campaign outcomes may be jointly determined by an unobserved or unobservable variable, and thus that there is an endogeneity concern related to omitted variables. Empirically, we regress a bivariate Probit model on our full sample of 555 campaigns, comprising two equations, where the first one is aimed at estimating the determinants of

[10] As a robustness test, we also ran a sample split for (a) campaigns that successfully fundraised and (b) campaigns that did not fundraise. We observe very similar results for both successful and unsuccessful campaigns on the relationship between platform member investments and post-campaign outcomes.

[11] The magnitude of the estimated effects on likelihood are very similar to those estimated in Table 5, when summing up the effect due to the presence of a platform investment with the effect due to the platform investment value.

[12] The increase in the quality of fit, as measured by the increase in the Pseudo R-squared of all models, provides support for an increase in significance in adding Platform withdrawal to each model.

[13] The increase in the quality of fit, as measured by the increase in the Pseudo R-squared of all models, provides support for an increase in significance in adding Platform Upper Echelons to each model. In unreported tests, we further added the investment amounts by the upper echelon members. However, this variable had no *additional* effect, beyond the investment dummy itself.

Table 6
Post-campaign success, platform team member investment, and platform team member investment value. This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 555 offers in our sample. We add to the specification in Table 5, Models 1–6 the variable platform member investment value. Δ-Pseudo R^2 (a) identifies the change in the statistics due to the inclusion of Platform member investment with respect to a model limited to control variables, and Δ-Pseudo R^2 (b) identifies the change in the statistics due to the inclusion of Platform member investment value (with respect to a model with controls and Platform member investment). Industry dummies are included in all specifications. In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit scores (5)	Secondary markets (6)
Successful offering	−0.196	0.851***	0.628***	0.788***	0.256***	0.414***
	(0.135)	(0.153)	(0.147)	(0.145)	(0.087)	(0.170)
Equity offered	1.870*	−3.341***	−5.751***	−3.221**	−0.871	−6.701***
	(1.113)	(1.126)	(1.297)	(1.154)	(0.617)	(2.265)
Positive sales	−0.226*	0.274**	0.147	0.259**	0.114	0.979***
	(0.129)	(0.128)	(0.124)	(0.117)	(0.249)	(0.225)
TMT size	−0.069*	0.101**	0.058	0.093**	0.047	0.049
	(0.038)	(0.045)	(0.043)	(0.042)	(0.060)	(0.054)
Target Capital	−0.263***	0.285***	0.081	0.272***	1.006***	0.437***
	(0.084)	(0.086)	(0.081)	(0.081)	(0.140)	(0.129)
Debt-to-Total Assets	0.403	−0.495	−0.673	−0.484	−0.366	−0.237
	(0.371)	(0.392)	(0.411)	(0.312)	(0.640)	(0.673)
Tangible-to-Total Assets	−0.101	0.399	0.092	0.373	0.568	0.088
	(0.400)	(0.393)	(0.425)	(0.301)	(0.647)	(0.734)
Campaign quality	−0.011	0.126	0.138	0.086	0.009	0.055
	(0.089)	(0.108)	(0.108)	(0.104)	(0.195)	(0.181)
Platform member investment	0.131	−0.126*	−0.241*	−0.128**	−1.266**	−0.190***
	(0.128)	(0.068)	(0.130)	(0.050)	(0.505)	(0.042)
Platform member investment value	0.022	−0.064**	−0.046*	−0.058**	−0.140***	−0.037***
	(0.039)	(0.030)	(0.021)	(0.027)	(0.062)	(0.012)
Constant	2.687***	−3.589***	0.665	−2.468***	−13.963***	−6.404***
	(1.019)	(1.080)	(1.027)	(0.685)	(1.914)	(1.529)
Observations	555	555	555	555	555	555
Pseudo R^2	0.133	0.171	0.177	0.170	0.353	0.231
Δ-Pseudo R^2 (a) *(due to Platform member investment)*	0.006	0.011	0.012	0.010	0.012	0.008
Δ-Pseudo R^2 (b) *(due to Platform investment value)*	0.005	0.008	0.006	0.008	0.005	0.010
Log-likelihood	−302.3	−295.8	−289.9	−295.9	−96.5	−115.8

platform team member investments, and the second the probability of a given outcome conditional on the probability that a platform team member has invested. To grant identification, the first model includes an exogenous instrumental variable, namely the number of competing offerings which affects the probability of investment by a platform member (Competing offerings), while also including all controls in our analysis. We expect that platform members tend to invest when their interventions are more necessary to enhance the chances of the success of the offerings, and therefore we expect Competing offerings to be positively linked to the likelihood of platform member investments.

Table 9 reports the results of this analysis. In this table, Model (a) is the first equation of the bivariate Probit model, estimating the probability of receiving a platform member investment. Our results show that platform team member investments are more likely when traditional signals of quality (positive sales, team size) are missing, when Competing offerings (our instrumental variable) and Target capital are higher, namely when the expectations to raise funds are lower. Models (b1) to (b6) replicate our analysis on the effects of platform team member investments, confirming our previous findings also when controlling for the potential endogeneity.

4.3.2. Investment timing

Meoli and Vismara (2021) show that to influence other investors, investments should occur during the earlier days of the offering. In Table 10, we examine the effect of platform investment timing. We add to our baseline specification a variable equal to the first platform investment day (a count variable equal to 1 if the first platform investment was carried out on the first day of the campaign, 2 on the second, and so on). Platform investments performed in the earlier stage of the campaign are more strongly related to post-campaign performance. In fact, the later the platform investment, the smaller the effect of platform investments on post-campaign outcomes. This evidence is again consistent with the idea that platform team members invest to encourage others to join firms with weaker prospects.[14]

[14] In unreported analyses we tested the robustness of our analyses when including a variable measuring early investments during the campaign, namely the percentage of the target amount raised in the first five days of a campaign. The significance of platform investments is unchanged even under this specification.

Table 7
Post-campaign success and investment withdrawals (successful offers only). This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 388 successful offers in our sample. We add to the specification in Table 5, Models 1–6 the variable platform withdrawals. Δ-Pseudo R^2 (a) identifies the change in the statistics due to the inclusion of Platform member investment with respect to a model limited to control variables, and Δ-Pseudo R^2 (b) identifies the change in the statistics due to the inclusion of Platform withdrawal (with respect to a model with controls and Platform member investment). Industry dummies are included in all specifications. ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit scores (5)	Secondary m. (6)
Equity offered	4.487***	−2.780*	−5.429***	−2.662*	−1.219	5.037**
	(1.604)	(1.622)	(1.646)	(1.534)	(2.235)	(2.373)
Positive sales	−0.297*	0.328**	0.219	0.316**	0.160	0.990***
	(0.168)	(0.153)	(0.148)	(0.161)	(0.245)	(0.190)
TMT size	−0.012	0.178***	0.111**	0.164***	0.067	0.077
	(0.041)	(0.043)	(0.045)	(0.051)	(0.062)	(0.062)
Target Capital	−0.330***	0.619***	0.061	0.621***	0.877***	0.218**
	(0.114)	(0.113)	(0.102)	(0.124)	(0.140)	(0.104)
Debt-to-Total Assets	0.350	−0.897*	−0.845	−0.878**	−0.363	−0.449
	(0.498)	(0.476)	(0.515)	(0.401)	(0.669)	(0.641)
Tangible-to-Total Assets	−0.316	1.189**	0.073	1.167**	0.535	0.247
	(0.537)	(0.506)	(0.537)	(0.495)	(0.644)	(0.669)
Campaign quality	−0.029	0.118	0.123	0.116	0.011	−0.025
	(0.125)	(0.127)	(0.127)	(0.134)	(0.191)	(0.134)
Platform member investment	0.156*	−0.172**	−0.458***	−0.168*	−1.364***	−0.368**
	(0.081)	(0.072)	(0.164)	(0.091)	(0.201)	(0.141)
Platform withdrawal	0.540**	−0.415*	−0.219	−0.405*	−0.008	−0.761***
	(0.223)	(0.229)	(0.212)	(0.224)	(0.318)	(0.251)
Constant	3.157**	−6.554***	−0.511	−5.735***	−12.367***	−4.174***
	(1.281)	(1.362)	(1.219)	(1.227)	(1.833)	(1.260)
Observations	388	388	388	388	388	388
Pseudo R^2	0.108	0.132	0.116	0.134	0.319	0.244
Δ-Pseudo R^2 (a)	0.008	0.011	0.011	0.009	0.012	0.009
(due to Platform member investment)						
Δ-Pseudo R^2 (b)	0.005	0.007	0.006	0.008	0.004	0.009
(due to Platform withdrawal)						
Log-likelihood	−187.5	−208.7	−217.5	−208.5	−98.6	−125.0

4.3.3. *Withdrawals by the crowd*

When testing Hypothesis 2, we assessed that withdrawals by platform investors negatively relate to post-campaign performance. However, both platform members but also crowd investors in general have the right to withdraw, and this could be for a multitude of reasons. It raises the question of whether all investors' withdrawals may actually relate to negative post-campaign performance. If this were the case, it would suggest that platform team members do not necessarily misuse private information and deliberately withdraw from the firms with the weakest prospects but rather that there is a general tendency to withdraw from firms that eventually show weaker post-campaign performance. We replicate our former analysis on withdrawals and report in Table 11 the results on post-campaign performance (limited to successful campaigns) when including a variable equal to the number of withdrawals by other investors (i.e., non-ECF platform members) before the closing of the campaign. Interestingly, Table 11 shows no significant effects for total withdrawals from the crowd. This finding suggests that platform team members' withdrawals are driven by other dynamics than withdrawals by the crowd in general.

4.3.4. *Alternative definitions for the dependent variables*

In Table 12, we test for the robustness of our analyses[15] when replacing our dichotomous dependent variables with continuous information available, and in particular: a) a dummy variable for Seasoned Equity Offering with the capital raised (Models 1 and 2); b) a dummy variable for Credit Score with an ordered scale for possible credit scores (Model 3); c) a dummy variable for access to Secondary Market with a measure of performance on such market (Model 4).

When analyzing the capital raised, we need to estimate a Heckman's two-stage model (Heckman, 1979) to disentangle the qualitative decision to raise funds from the quantitative amount raised (available for 61 cases under the form of Private Equity capital and 216 cases under the form of Equity Crowdfunding). In both cases, we run a first-stage regression to estimate the likelihood of raising funds (either through private equity or equity crowdfunding), including the variable Competing Offerings (number of campaigns raising funds when the focal campaign started) to grant identification. Thus, we report, in Model (1), the second-stage coefficients when regressing in the first stage the likelihood of raising funds through private equity, and in the second round the natural logarithm of the amount raised in the 2 years following the first crowdfunding campaign. Model (2) is analogous to Model (1), though the main

[15] For the sake of saving space, we report here only the replications of our analyses in Table 5, though also our analyses reported in Tables 7 and 8 yielded confirmative results when replicated with these alternative dependent variables.

Table 8
Post-campaign success and platforms' upper echelons. This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 555 offers in our sample. We add to the specification in Table 5, Models 1–6 the variable platform Upper Echelon. Δ-Pseudo R^2 (a) identifies the change in the statistics due to the inclusion of Platform member investment (with respect to a model limited to control variables), and Δ-Pseudo R^2 (b) identifies the change in the statistics due to the inclusion of Platform Upper Echelons (with respect to a model with controls and Platform member investment). Industry dummies are included in all specifications. In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit scores (5)	Secondary m. (6)
Successful offering	−0.189*	0.852***	0.636***	0.850***	0.216***	0.384***
	(0.098)	(0.151)	(0.146)	(0.150)	(0.072)	(0.159)
Equity offered	1.864*	−3.340***	−5.731***	−3.264***	−1.216	−4.575**
	(1.114)	(1.126)	(1.295)	(1.133)	(2.217)	(2.259)
Positive sales	−0.225*	0.274**	0.147	0.293**	0.160	0.977***
	(0.130)	(0.127)	(0.124)	(0.126)	(0.246)	(0.195)
TMT size	−0.069*	0.101**	0.059	0.096**	0.067	0.101*
	(0.038)	(0.045)	(0.043)	(0.044)	(0.061)	(0.060)
Target Capital	−0.260***	0.285***	0.079	0.285***	0.879***	0.290**
	(0.084)	(0.086)	(0.081)	(0.085)	(0.132)	(0.113)
Debt-to-Total Assets	0.418	−0.493	−0.661	−0.492	0.365	−0.261
	(0.369)	(0.391)	(0.408)	(0.390)	(0.666)	(0.612)
Tangible-to-Total Assets	0.096	0.398	−0.098	0.396	0.534	0.039
	(0.399)	(0.393)	(0.426)	(0.390)	(0.642)	(0.685)
Campaign quality	−0.012	0.126	0.138	0.126	0.011	0.013
	(0.088)	(0.108)	(0.108)	(0.108)	(0.191)	(0.148)
Platform member investment	0.057	−0.143*	−0.250*	−0.141*	−0.754***	−0.108*
	(0.047)	(0.076)	(0.117)	(0.078)	(0.180)	(0.060)
Platform Upper Echelons	0.091*	−0.092**	−0.123**	−0.083**	−0.860***	−0.154**
	(0.048)	(0.042)	(0.055)	(0.040)	(0.117)	(0.073)
Constant	2.630***	−3.601***	0.603	−3.601***	−12.387***	−4.919***
	(1.012)	(1.080)	(1.024)	(1.080)	(1.772)	(1.378)
Observations	555	555	555	555	555	555
Pseudo R^2	0.135	0.169	0.176	0.167	0.359	0.239
Δ-Pseudo R^2 (a) *(due to Platform member investment)*	0.006	0.010	0.012	0.010	0.012	0.008
Δ-Pseudo R^2 (b) *(due to Platform Upper Echelons)*	0.009	0.007	0.006	0.017	0.012	0.020
Log-likelihood	−303.4	−296.2	−290.1	−296.2	−98.6	−129.1

variable is the natural logarithm of the amount raised through follow-up capital raises through crowdfunding, up to 2 years following the first crowdfunding campaign. In both models, results are in line with our first hypothesis, showing that platform team member investments do not only reduce the likelihood of post-campaign funding, but also the amount raised. Statistical significance is lower than 10 % in the first case, and lower than 5 % in the second case.

When replacing the Credit Score dummy, we utilize a Credit Score scale with higher values indicating greater credit quality. Due to the ordinal nature of this scale, we employ an ordered-logit regression and present the results in Model (3). The findings confirm a negative relationship between platform member investment and credit quality.

Last, we introduce a performance measure on the secondary market, namely the first secondary-market valuation over the pre-listing total asset, as derived from the Euripo database (See Vismara et al., 2012 for a description of the database) for 61 campaigns in our dataset. Again, we need to disentangle the qualitative status of going public from the qualitative performance. We therefore implement a Heckman's two-stage model (Heckman, 1979), where we regress in the first stage the likelihood that the company equity shares started being negotiated on any secondary stock market in the two years following the initial equity crowdfunding offering ("Competing offerings" are included to grant identification), and then report in Model (4) the second-stage regression on first second-market valuation over the pre-listing total asset. Results show that platform-member investments determine a (weakly significant) negative impact on performance in the second market.

5. Discussion and conclusion

In ECF markets, earlier investments can reduce the uncertainty of prospective ECF investors by signaling firm potential (e.g., Vismara, 2018), making them more likely to contribute funds. In this study, however, we point to a problem where platform team members can exploit this mechanism and generate false signals. More specifically, we argue and show that platform team members can fabricate support by investing in offerings, especially for those offerings that need it; that is, offerings of firms with lower prospects (obviously, we are not referring to frauds and outright failures that are unlikely to get listed in the first place). By doing so, they foster follow-on investments by the crowd in an effort to increase platform size and upsurge platform revenue generation, which requires successfully funded offerings. However, we also show that most of these platform team member investments are subsequently withdrawn (after they incentivized others to fund the offering) and firms in which such invest-and-withdraw tactics happen

Table 9
Addressing endogeneity concerns. This table reports the coefficients estimated in recursive bivariate Probit regressions using maximum likelihood estimation on different post-campaign outcome variables (see column heading), when instrumenting platform member investment with Competing offers, for the 555 offers in our sample. In the first stage (Model a), we regress Platform member based on the pre-investment observable determinants. This model includes an excluding variable, Competing offerings (namely the number of active campaigns on the platform when the focal campaign was launched), as the identification variable of the selection model. This Model is reported when estimated together with model b1. All other estimations are qualitatively the same. In the second stage (Models b1-b6), we regress outcome variables with the same determinants used in Table 4. The full model is estimated through recursive bivariate Probit estimation as in Van de Ven and Van Praag (1981). Pseudo R^2 is estimated on the full recursive model. Δ-Pseudo R^2 identifies the change in the statistics due to the inclusion of the variable Platform member investment. Industry dummies are included in all specifications (with respect to a model limited to all other control variables). In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Selection (a)	Failure (b1)	SEO: All (b2)	SEO: PE (b3)	SEO: ECF (b4)	Credit score (b5)	Secondary m. (b6)
Successful offering	–	−0.146*	0.491***	0.346***	0.488***	1.370***	1.349***
		(0.086)	(0.085)	(0.080)	(0.079)	(0.198)	(0.203)
Equity offered	0.543	0.714	−1.528*	−2.815***	−1.514*	−0.098	−1.330
	(1.070)	(0.907)	(0.926)	(0.520)	(0.909)	(1.293)	(1.203)
Positive sales	−0.054	−0.145	0.180*	0.108	0.176*	0.218	0.003
	(0.125)	(0.101)	(0.104)	(0.098)	(0.094)	(0.139)	(0.131)
TMT size	−0.115***	0.009	0.145***	0.118***	0.144***	0.059	0.029
	(0.038)	(0.038)	(0.035)	(0.033)	(0.039)	(0.049)	(0.046)
Target Capital	0.401***	−0.426***	0.403***	0.173**	0.398***	0.395***	0.321***
	(0.077)	(0.069)	(0.057)	(0.067)	(0.054)	(0.095)	(0.090)
Debt-to-Total Assets	0.534	0.070	−0.059	−0.094	−0.048	−0.046	−0.116
	(0.371)	(0.275)	(0.084)	(0.306)	(0.062)	(0.418)	(0.410)
Tangible-to-Total Assets	−0.181	−0.147	0.148	0.159	0.132	0.529	0.326
	(0.382)	(0.178)	(0.298)	(0.155)	(0.201)	(0.394)	(0.387)
Campaign quality	0.054	−0.025	0.106	0.117**	0.104	0.211**	0.162*
	(0.089)	(0.032)	(0.067)	(0.059)	(0.071)	(0.096)	(0.095)
Platform member inv.	–	1.280***	−1.370***	−1.294***	−1.368***	−0.752*	−0.967***
		(0.177)	(0.175)	(0.173)	(0.189)	(0.432)	(0.341)
Competing offers	0.023***	–	–	–	–	–	–
	(0.004)						
Constant	–	3.779***	−3.792***	−1.109	−3.792***	−6.225***	−4.880***
		(0.845)	(0.710)	(0.826)	(0.710)	(1.102)	(1.052)
Observations	555	555	555	555	555	555	555
Pseudo R^2		0.171	0.203	0.214	0.203	0.412	0.315
Δ-Pseudo R^2 *(due to Platform m. inv.)*	–	0.012	0.018	0.021	0.019	0.024	0.021
Log-likelihood	–	−619.1	−612.4	−607.1	−612.0	−604.3	−612.9

subsequently display even weaker post-campaign outcomes. Finally, when members of the platform's upper echelons make investments, such investments might additionally be viewed as endorsements by the crowd, although the upper echelons are characterized by even greater goal incongruence with the crowd because they obtain most of the (non-)financial rewards from owning or managing larger, more profitable platforms on which deals happen. We indeed find that investments related to the platform's upper echelons are related to firms with even weaker post-campaign outcomes. Combined, this study provides strong evidence for the idea that platform team member investments represent false signals. With our study, we open the debate regarding the darker role platforms can play in the ECF market.

Importantly, our evidence is *not* inconsistent with the idea that platforms have very important screening and due diligence roles (e.g., Cumming et al., 2019a; Kleinert et al., 2022). The due diligence they perform is highly valuable to increase the quality of the firms listed on the platform and could protect investors from potential expropriation by ill-intentioned entrepreneurs (Cumming et al., 2023). Not only do platforms dismiss the lowest-quality projects, but the mere fact of performing due diligence also increases the informational quality provided by entrepreneurs and in turn reduces the information asymmetry between investors and entrepreneurs (Cumming et al., 2021). However, our study calls to the fact that even after platform due diligence, firms with varying prospects get listed on ECF platforms, and that platform team members have incentives to support the firms with weaker prospects within the set of listed firms. Overall, our study does call for a balanced debate regarding the bright and dark sides of ECF platforms.

Finally, we also want to stress that not *all* investments made by platform team members are necessarily ill-intentioned. Some platform team member investments might reflect a genuine belief in the growth potential of the venture. However, *on average*, we do observe a negative correlation between platform team member investments and post-campaign venture outcomes. Moreover, based on the private information collected during the due diligence phase it seems highly unlikely that platform team members randomly, though consistently invest in the weaker ventures. Even more intriguing is the withdrawal behavior of platform team members, which relates to firms with even weaker post-campaign outcomes (a result we do not find for crowd investment withdrawals in general). Also, here we recognize that platform team members might withdraw their investments for multiple reasons (just like the crowd in general). For instance, the arrival of new information might explain why investments are withdrawn. However, in this case, platform team members should be affected *less*, and certainly not more, by this new information (based on the private information they already

Table 10
Post-campaign success: controlling for the timing of platform investment. This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 555 offers in our sample. We add to the specification in Table 5, Models 1–6 a variable equal to the first platform investment day (a count variable equal to 1 if the first platform investment was carried out on the first day of the campaign, 2 on the second, and so on). Δ-Pseudo R^2 (a) identifies the change in the statistics due to the inclusion of Platform member investment (with respect to a model limited to control variables), Δ-Pseudo R^2 (b) identifies the change in the statistics due to the inclusion of Platform Investment day (with respect to a model with controls and Platform member investment). Industry dummies are included in all specifications. In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit scores (5)	Secondary markets (6)
Successful offering	−0.193*	0.863***	0.639***	0.861***	0.194***	0.298***
	(0.090)	(0.153)	(0.145)	(0.149)	(0.079)	(0.118)
Equity offered	1.828*	−3.120***	−5.571***	−3.028***	−2.191	5.553***
	(1.106)	(1.128)	(1.296)	(1.095)	(2.244)	(2.067)
Positive sales	−0.228*	0.278**	0.151	0.264**	0.102	1.105***
	(0.130)	(0.127)	(0.124)	(0.113)	(0.284)	(0.226)
TMT size	−0.063*	0.113**	0.066	0.109**	0.034	0.106*
	(0.037)	(0.046)	(0.044)	(0.040)	(0.062)	(0.063)
Target Capital	−0.255***	0.250***	0.107	0.261***	0.932***	0.194
	(0.084)	(0.086)	(0.082)	(0.093)	(0.137)	(0.122)
Debt-to-Total Assets	0.439	−0.549	−0.693*	−0.557	−0.585	−0.176
	(0.370)	(0.396)	(0.409)	(0.388)	(0.614)	(0.650)
Tangible-to-Total Assets	−0.094	0.411	0.093	0.399	0.398	0.280
	(0.397)	(0.394)	(0.423)	(0.345)	(0.657)	(0.725)
Campaign quality	−0.015	0.131	0.142	0.128	0.017	0.021
	(0.088)	(0.104)	(0.105)	(0.116)	(0.190)	(0.183)
Platform member investment	0.218*	−0.466***	−0.557***	−0.452***	−0.469**	−0.486*
	(0.111)	(0.168)	(0.169)	(0.124)	(0.228)	(0.262)
Platform Investment day	−0.013*	0.011***	0.007*	0.010***	0.082***	0.027***
	(0.007)	(0.004)	(0.004)	(0.003)	(0.016)	(0.008)
Constant	2.563**	−3.149***	0.954	−3.252***	−13.242***	−3.759**
	(1.017)	(1.074)	(1.029)	(1.072)	(1.868)	(1.514)
Observations	555	555	555	555	555	555
Pseudo R^2	0.152	0.176	0.182	0.174	0.366	0.252
Δ-Pseudo R^2 (a) *(due to Platform member investment)*	0.006	0.010	0.012	0.010	0.012	0.008
Δ-Pseudo R^2 (b) *(due to Platform investment day)*	0.025	0.012	0.011	0.017	0.017	0.031
Log-likelihood	−303.1	−292.3	−288.6	−295.1	−89.8	−123.0

possess from due diligence), relative to the crowd in general. Still, this alternative pattern is not supported by our findings. Overall, while we do not claim that all platform investments (withdrawals) are questionable, our evidence does suggest that the invest-and-withdraw strategy is not a random practice but significantly correlates with more negative long-term venture outcomes.

5.1. Contributions

5.1.1. The signaling literature

Our study adds to signaling theory in entrepreneurship and management (Bafera and Kleinert, 2023; Connelly et al., 2011) by pointing towards the dangers of false signals. In Spence's (1973) original framework, signals need to be observable and costly (and, ultimately, correlated with firm quality) to be credible. Moreover, signal receivers almost instantaneously evaluate such signals correctly from "a wild assortment of possible stimuli and cues" (Felin et al., 2017: 1056) that are conveyed to them. In such a framework, false signals will be quickly detected. However, the assumption that signal receivers are fully rational in the original formulations of signaling theory has been subject to debate (Bergh et al., 2014). Accordingly, a cognitive view of signaling has emerged in management and entrepreneurship that accounts for the possibility that signal receivers vary in the signals they attend to and how they evaluate signals; ultimately, signal interpretation could even be fallible (e.g., Drover et al., 2018; Hallen and Pahnke, 2016; Heil and Robertson, 1991; Vanacker et al., 2020). Prior research has shown that with high information asymmetry and an unsophisticated crowd, both the costly and costless signals conveyed by firms can influence crowd decision-making (e.g., Anglin et al., 2018; Steigenberger and Wilhelm, 2018). We make an important contribution to this literature by pointing to an underexplored issue, namely ECF platforms may want the crowd to believe that the early investments they make are credible (costly) while, in fact, they falsely manufacture investments to mislead the crowd. Hence, if the *possible* signals are not correctly deciphered by the crowd (because they do not have the time, means, and/or knowledge), false signaling might occur, where prospective investors' decision-making is influenced by what they believe are credible signals, which ultimately draw them towards firms with weaker prospects.

Our evidence shows that platform team members indeed invest in offerings on their platforms (which are visible and costly) to influence the crowd *but* these investments especially happen in offerings with weaker post-campaign outcomes, and they later on

Table 11
Post-campaign success: controlling for platform investors' and other investors' withdrawals (successful offers only). This table reports the coefficients estimated in Probit regressions on different post-campaign outcome variables (see column heading) for the 388 successful offers in our sample. This is similar to Table 6 but also includes other investors' withdrawals, a count variable equal to the number of withdrawals by other investors before the closing of the campaign. Δ-Pseudo R^2 (a) identifies the change in the statistics due to the inclusion of Platform member investment with respect to a model limited to control variables, Δ-Pseudo R^2 (b) identifies the change in the statistics due to the inclusion of Platform withdrawal (with respect to a model with controls and Platform member investment), and Δ-Pseudo R^2 (c) identifies the change in the statistics due to the inclusion of Other investors' withdrawal (with respect to a model with controls, Platform member investment, and Platform withdrawal). Industry dummies are included in all specifications. ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	Failure (1)	SEO: All (2)	SEO: PE (3)	SEO: ECF (4)	Credit score (5)	Secondary m. (6)
Equity offered	4.585***	−2.840*	−5.509***	−2.832*	−1.393	5.939***
	(1.606)	(1.625)	(1.630)	(1.563)	(2.307)	(1.860)
Positive sales	−0.244	0.313**	0.209	0.309**	0.758***	1.007***
	(0.167)	(0.154)	(0.149)	(0.160)	(0.252)	(0.200)
TMT size	0.004	−0.181***	−0.113**	−0.179***	−0.095	−0.053
	(0.041)	(0.044)	(0.046)	(0.038)	(0.060)	(0.049)
Target Capital	−0.428***	0.644***	0.079	0.636***	1.150***	0.156
	(0.128)	(0.119)	(0.110)	(0.112)	(0.145)	(0.126)
Debt-to-Total Assets	0.381	−0.906*	−0.849	−0.895*	−0.174	−0.470
	(0.501)	(0.475)	(0.516)	(0.389)	(0.702)	(0.646)
Tangible-to-Total Assets	−0.290	1.197**	0.081	1.179**	0.569	0.239
	(0.548)	(0.506)	(0.538)	(0.484)	(0.620)	(0.681)
Campaign quality	−0.015	0.113	0.120	0.112	0.096	0.020
	(0.127)	(0.128)	(0.128)	(0.136)	(0.211)	(0.138)
Platform member investment	−0.243*	0.195**	0.472***	0.189	−1.350***	−0.482**
	(0.131)	(0.084)	(0.166)	(0.175)	(0.225)	(0.216)
Platform withdrawal	0.456**	−0.388*	−0.200*	−0.382*	−0.369***	−0.716***
	(0.228)	(0.234)	(0.107)	(0.231)	(0.112)	(0.266)
Other investor's withdrawal	0.014	−0.004	−0.003	−0.012	0.215	0.612
	(0.017)	(0.007)	(0.007)	(0.006)	(0.215)	(0.511)
Constant	4.117***	−6.795***	−0.683	−6.795***	−14.521***	−3.664**
	(1.418)	(1.406)	(1.286)	(1.406)	(1.767)	(1.458)
Observations	388	388	388	388	388	388
Pseudo R^2	0.106	0.132	0.115	0.132	0.320	0.244
Δ-Pseudo R^2 (a)	0.006	0.010	0.011	0.009	0.011	0.008
(due to Platform member inv.)						
Δ-Pseudo R^2 (b)	0.005	0.007	0.006	0.008	0.004	0.010
(due to Platform withdrawal)						
Δ-Pseudo R^2 (c)	0.001	0.002	0.002	0.001	0.003	0.002
(due to Other investors' withdr.)						
Log-likelihood	−185.8	−208.5	−217.5	−208.5	−90.1	−124.2

withdraw these investments (with these withdrawals being less visible). Although not directly reported, supplementary tests, also confirm that when platform team members invest in offerings traditional quality signals (e.g., equity retained and positive sales) (e.g., Ahlers et al., 2015; Vismara, 2016) have a reduced impact on fundraising success. Thus, this evidence confirms the idea that signal receivers focus on platform team member investments when making their investment decisions, and at the same time, put less importance on quality signals. Combined, with their investments, platform team members trick other ECF investors into firms with weaker post-campaign outcomes but withdraw their own investments from such campaigns during the cooling-off period.

Moreover, our findings on the role of the platform's upper echelons have important additional theoretical implications for the endorsement signaling literature. Typically, when organizations have performed due diligence, they are expected to have private information. The fact that the organization's upper echelons invest in a venture would generally be viewed as an endorsement signal (Stuart et al., 1999). Venture capital investors, for example, are generally viewed as excellent endorsers (Davila et al., 2003; Megginson and Weiss, 1991; Vanacker and Forbes, 2016). Although the platform's upper echelons can have access to private information from the platform's due diligence activities, our findings suggest the dangers of viewing their support as an endorsement.

Rather surprisingly then, prior research has generally framed endorsement effects as valuable for external evaluators judging new entrepreneurial ventures in a world characterized by informational asymmetry and uncertainty (e.g., Courtney et al., 2017; Drover et al., 2017b; Janney and Folta, 2006; Kleinert et al., 2020; Plummer et al., 2016). Certainly, theory and research have also pointed out that endorsement signals might have varying value based on, for example, firm characteristics, market conditions, and reputations of the endorsers (e.g., Gulati and Higgins, 2003; Megginson and Weiss, 1991; Stuart et al., 1999). In the extreme, Megginson and Weiss (1991) point out that endorsers might not be credible and when this is the case, endorsements will simply be ignored. Importantly, our study highlights investments by the platform's upper echelons should not simply be disregarded as non-credible, actually, they might signal firms have *weaker* prospects. Overall, our evidence points towards the possibility of false (or fabricated) endorsements by the ECF platform's upper echelon that have negative effects for both investors and entrepreneurs—a possibility that has remained underexplored in the endorsement signaling literature (Bafera and Kleinert, 2023). By following the fabricated investments of the ECF platform's upper-echelon members, ECF investors invested in weaker firms. Moreover, also some of the entrepreneurs who benefited

Table 12
Alternative measures for post-campaign success. This table reports the coefficients estimated when replacing our main dependent variables with continuous measures. Model (1) reports second-stage coefficients from Heckman's two-stage model (Heckman, 1979), when regressing in the first stage the likelihood of raising funds through private equity, and in the second stage the natural logarithm of the amount raised in the 2 years following the first crowdfunding campaign. In the first model "Competing offerings" are included in order to grant identification. Model (2) is analogous to Model (1), though the main variable is the natural logarithm of amount raised through follow-up capital raises through crowdfunding, up to 2 years following the first crowdfunding campaign. Model (3) reports ordered-logit coefficients, when regressing a Credit Score categorical variable where larger values indicate greater credit quality. Model (4) reports second-stage coefficients from Heckman's two-stage model (Heckman, 1979), when regressing in the first stage the likelihood that the company equity shares started being negotiated on any secondary stock market in the two years following the initial equity crowdfunding offering ("Competing offerings" are included in order to grant identification), and in the second stage the first second-market valuation over the pre-listing total asset is used. All first-stage models (Model 1, 2 and 4) are run on our full sample of 555 offers. Industry dummies are included in all specifications. In all models, ***, **, and * represent significance levels below 1, 5, and 10 %, respectively.

	SEO: PE Ln(Amount) (1)	SEO: ECF ln(Amount) (2)	Credit scores (Categories) (3)	Secondary markets (Performance) (4)
Successful offering	2.886*	5.039	0.643***	0.260*
	(1.735)	(3.681)	(0.108)	(0.138)
Equity offered	−1.415	−1.500	−0.255	−0.125
	(1.954)	(2.170)	(0.920)	(0.669)
Positive sales	1.645**	0.607*	0.057	0.134
	(0.719)	(0.353)	(0.110)	(0.106)
TMT size	0.578**	0.484	0.109***	0.003
	(0.235)	(0.350)	(0.031)	(0.038)
Target Capital	1.578***	0.738*	0.102	0.045
	(0.593)	(0.379)	(0.072)	(0.107)
Debt-to-Total Assets	−2.327	−2.313	−0.404	−0.142
	(1.612)	(3.870)	(0.322)	(0.226)
Tangible-to-Total Assets	2.807**	0.553	0.409	0.026
	(1.126)	(1.562)	(0.355)	(0.189)
Campaign quality	0.320	0.418	0.077	0.021
	(0.411)	(0.863)	(0.078)	(0.044)
Platform member investment	−0.549*	−1.226**	−0.216**	−0.102*
	(0.287)	(0.610)	(0.104)	(0.056)
IMR (λ)	3.706*	7.645	–	0.057
	(1.896)	(5.683)		(0.081)
Constant Cut 1	–	–	1.662*	–
			(0.870)	
Constant Cut 2	–	–	1.711**	–
			(0.871)	
Constant Cut 3	–	–	2.436***	–
			(0.870)	
Constant Cut 4	–	–	2.591***	–
			(0.873)	
Constant	25.891***	6.291	–	−0.454
	(9.943)	(5.340)		(1.299)
Observations	61	216	555	61
R^2 or (Pseudo R^2)	0.071	0.087	(0.268)	0.107
Log-likelihood	−1514.3	−1641.6	−671.8	−410.2

from platform managers' behaviors in terms of stimulating their fundraising, later had a higher likelihood of having to cope with the stigma of venture failure (e.g., Shepherd and Haynie, 2011).

5.1.2. The literature on financial misconduct and ethical behavior in entrepreneurship

Our study relates to the literature on financial misconduct (e.g., Cumming et al., 2015), where most work has focused on public markets, and ethical behavior in entrepreneurial finance (e.g., Drover et al., 2014; Fassin and Drover, 2017; Harris et al., 2009; Rutherford et al., 2009), which has often focused on investors and/or entrepreneurs. Here, we focus on unethical or problematic behavior by platforms or the intermediaries between investors and entrepreneurs in a private market context. This is a relevant contribution, especially if we consider the often-claimed beneficial role of crowdfunding in supporting ethical ventures (e.g., Defazio et al., 2021; Gafni et al., 2021).

More broadly, our evidence on ECF platform team members' possible misuse of private information to support firms with weaker prospects on their platform to fundraise might bear similarities to "insider trading" from public markets. However, we hasten to point out important differences. First, insider trading is about making transactions to take direct advantage of private information (Bhattacharya, 2014). Here, the behavior aims to influence subsequent investors by manipulating the set of publicly available information (i.e., providing a false endorsement signal). Second, from a legal perspective, there is no trading because investments are usually withdrawn. Actually, platform team members have the legal right to withdraw their investments; if anything, they take (unethical) advantage of legal protection towards online consumers.

5.1.3. The ECF and broader entrepreneurial finance literature

Our study also contributes to the ECF and broader entrepreneurial finance literature. Studies on the functioning of ECF platforms have emerged only recently (e.g., Butticè and Vismara, 2022; Cumming et al., 2019a; Kleinert et al., 2022; Johan and Reardon, 2024). These studies have highlighted that platforms can reduce entrepreneur-investor agency conflicts via their due diligence activities. Research in entrepreneurial finance, more broadly, has focused on these entrepreneur-investor agency conflicts (e.g., Bellavitis et al., 2019). In this paper, we theorize on and present evidence of an underexplored ECF platform-investor agency conflict, which might induce platform team members to manufacture false signals towards the crowd.

Hence, our study also contributes to agency theory (e.g., Jensen and Meckling, 1976) in entrepreneurial finance. A general idea in agency theory is that governance mechanisms, such as providing managers with large ownership and/or monitoring by external owners, can limit problematic managerial behaviors, including fraudulent behaviors (e.g., Shi et al., 2017; Zahra et al., 2000). When managers are adequately incentivized to maximize firm value, this is also expected to benefit other firm stakeholders. Rather, surprisingly, the ECF platform we examine has a significant overlap between management and shareholders and is monitored by professional external investors. However, despite having the "right" theoretical conditions in place for ECF platform managers to maximize firm value, we show that especially the upper echelons of the platform do engage in problematic behavior by supporting firms with weaker prospects on their platforms (and often withdrawing their investments before the closure of the campaign), which harms ECF investors. Ultimately, the fact that platform team members support lower-quality firms that list on their platform—to increase platform size (i.e., deals getting done) and platform profitability—pushed ECF investors to invest in riskier, lower-quality firms. This is a key agency problem in itself, which additionally explains ECF platform team members' false signaling towards the crowd of ECF investors.

The ECF literature has also established that successfully raising money on ECF platforms only represents the beginning. Entrepreneurs usually still need to develop viable businesses that grow and perform. Research has made significant progress in understanding what happens to firms after successful ECF campaigns in terms of follow-on fundraising, survival, performance, and innovation (e.g., Cumming et al., 2025; Butticè et al., 2020; Coakley et al., 2022b; Hornuf et al., 2018; Hornuf et al., 2022; Signori and Vismara, 2018; Walthoff-Borm et al., 2018a) and unsuccessful crowdfunding campaigns (Rossi et al., 2023; Walthoff-Borm et al., 2018b). In this paper, we present first-time evidence of how platform team member investments (withdrawals) are negatively related to post-campaign outcomes. Still, interestingly, our findings also show that, *on average*, firms that succeed in raising funds on ECF platforms show better post-campaign outcomes than firms that fail to do so. Ultimately, this evidence suggests that, despite shortcomings, there is some value in crowd decision-making in that they can differentiate firms that show weaker versus stronger post-campaign outcomes.

5.2. Limitations and avenues for future research

As with all studies, our study does have limitations, which present avenues for future research. For example, it is worth noting that our data was collected from one single ECF platform. However, some of the patterns we observe, such as the fact that platform team members often invest in offerings listed on their platform, correspond with prior work on other platforms (Gafni and Jeppesen, 2023; Meoli and Vismara, 2021). It also corresponds with what we learned from exploratory interviews with ECF platform founders, managers, and employees, as described in the paper. Importantly, the interviewees work for different platforms in different countries, which further confirms that the invest-and-withdraw tactic is not a phenomenon linked to one ECF platform or one geographical market. Still, Johan and Reardon (2024) show that on US platforms, platform ownership in offerings can vary significantly. Thus, further research can examine factors, such as platform size, platform reputation, or types of ownership stakes, and how these factors influence the relationship between platform team member investments (withdrawals) and post-campaign outcomes. Overall, we call for more research regarding potential problematic behavior across platforms. For example, there are several different types of crowdfunding platforms (i.e., rewards-based crowdfunding: e.g., Anglin et al., 2018; Chan et al., 2020; Parhankangas and Renko, 2017; or lending-based crowdfunding: Allison et al., 2013), and platform team members on these different platforms may act differently.

We also see many avenues for future research across institutional settings, including, for instance, the impact of regulations regarding transactions or the impact of informal cultural aspects on the investment behavior of platform team members. As highlighted by Cumming et al. (2021), both formal and informal institutions (e.g., laws and trust, respectively) can significantly affect the behavior of investors, entrepreneurs, and platforms. Hence, future research regarding the need and successful implementation of different corporate governance mechanisms contingent on the institutional context seems valuable. Additionally, it might be interesting to further investigate how fee structures affect problematic behaviors by platform team members or how these fees could be structured to align the interests of platforms and investors. This corroborates the call of Ahlstrom et al. (2018) regarding the need for more research on corporate governance mechanisms that help regulate the crowdfunding market. Finally, cultural aspects not only affect the behavior of investors or entrepreneurs, it might also affect the signaling environment and signaling effectiveness (Colombo, 2021). As such, future research regarding the impact of cultural differences on the interpretation of platform team member investments (withdrawals) in different countries seems highly relevant. For example, it is possible that in countries with more corruption or lower trust, platform team members engage more in invest-and-withdraw tactics, however, in such countries, prospective investors may also be more vigilant for such false signals.

Finally, while the use of anonymized data, such as in our study, might not be a widespread practice in the field of entrepreneurial finance, we see important advantages. Anonymized data is highly recommended to ensure objectivity in the empirical analysis (e.g., platforms are less likely to push researchers to focus only on the bright side). Especially given the potentially sensitive nature of the

research topic, platform anonymity should allow for easier access to data and shed light on potentially more questionable behaviors that would otherwise remain unreported. As such, concealing the platform identity, more objective research is made possible, which is important to both academia and practitioners. Indeed, our research is important to uncover potential malpractices, which can influence the long-term growth and survival of the ECF ecosystem (e.g. Cumming et al., 2021; Butticè and Vismara, 2022).

5.3. Practical implications

Our findings contribute to the debate regarding the need for more policy development in ECF markets (e.g., Hornuf and Schwienbacher, 2017). Our evidence highlights that platform team members can have goals that do not necessarily align with the long-term goals of investors (and even entrepreneurs). Our study also suggests that platform team members attempt to influence public information by engaging in false signaling to increase the platform's success by supporting lower-quality firms and then withdrawing their investments from the weakest firms and thus seem to engage in the misuse of private information. More importantly, some seem to misuse the "protection" of online buyers to reduce the cost of supporting lower-quality firms that list on their platforms.

Advocating for more transparency alone regarding the investments made by platform team members might not be enough, however. While it might be good practice to flag investments made by platform team members, these could be viewed (wrongly) by unsophisticated crowd members as "endorsements", which they think are valuable quality signals, but actually represent false endorsements. One might wonder whether platform team members who were involved in the due diligence and selection should be allowed to invest in the first place, and especially whether they should be allowed to withdraw their investments. By avoiding such behaviors, the informational quality provided to the crowd can increase and the potential for manipulation of the investment dynamics is reduced. Interestingly, some crowdfunding platforms now let users know whether an investment is fully committed (the cancellation right period has passed) or could be withdrawn. Better platform governance might help channel the funds to the most promising ventures that eventually provide added value for the economy and as such guarantee the long-term survival and impact of the ECF market. Overall, the governance of ECF platforms should be a key policy concern and area for much more research.

CRediT authorship contribution statement

Virginie Mataigne: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Michele Meoli:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Data curation, Conceptualization. **Tom Vanacker:** Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Silvio Vismara:** Writing – review & editing, Writing – original draft, Project administration, Investigation, Data curation.

Declaration of competing interest

None.

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Data availability

The data that has been used is confidential.

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