The Effects of Relinquishing Control in Platform Ecosystems: Implications from a Policy Change on Kickstarter

Completed Research Paper

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Abstract

Managing platform ecosystems requires the providers to maintain a delicate balance between retaining control and devolving autonomy to complementors in order to encourage contribution and innovation. In this study, we make use of a policy change that abolished the previously mandatory approval process for campaigns on Kickstarter, one of the dominant reward-based crowdfunding platforms. Analyzing a total of 67,384 Kickstarter campaigns under conditions of a natural experiment, we find that abolishing the input control was a double-edged sword for Kickstarter’s ecosystem: While the average platform revenue increased after the policy change, it became more volatile, and while project diversity increased, average campaign quality decreased. Project creators are now confronted with an even higher level of competition, while backers face greater uncertainties about campaign quality, which shifts their focus to alternative quality signals. The new strategy might threaten Kickstarter’s unique status as a high-quality platform in the striving business of crowdfunding.

Keywords: Crowdfunding, platform ecosystems, platform openness, policy change, input control, two-sided markets, natural experiment
Introduction

In the last few years, the concept of crowdfunding has attracted considerable attention among practitioners and scholars alike. It enables the creators of entrepreneurial, social, or creative projects to fund their efforts by collecting rather small contributions from a large number of individuals through an open call on the internet (Mollick 2014; Schwienbacher and Larralde 2012). The success of the crowdfunding concept can largely be attributed to the numerous crowdfunding platforms such as Kickstarter and Indiegogo that provide the necessary infrastructure to facilitate transactions between the distinct user groups. Like other two-sided markets (also referred to as multi-sided platforms), these platforms primarily create value by enabling interactions between groups of customers or other stakeholders, creating indirect network effects among them (Eisenmann et al. 2006). In the context of crowdfunding, the platform provider, together with project creators (also referred to as complementors), and project backers (end-users) form a platform ecosystem (Cusumano and Gawer 2002).

Though economics and strategies for two-sided markets have been the subject of a variety of publications in research areas such as marketing, economics, and information systems in the past (e.g., Armstrong 2006; Rochet and Tirole 2003; Rysman 2009), little is known about what constitutes healthy and viable platform ecosystems in the context of crowdfunding. Specifically, governing crowdfunding platforms requires the owners of the platform to manage a delicate balance between retaining control and devolving autonomy to the project creators in order to encourage them to contribute appealing crowdfunding campaigns (Boudreau 2010; Boudreau 2012; Tiwana et al. 2010). In fact, one of the key differential factors between the major crowdfunding platforms that exist today is their approach towards input control. Input control is a form of formal control or gatekeeping that “represents the degree to which the platform owner uses predefined objective acceptance criteria for judging” which campaigns and project creators are allowed into their platform ecosystem (Tiwana 2014, p. 123). For instance, Indiegogo and Kickstarter, the largest reward-based crowdfunding platforms today, have taken different approaches to openness in terms of the input control they apply. While Indiegogo is completely open in that the platform does not apply any input control mechanisms for project creators and thus allows any individual or organization to start a campaign on their platform, Kickstarter has, from its beginning, chosen to apply input control with a rigorous green-lighting process, meaning that every campaign has to be approved by Kickstarter staff manually before it can be published on the platform. These approaches to input control applied by Kickstarter and Indiegogo can be compared to those taken by Apple and Google in the mobile app market. While Google's Play Store, similar to Indiegogo, does not apply input control mechanisms apart from security checks, Apple's App Store is well known for enacting strict policies to control the quality of apps published on the platform. Though applying such mechanisms is costly and can lead to lower numbers of apps or campaigns available on the platform, in turn, they have made being published on platforms such as Apple's App Store and Kickstarter a quality signal in itself (Mitroff 2012).

In June 2014, however, Kickstarter implemented a policy change and now allows project creators, similar to Indiegogo, to start campaigns on their own terms without requiring any approval from Kickstarter staff. Kickstarter motivated the change with the expectation that it would make the platform easier to use and open it up to new kinds of projects (Kickstarter 2014). While Kickstarter did not reveal the strategic intentions behind the decision to abandon the screening process, the platform has, in the past, lost lucrative projects to competing platforms such as Indiegogo due to the previously strict policies (Jeffries 2014; Kelion 2014). However, not imposing any input control to ensure quality might lead to a fragmented platform flooded with low quality content (Bresnahan and Greenstein 2014; Coughlan 2004).

The policy change gives us the unique opportunity to study the health of Kickstarter’s ecosystem before and after this shock, which is considered to be endogenous for the platform provider Kickstarter but exogenous for the other platform participants, namely, project creators and backers. We want to understand the effects Kickstarter’s decision to remove the high entry barriers—and thus to open their formerly rather closed platform—had on the platform ecosystem by analyzing how backers and project creators reacted to the change and how potential drivers of campaign success changed in response. The policy change thus allows insights into the effects that input control mechanisms have on the success of crowdfunding platforms. Our research is guided by the following research questions:

RQ 1: How does relinquishing input control affect the platform participants and their behavior?

RQ 2: How are the drivers of campaign success affected by the change in input control?
Relinquishing Input Control in Platform Ecosystems

Analyzing a total of 67,384 Kickstarter campaigns that cover the period from December 2013 to December 2014, we found that abolishing input control was a double-edged sword for Kickstarter’s ecosystem: While we see a strong increase in the average number of new campaigns per day and a significant rise in Kickstarter’s revenue, the policy change led to lower average campaign quality and success rates, making the platform less attractive for project creators and backers alike.

Our study contributes to the IS control and still nascent platform ecosystem literature in three important ways. First, ours is one of the first studies to conceptualize and examine input control as a formal control mechanism and to show how its abolishment affects platform participants and their behavior. Prior IS research has focused on output, process, and clan control, but inadvertently neglected input control (e.g., Choudhury and Sabherwal 2003; Kirsch et al. 2002). Our study therefore complements previous IS control studies and demonstrates that input control gains a newfound relevance in platform markets. Second, we add to the growing stream of research on the implications of policy changes on the dynamics within platform ecosystems (e.g., Burch et al. 2015; Claussen et al. 2013). In this regard, our study is the first to examine the effects of a policy change in respect to control mechanisms under conditions of a natural experiment. Finally, and more broadly, our study also shows that policy changes can significantly shift the relative importance of signals for the decision-making of platform users. Therefore, for the providers of platform ecosystems, it is important to realize that decision-making processes of users can not only be affected by adjusting governance strategies, but also that decision cues are fragile and even subtle changes can have drastic consequences for the dynamics among platform stakeholders.

The remainder of the paper is structured as follows: First, the theoretical background is laid out, followed by a description of the research context. Next, we describe our data and research methodology and our descriptive as well as econometric evidence. In the concluding section, we discuss the implications for research and practice and point out the paper’s limitations, as well as promising areas for future research.

Theoretical Background

Governance and Control in Platform Ecosystems

Similar to other platform providers, the owners of crowdfunding platforms face the challenge of aligning their own objectives with those of the other stakeholders within the platform ecosystem, namely, the project creators and backers. Indirect network effects among the distinct groups of stakeholders typically characterize these platform ecosystems, as each side derives positive externalities from the participation of the respective other groups (Bakos and Katsamakas 2004; Benlian et al. 2015). For instance, the success of a crowdfunding platform strongly correlates with the availability of compelling campaigns that attract a sufficient number of interested backers. However, project creators will only be willing to contribute campaigns if the platform provides sufficient incentives to do so, such as a reasonable commission on profit (Rochet and Tirole 2003). The platform providers therefore need to create and enforce governance mechanisms by making deliberate choices about decision rights, ownership, and control with respect to the platform and by establishing regulating guidelines and rules in order to appropriately engage other platform stakeholders (Benlian et al. 2015; Ghazawneh and Henfridsson 2013). Platform governance is generally defined as “who makes what decisions about a platform”, where the main challenge for platform providers is to “retain sufficient control to ensure the integrity of the platform while relinquishing enough control to encourage innovation” (Tiwana et al. 2010, p. 679).

Though platform governance can be studied from three distinct perspectives (Tiwana et al. 2010), namely, decision rights, ownership, and control, we focus on the latter perspective in this study, as the decision rights and ownership mainly reside with the platform owner in the context of crowdfunding and remain unaffected by the policy change. Control refers to mechanisms used by controllers in the attempt to influence controlees so that they act and behave in accordance with the controller’s objectives and goals (Kirsch 1997; Ouchi 1979). In the context of crowdfunding, the platform owner serves as the controller, while the project creators can be referred to as the controlees.

In previous research, two main categories of control have been distinguished, namely, formal and informal control (e.g., Kirsch 1996). Within formal control, two distinct modes, output (also referred to as outcome) and process (also referred to as behavior) control, have been observed (e.g., Eisenhardt 1985; Ouchi 1979). While output control requires the controlee to reach a certain goal or objective given by the
controller in order to be rewarded, process control requires the controlee to adhere to specified procedures and routines during the process and doing so is rewarded. In contrast, informal control modes do not require specific incentives to align the goals of controller and controlee as shared norms and values exist (Kirsch et al. 2002). Within informal control, self and clan control have been distinguished (e.g., Kirsch 1996; Ouchi 1979). Self-control occurs when controlees define and monitor their own goals achievement and reward or punish themselves accordingly. Clan control is similar to self-control with the exception that a group of controlees, rather than an individual controlee, embrace the same values and commit to achieving group goals (Kirsch et al. 2002).

Though the concept of control originates from organizational theory, it has attracted considerable attention among IS scholars (e.g., Kirsch 1997; Kirsch et al. 2002; Tiwana and Keil 2009). Yet, it has only been applied in the context of platform ecosystems quite recently and with a strong focus on software-based ecosystems (e.g., Ghazawneh and Henfridsson 2013; Goldbach et al. 2014; Wareham et al. 2014). According to Tiwana (2015), the relevance of the mentioned formal and informal control mechanisms in this context is decreasing due to redundancy and costliness. For instance, process control is often obsolete in platform settings, as platform owners are ultimately interested in the finished complement and are not directly affected by costs complementors have to bear, because the relationship between the platform provider and complementors is not the classical principal-agent relationship (i.e., the complementor is not hired by the platform provider) (Tiwana et al. 2010). Furthermore, it has been argued that clan control requires a relatively stable ecosystem in terms of complementors and that formal and informal control mechanisms are “less viable in loosely coupled organizational structures” (Tiwana 2015, p. 4). Therefore, in loosely coupled ecosystems that exhibit high fluctuations in terms of the complementors, like mobile app and crowdfunding platforms do, the providers often focus their efforts with respect to control mechanisms on input control. Input control can be defined as the degree to which platform owners use predefined rules and policies to judge whether a compliment should be allowed into the platform (Cardinal et al. 2004; Tiwana et al. 2010). Although scant literature exists that considers input control in different forms and contexts (e.g., Boudreau 2010; Cardinal et al. 2004; Liu et al. 2014; Snell 1992), prior IS research has mainly focused on output, process, and clan control, overlooking the increasing relevance of input control (e.g., Choudhury and Sabherwal 2003; Kirsch et al. 2002).

Consequently, there are two gaps in the literature. First, the question of how the presence or absence of input control affects platform ecosystems in general and crowdfunding platforms in particular remains largely unexplored. Second, different configurations of control mechanisms in platform ecosystems have been mainly explored theoretically or in lab experiments and thus there is a lack of real-life cases and longitudinal studies in this context.

**Crowdfunding**

Crowdfunding, which builds on the broader concept of crowdsourcing (e.g., Bayus 2013; Huang et al. 2014; Poetz and Schreier 2012), allows individuals or organizations to reach a monetary (project) goal by receiving small financial contributions from a large number of individuals instead of choosing the traditional approach and receiving large contributions from a small number of investors. Crowdfunding enables project creators to collect contributions from a large number of project backers through an open call, mostly on the internet, without standard financial intermediaries (Mollick 2014; Schwienbacher and Larralde 2012). Over the last few years, a variety of different crowdfunding platforms have emerged and four distinct models of crowdfunding have been distinguished: donation-based, reward-based, lending-based, and equity-based (Kuppuswamy and Bayus 2014). These four models mainly differ with respect to the return backers can expect from their contribution to a campaign, which can either be financial, materialistic, idealistic, or philanthropic in nature (Ahlers et al. 2012). In donation-based crowdfunding markets, for instance, backers can expect no tangible return and thus pledge for a campaign due to altruism and warm glow (Andreoni 2006). In comparison, equity- and lending-based crowdfunding markets offer financial returns for the backers, though these returns might not always be the central reason to invest (Allison et al. 2013). Finally, in reward-based crowdfunding, backers can expect a non-financial tangible benefit for their investment. The rewards can range from small tokens of appreciation (e.g., a thank-you card) for an investment of a few dollars to an early access to the product developed for an investment of hundreds of dollars (Belleflamme et al. 2014). Previous research has found these rewards to be a central reason for backers to participate in reward-based crowdfunding (Kuppuswamy
and Bayus 2014). Consequently, reward-based crowdfunding does not attract investors in the classical sense, but rather consumption-oriented backers, interested in the project or in supporting the cause.

Though research has been undertaken with respect to all four types of crowdfunding, the dynamics of reward-based and lending-based crowdfunding have received the most attention among researchers so far. Most of this prior work has been focused on identifying informational cues (i.e., signals) considered by backers when making investment decisions on crowdfunding platforms. In this respect, researchers highlighted the importance of geography (e.g., Agrawal et al. 2011; Lin and Viswanathan 2014), the project creator’s social network (e.g., Agrawal et al. 2010; Lin et al. 2013), electronic word-of-mouth (e.g., Thies et al. 2014), and social information on the platform (e.g., Kuppuswamy and Bayus 2014). Though all these papers offer valuable contributions, no prior work has provided insights into the effects changes in control mechanisms can have on the dynamics within crowdfunding platforms nor have the goals of the platform providers and the effects of their decision-making been considered. This study therefore is an initial step towards understanding these dynamics and the effects of a policy change in this context under conditions of a natural experiment.

**Research Context**

Our study focuses on Kickstarter, which is one of the leading reward-based crowdfunding platforms today. The platform empowers project creators to launch their campaigns and acquire funding, customers, and supporters from all over the world. Since its launch in 2009, 8.4 million people have pledged almost $1.7 billion, funding over 80,000 projects (Kickstarter 2015d). Prominent examples of projects that published their campaigns on Kickstarter include one of the first smartwatches called Pebble, which sold its one millionth watch in December 2014, a music player by Neil Young, a full length movie by Zach Braff, and the Oculus Rift, a virtual reality head-mounted display, which was acquired by Facebook in 2014 for approximately $2 billion, less than two years after their Kickstarter campaign.

**Economics of Reward-based Crowdfunding**

**Goals of the Platform Provider, Project Creators, and Backers**

A goal of every platform owner is to create and exploit as many monetization opportunities as possible (Claussen et al. 2013). As crowdfunding platform owners mainly generate revenue through transaction-based fees\(^1\), managing the demand and the supply side is at the core of platform management. Since higher numbers of high-quality campaigns are attractive to backers, allowing more campaigns onto the platform seems beneficial for Kickstarter. In turn, a high number of campaigns might, however, represent an entry barrier for additional complementors (Hagiu 2011). Furthermore, as Kickstarter follows the all-or-nothing (AON) funding model, where only campaigns that reach their funding goal receive funds and thus generate revenue for Kickstarter, campaign quality and funding success are crucial. Thus, simply allowing more campaigns onto the platform might not yield any increase in revenue for the platform.

The goals of project creators, on the other hand, are more diverse. Most obviously, project creators try to gather as much funding as possible or as much as they require. Furthermore, a successful campaign does not only enable the creators to finance their venture or project, but it also validates that there is a market for their idea. Hence, the campaigns themselves can also have a certain marketing effect for the respective project, as press attention potentially follows crowdfunding campaigns (Burtch et al. 2013; Mollick 2014; Shane and Cable 2002). Similar to early stage investors that, besides financial support, typically offer advice, governance, and prestige (Gorman and Sahlman 1989; Zimmerman and Zeitz 2002), crowdfunding communities also provide additional services to the creators, including mentorship to newcomers and feedback on the campaign presentation (Hui et al. 2014).

Though the rewards have been found to be a central reason for backers to participate in reward-based crowdfunding (Kuppuswamy and Bayus 2014), just like the rewards, the actual goals of backers can be extremely heterogeneous (Mollick 2014). Nevertheless, all campaign backers may be thought of as individuals making an investment decision based on their expectation for success and the appeal of the

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\(^1\) When we refer to revenue, this only includes the transaction-based fees the crowdfunding platform charges.
respective campaign (Agrawal et al. 2011). Previous research has shown that backers respond to signals of quality across all crowdfunding models and regardless of their expectations for tangible or financial returns (Burtch et al. 2015; Mollick 2014).

Drivers of Campaign Success

Since investments in crowdfunding campaigns are highly uncertain, potential backers often need to make their investment decisions based on limited and potentially biased information provided by the project creator. Therefore, drivers of success for crowdfunding campaigns, such as quality signals, have been of great interest to scholars so far (e.g., Ahlers et al. 2012; Mollick 2014). The assumption is that these signals reveal the underlying quality of a project, ensuring that projects with a higher quality receive more funding compared to those with a lower quality (Mollick 2014). According to signaling theory, quality signals can only be credible if a project creator offering a low quality has higher costs acquiring them compared to a project creator offering a high quality (Connelly et al. 2011; Kirmani and Rao 2000; Spence 1973). Hence, prior to the policy change, being allowed to publish a campaign on Kickstarter could be considered a quality signal in itself, as passing the input control was a greater challenge for low quality projects. As higher information asymmetry increases the relevance of quality signals, the omission of this inherent quality signal should increase the importance of the remaining signals. Thus, our goal is to assess the reaction of the crowd to the omission of the input control and to determine how the policy change affected the relative impact of the remaining quality signals on the backers’ decisions to fund a campaign.

Mollick (2014) gave an early assessment of the role of quality in crowdfunding and identified several signals that influence campaign success. As crowdfunding offers a wide range of quality signals, we will present them in two stages. We first consider the level of preparedness of the creator as a signal of quality (Chen et al. 2009). Hence, we examine three signals that are determined before the campaign is launched on the platform. First, did the creator produce a video for his campaign? Uploading a video is strongly recommended by Kickstarter, claiming that campaigns that do not contain a video have a much lower success rate compared to those that do (Kickstarter 2015a). Second, we evaluate the preparedness by looking at the description length (DL) of the campaign, the underlying intuition being that a longer and more detailed description can reduce the information asymmetry better than a shorter description. Third, given that not only length, but also the quality of the description serves as a signal, we checked for spelling errors (SE) as the lack of proofreading implies reduced preparedness and general lower quality (Mollick 2014). To identify spelling errors, we matched the project description against the list of the 4,260 most commonly misspelled words in Wikipedia articles² (Wikimedia Foundation 2015).

Next, we turn to quality signals relevant during the funding period. Again, we use three quality signals that are based on prior research. First, another recommendation from the platform provider is to add “updates that build momentum” (Kickstarter 2015a). Furthermore, updates indicate a prepared creator (Mollick 2014) and also serve as a communication tool. Updates are often used to clarify certain aspects of the project and respond to frequent inquiries from the community. We therefore include the update frequency (UF) as a measure of quality. Second, the success of social media led to a strong presence of what is referred to as social information in electronic markets, which has become an important signal for consumers to use for decision support. Qualitative (e.g., electronic word-of-mouth) as well as quantitative (e.g., download rankings) social information has been shown to affect consumer decision-making during online purchases (e.g., Chevalier and Mayzlin 2006; Duan et al. 2008), helping them to overcome the information asymmetry for products whose value is difficult to ascertain before purchase (Akerlof 1970). In this regard, Thies et al. (2014) examined effects of social buzz on the likelihood of success of crowdfunding campaigns. Their findings show that social buzz (especially Facebook shares) positively influences campaign backing in the future. We therefore included Tweets on Twitter (TTW) and Facebook Shares (FBS) as quality signals.

As our final measure of quality, we employ a quality signal that cannot be altered by the project creators directly. Following Mollick (2014), we determined whether the project’s campaign was a so-called Staff Pick (SP), meaning that the campaign was featured on Kickstarter’s homepage and was added to a separate list of campaigns recommended by the platform. This special promotion offered by the platform

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² Words that could yield false positives (i.e., words that are correct in other contexts) were removed from the list.
itself is reserved for campaigns that are selected by Kickstarter staff because they are particularly compelling with respect to the video, description, rewards, or the project idea (Kickstarter 2015a).

**Policy Change on Kickstarter**

Project creators who are interested in publishing a campaign on Kickstarter have to go through a process of creating an account with the platform and then setting up their campaign by filling out an online form several pages long. To start a campaign, the project creator is then required to upload a photo, add a title and a description, outline the comprised rewards, and is encouraged to provide a campaign video and additional information. Once this process has been completed, the quality of the finished campaign is evaluated by Kickstarter staff based on a set of rules and policies defined by the platform. This formal input control applied by Kickstarter is rather unique in the context of reward-based crowdfunding, but regularly applied in software-based platform ecosystem such as Apple’s App Store. Despite this control mechanism project creators had to subject themselves to, Kickstarter has become one of the leading crowdfunding platforms over the last few years. Still, creators of lucrative projects regularly decided to publish their campaign on a different platform such as Indiegogo after being rejected by Kickstarter due to the strict rules and policies (Jeffries 2014; Kelion 2014).

In June 2014, Kickstarter altered its strategy with respect to the control mechanisms by implementing a policy change regarding their approval process for campaigns that entailed two major changes (Kickstarter 2014). First, the control mechanisms the project creators had to subject themselves to prior to the change were replaced with an algorithm verifying that the campaign fulfills the basic requirements (e.g., has a description). Second, the previously elaborate list of rules and policies was reduced to only three rules, requiring campaigns to be shareable, honest, and within the confines of reward-based crowdfunding (Kickstarter 2014). Kickstarter announced this policy change with the following statement:

“We want creators to have the support and freedom they need when building their projects. That’s why we’re introducing a feature called Launch Now. It gives creators a simple choice: go ahead and launch your project whenever you’re ready, or get feedback from one of our Community Managers first.” (Kickstarter 2014)

What motivated Kickstarter to implement such a major policy change and move from a curated to a more open platform despite its popularity and success? Though excluding low-quality campaigns from the platform is an error-prone and expensive process, moving from authority-based platform governance with rules and policies to a more trust-based governance that is based on the assumption that the controlee has a strong intrinsic motivation to reach the desired goal (i.e., a high-quality campaign) can, in fact, unbalance the ecosystem (de Reuver and Bouwman 2012). While it is likely that, after the policy change, an increasing number of campaigns will be published on the platform due to the removed control mechanisms, letting *a thousand flowers bloom* might have negative effects for the ecosystem. The uncontrolled variance in the quality of campaigns can lead to a situation where, ultimately, the platform provider has to bear the negative costs of the poor quality provided by the complementors (Wolter and Veloso 2008). For example, during the *Atari shock* in the 1980s, Atari’s platform was flooded with low-quality video games due to its inability to control quality, which ultimately led to bankruptcy (Coughlan 2004). At the same time, platform ecosystems must employ mechanisms to leverage autonomy to complementors in order to generate a sufficient number of high-quality and innovative complements that foster user adoption and let the market determine winners and losers (Wareham et al. 2014).

As Kickstarter’s policy change was not announced beforehand, giving backers as well as creators no time to adapt their strategies prior to the change, it can be assumed endogenous for the platform owner but exogenous for project creators and backers. This setting therefore offers a unique opportunity to examine how intentionally relinquishing control over a platform affects the dynamic relationship among the different stakeholders, which we examine in the remainder of this paper. To identify the dynamics caused by the policy change, we use descriptive as well as econometric evidence.
Data and Methodology

We collected a unique, daily time series dataset that covers the period from December 4th 2013 to December 3rd 2014, and contains a total of 67,384 Kickstarter campaigns that started within this timeframe. The policy change (PC) was enacted from 3rd of June onward, giving us 6 months of data before and after the policy change. We chose this time span to adequately control for seasonality and time trend effects. For each campaign, our dataset includes the start date and performance indicators such as the number of backers and the amount of funding the campaign received. Furthermore, we recorded indicators for the campaign’s quality such as whether it contains a video, the length of the project description, social buzz, and update frequency.

Our data is suitable for our purposes for several reasons. First, this natural experiment-like change of control mechanisms allows for similar identification as for field experiments (Claussen et al. 2013; Goldfarb and Tucker 2011; Tucker and Zhang 2011). Second, we have data on campaigns before and after the policy change, which lets us isolate its effect. Third, as we have data on every campaign that ran on the platform in the specific period, we are able to avoid selection or survivor biases. Finally, Kickstarter is one of the most prominent crowdfunding platforms, making the results relevant for the entire industry.

Our applied research method is twofold. We first consider descriptive and illustrative evidence for the effects of the policy change on Kickstarter with regard to key metrics of the ecosystem. We then continue with a negative binominal regression (NB) to test how the rule change moderated the relative importance of the drivers of campaign success, measured by the total number of campaign backers. Variable definitions, abbreviations, summary statistics—before and after the policy change—and pairwise correlations for all numerical variables are given in Table 1 and 2. To check for robustness of our model results and to rule out alternative explanation for the observed effects of the policy change, we conducted a number of robustness checks that are described in detail in the respective section below.

Descriptive Evidence

We first look at the development of the ecosystem before and after the policy change based on the descriptive statistics. Given that the policy change is exogenous for project creators and backers, we can use this quasi-experimental setting to draw inferences from changes in numbers once the policy change (PC) is enacted. Since Kickstarter offers creators the opportunity to choose from eight different currencies, we converted all monetary values to USD based on the respective average exchange rate of 2014. Drawing from the numbers of Table 1, we observe a general decline of performance as well as quality indicators on the campaign level, while on the platform level a general increase of the key indicators is prevalent.

First, the average number of backers a campaign receives decreases by almost 40%. This decline is also mirrored in a decreased average funding of campaigns, formerly at almost $10,000, now plummeting to a mere $6,644. On the other hand, these declining numbers could be a result of the decline in quality, evident by the campaign’s quality indicators and drivers of success. For instance, after the policy change, only 61% of all campaigns contained a video, down from 80%. Also, update frequency, description length and Facebook shares underwent a sharp decrease. The exceptions here are Twitter tweets and the percentage of campaigns that contained spelling errors. While tweets rose on average after the policy change, spelling errors declined, which is supposedly due to the shorter descriptions and the consequently lower susceptibility to spelling mistakes. The decreased percentage of campaigns that reach their funding goal further supports the argument for the declining average quality and the quick reaction of the crowd to the policy change.

Next, we take a closer look at the key indicators on a platform level. As mentioned before, the goal of the platform owner is to create monetization opportunities. While we observe a general decline in quality and funding on a campaign level, platform indicators suggest that the policy change indeed increased platform revenue, as the increased number of campaigns compensated for the lower average revenue per campaign. Still, the variance of the weekly platform revenue sharply increased, pointing towards less predictable revenue streams for the platform.
Table 1. Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Total</th>
<th>Before PC</th>
<th>After PC</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backers</td>
<td>Number of campaign backers</td>
<td>94 (678)</td>
<td>123 (884)</td>
<td>78 (524)</td>
<td>-37%</td>
</tr>
<tr>
<td>Pledged Amount</td>
<td>Amount the campaign accumulated in USD</td>
<td>$7,844 (77,486)</td>
<td>$9,942 (78,393)</td>
<td>$6,644 (76,938)</td>
<td>-33%</td>
</tr>
<tr>
<td>Pledge Goal</td>
<td>Target amount of the campaign in USD</td>
<td>$47,260 (1,197,845)</td>
<td>$33,174 (719,147)</td>
<td>$55,313 (1,399,756)</td>
<td>+67%</td>
</tr>
<tr>
<td>Duration</td>
<td>Funding duration in days</td>
<td>32.7 (11.1)</td>
<td>32.4 (10.7)</td>
<td>32.9 (11.3)</td>
<td>+2%</td>
</tr>
<tr>
<td>Staff Pick (SP)</td>
<td>Dummy is 1 if the campaign is a Staff Pick; 0 otherwise</td>
<td>.11 (.32)</td>
<td>.12 (.32)</td>
<td>.11 (.32)</td>
<td>-8%</td>
</tr>
<tr>
<td>Video</td>
<td>Dummy is 1 if the campaign contains a video; 0 otherwise</td>
<td>.68 (.5)</td>
<td>.80 (.4)</td>
<td>.61 (.5)</td>
<td>-24%</td>
</tr>
<tr>
<td>Description Length (DL)</td>
<td>Length of the campaign description in characters</td>
<td>3,512 (3,748)</td>
<td>3,998 (3,807)</td>
<td>3,234 (3,685)</td>
<td>-19%</td>
</tr>
<tr>
<td>Spelling Errors (SE)</td>
<td>Dummy is 1 if the description contains error(s); 0 otherwise</td>
<td>.07 (.25)</td>
<td>.07 (.25)</td>
<td>.06 (.24)</td>
<td>-3%</td>
</tr>
<tr>
<td>Update Frequency (UF)</td>
<td>Number of daily updates the creator posts</td>
<td>.14 (.28)</td>
<td>.18 (.34)</td>
<td>.11 (.23)</td>
<td>-39%</td>
</tr>
<tr>
<td>Facebook Shares (FBS)</td>
<td>Number of Facebook shares the campaign received</td>
<td>325.29 (4,463)</td>
<td>374.30 (6,033)</td>
<td>297.28 (3,242)</td>
<td>-21%</td>
</tr>
<tr>
<td>Twitter Tweets (TTW)</td>
<td>Number of tweets on Twitter the campaign received</td>
<td>81.7 (646.9)</td>
<td>76.5 (667.6)</td>
<td>84.7 (634)</td>
<td>+11%</td>
</tr>
<tr>
<td>Success Rate</td>
<td>Percentage of campaigns that reach their pledge goal</td>
<td>.33 (.47)</td>
<td>.42 (.49)</td>
<td>.29 (.45)</td>
<td>-31%</td>
</tr>
<tr>
<td>Account Age</td>
<td>Days between account creation and start of campaign</td>
<td>262 (379)</td>
<td>278 (367)</td>
<td>252 (385)</td>
<td>-9%</td>
</tr>
<tr>
<td>Platform Revenue per Camp</td>
<td>5% commission for successful campaigns</td>
<td>$342 (3,865)</td>
<td>$437 (3,906)</td>
<td>$288 (3,779)</td>
<td>-34%</td>
</tr>
<tr>
<td>Weekly Platform Revenue</td>
<td>Average weekly revenue</td>
<td>$480.524 (190,879)</td>
<td>$444.663 (156,406)</td>
<td>$501,026 (205,242)</td>
<td>+13%</td>
</tr>
<tr>
<td>Total Platform Revenue</td>
<td>Cumulative revenue during observational period</td>
<td>$2.31e+07 $1.07e+07 $1.24e+07</td>
<td>+16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N per Day</td>
<td>New campaigns per day</td>
<td>242.7 (9.5)</td>
<td>163.0 (53.2)</td>
<td>288.4 (127.7)</td>
<td>+77%</td>
</tr>
<tr>
<td>Observations</td>
<td>Number of campaigns</td>
<td>67,384</td>
<td>24,511</td>
<td>42,873</td>
<td>+75%</td>
</tr>
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</table>

To further illustrate this development, Figure 1 shows the average number of new campaigns on Kickstarter during our observational period. The underlying data for Figures 1 and 2 was averaged on a weekly level as well as the 6-month period before and after the policy change to create a clearer representation. We observe that prior to the policy change, the number of new campaigns was significantly lower and underwent a sharp increase shortly after the enactment. Figure 1 also plots the average revenue the platform generates with a single campaign during our observational period. Here, we notice the sharp decline after the policy change. Two distinctive effects of the policy change are shown in Figure 1. First, the removal of the entry barrier enabled more project creators to publish their campaign on the platform, increasing the variety of choice for potential backers. On the other hand, as the number of campaigns rose, the average funding per campaign declined. This indicates that the increased absolute number of campaigns was not necessarily accompanied by an increased absolute number of backers.
Figure 1. Effects of the Policy Change on Count and Revenue of Campaigns

Figure 2 combines the two graphs from Figure 1 and plots the total weekly revenue as well as the average of the average before and after the policy change against the start date of the respective campaigns. We identify a small increase in weekly platform revenue. However, the increased revenue is accompanied by an increased variance of it, making it less predictable, and suggesting a development towards a more blockbuster-based ecosystem (Rosen 1981). This is also reflected by the platform revenue of $664,261 that was generated with campaign of the *The Coolest Cooler* that started shortly after the policy change.

Figure 2. Effects of the Policy Change on Platform Revenue

Overall, we see a decline in average campaign quality (i.e., fewer updates, fewer videos, shorter descriptions), as well as higher and allegedly more unrealistic funding goals and a decreased success rate. Still, the numbers also suggest higher total revenues for the platform provider when looking at the absolute numbers, which denotes that the higher number of campaigns compensated the lower success rate and average funding amount per campaign. A possible explanation for the decline in quality could be
the time creators invest on the platform before starting their campaign. Creators that familiarize themselves with the platform longer can be expected to contribute a more appealing campaign. We therefore looked at the account age of creators and witness a strong decline in the average number of days an account exist before the campaign is launched. Furthermore, after the policy change, almost 25% of all creator accounts have been in existence for a week or less before their campaign launched, up from 13%. It could be argued that these inexperienced and hasty project creators are a major driver of the decline in campaign quality. To further deepen our understanding of the implications of the policy change, especially for project creators and backers, we will now turn to our econometric analysis.

**Econometric Evidence**

Our econometric analysis focuses on the effects of the policy change for the drivers of success for crowdfunding campaigns. To do this, we employ a negative binominal regression (NB) to test how the rule change affected the drivers of campaign success and their signaling effects on prospective backers’ pledge behavior by using the number of backers as our dependent variable. We chose the number of backers as our main proxy for success as we are more interested in the actual backer’s decision of whether to fund the project or not, instead of in the absolute investment amount, especially as the individual funding amount is strongly driven by the material rewards offered by the project creator. Still, correlation between backers and funding amount is relatively high, which makes it possible to infer the overall success of a campaign from the number of backers.

We use a robust negative binominal regression instead of a Poisson regression as our dependent variable is a significantly overdispersed count variable (Cameron and Trivedi 2005; Long 1997) and the equidispersion restriction of the Poisson model is relaxed here (Greene 2008). Still, all results are robust to the Poisson specification. Our model is then formalized as follows:

\[ E[y_i | x_i, \epsilon_i] = \exp(\alpha + x_i \beta + \epsilon_i) \]

where \( y_i \) denotes the number of backers, \( x_i \) represents project specific independent variables and control variables, while \( \epsilon_i \) acts as the error term.

We included several controls in our model to account for alternative explanations. All numerical variables and their correlations are given in Table 2. First, we used a category dummy for all 15 project categories on Kickstarter, ranging from art to film, fashion, music, and technology. We further implemented a time dummy for each month to control for possible seasonality effects and the general growth trend of crowdfunding platforms. Additional controls are the campaign duration to account for the exposure length and the natural logarithm of its funding goal. Our baseline model (1) furthermore includes all aforementioned drivers of success, including the description length, update frequency, and social buzz.

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<td>-.09*</td>
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**Note:** t statistics are omitted for brevity. * p < .05.
measures. We then added the dummy variable PC in model 2 to indicate the policy change. The dummy turns from 0 to 1 if the campaign started after the input control was revoked. In order to model the moderating effect of the policy change on the relationship between project success drivers and campaign backing, we then subsequently include all potential drivers of project backers as main effects as well as in interaction terms with the rule change in models (3) to (7). The interaction term then lets us discern if each quality indicator became a more important driver of success after the policy change. Respectively, if the signaling power of the alterable signal was enhanced after the inherent quality signal was attenuated.

<table>
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</table>

**Note:** t statistics are omitted for brevity. A constant is calculated but not reported. *p < .05, **p < .01, ***p < .001.

Based on the results of model (2) in Table 3, we can confirm the conclusion drawn from our descriptive evidence that the policy change caused a decline in the number of backers. The policy change decreases the number of backers by a factor of .59, with all other variables held constant. We calculated this incidence rate ratio from exponentiating the policy change variable’s coefficient (Long 1997). Incidence rate ratios for other variables were calculated in the same way. In the subsequent models, we see that quality indicators generally became more important after the policy change, indicated by the positive and significant coefficients of the interaction terms in models (3) to (7). The positive effect of being a Staff Pick from the platform or having a video increased by a factor of 30%, while the importance of the description length only increased by about 10%. The exception here is spelling errors, which did not increase in signaling strength. Still, it is the only negative signaling in our analysis. The biggest gain in explanatory power compared to the baseline model, indicated by the lower BIC, was achieved in models (7) through (9), which incorporated the interaction terms with update frequency, Facebook shares, and Twitter tweets.
highlighting the increased importance of social buzz and community interaction after the policy change. Here, the signaling effect of Twitter tweets as well as Facebook shares became, again with all other variables held constant, approximately 10% stronger.

In summary, we have gathered strong evidence that the rule change indeed incentivized creators to publish lower quality campaigns on the platform as the input control mechanism was removed. On the other hand, the increased number of campaigns compensated for the lower quality with regard to platform revenue by sheer volume. Additionally, we found strong empirical evidence that the removal of an important quality signal encourages users to put more emphasis on the remaining quality indicators.

**Robustness Checks**

To check for the robustness of our models, we conducted six sets of robustness checks. All tests resulted in similar significance levels and identical directions of all relevant coefficients. First, we ran an OLS regression with the natural logarithm of the monetary project funding as the dependent variable. Second, we implemented a dummy variable that turned to one if the campaign reached or exceeded its funding goal. We then ran a probit regression with this dummy as the dependent variable to further validate our results. Third, we also ran a Poisson regression with the original specification, again resulting in the same directions and significance of all relevant coefficients. Fourth, we excluded all campaigns whose funding period coincided with the policy change. Fifth, as Kickstarter removed a number of rules on the same date the policy change was enacted and therefore allowed certain projects onto the platform after the policy change that were previously prohibited, we excluded all campaigns that would not have been possible prior to the policy change based on the subcategories they were listed in for a further robustness check. Furthermore, in the weeks following the policy change, Kickstarter added two new campaign categories to the website, namely, *Crafts* and *Journalism*. For a further robustness check, we also removed all campaigns from our analysis that were listed in these two categories. Finally, we shrank the observed time period around the policy change by moving to a time window first from 12 to 6 months and then down to 3 months. Specifications show that our results persist over these shorter time frames as well. In order to control for rival explanations, we included control variables in our main regression as well as in all other robustness checks, including campaign categories, general time trends, campaign durations, and funding goals. All of our results can therefore be considered to be robust with regard to alternative explanations and campaign success measurements.

**Discussion**

Our analysis of the policy change on Kickstarter with respect to the abolishment of input control yielded several interesting results. Corresponding to our first research question, we find that the policy change had a profound impact on each of the platform’s stakeholders and the dynamic relationships among them. According to the announcement published by Kickstarter to explain and justify the policy change, one of the main goals was to allow “more diverse ideas to thrive on Kickstarter” (Kickstarter 2014). While our results show that this goal was achieved with an increase of 77% in the number of new campaigns per day after the policy change, it is accompanied by a decrease in average campaign quality. We see that, as a reaction to the policy change, almost all quality signals that can be influenced directly (e.g., campaign video) or indirectly (e.g., Facebook shares) by the project creator see a strong decrease. It thus seems that the screening process was not automatically substituted by any informal control mechanism such as clan or self-control that would have encouraged project creators to define and monitor their own goals or embrace group values and therefore commit themselves to higher quality campaigns. This is not surprising, as posting a campaign on the platform is not a long-term commitment for project creators and Kickstarter therefore does not provide a stable ecosystem in terms of complementors, which is required to deploy clan control (Ouchi 1979). Kickstarter recently started trying to prolong the relevance of the platform for project creators with a new feature called *Spotlight*, which turns every successful campaign into a showcase and web shop for the respective project (Kickstarter 2015c). This might be a first attempt to establish a shared vision for the platform among the different stakeholders. Currently, however, Kickstarter leaves the complementors broad latitude to decide what and how they want to contribute to the platform, which makes it difficult to ensure coordination (i.e., who contributes what campaigns) and task completion (i.e., publishing high-quality campaigns), since leaving the platform is as easy as joining (Gulati et al. 2012, p. 576). Our results confirm this, as we see that after the policy change, the project
creators publish their own campaign more quickly after creating their account with the platform, meaning that they invest less time to familiarize themselves with the platform and possible success factors.

For our second research question, we examined how the drivers of campaign success were affected by the policy change. We find that after the policy change, all of the inspected quality signals—with the exception of spelling errors—became more important for the potential backers’ evaluation of campaigns. This effect was to be expected, as being able to publish a campaign on Kickstarter is not a valid quality signal in itself anymore. Considering this and the decrease in campaign quality, it is not surprising that we see a lower average success rate after the policy change and a widening gap between the project creators’ expectations (pledge goal) and the amount their campaigns eventually accumulate (pledged amount). Though this means that, on average, individual campaigns generate less revenue for the platform provider, also making the platform less lucrative for complementors, the data shows that this drop is compensated for by the increase in the number of campaigns.

While the true intentions behind the policy change remain hidden, exploiting as many monetization opportunities as possible is at the core of platform management (Claussen et al. 2013). Even though this goal was therefore achieved with the policy change, we see that, due to Kickstarter’s all-or-nothing funding model, the apparent increase in platform revenue is more dependent on fewer blockbuster campaigns, evident by the rise in market concentration towards a smaller percentage of campaigns that gather most of the funding. Though relinquishing control over the platform should help turn Kickstarter into a long tail market, where niche complements contribute substantially to the platform’s revenue due to their sheer volume (Anderson 2006; Elberse 2008), the platform provider inhibits this development through the all-or-nothing funding model, which is not compulsory on the platform of Kickstarter’s strongest competitor Indiegogo.

**Theoretical Contributions**

Our study makes three important contributions to the IS control literature and to the emerging research on platform ecosystems. First, previous IS control studies have focused almost exclusively on output, process, and clan control, but inadvertently neglected input control (e.g., Choudhury and Sabherwal 2003; Kirsch et al. 2002). Ours is one of the first studies to conceptualize and examine input control as a formal control mechanism and to show how its abolishment affects critical performance indicators on platforms, such as financial performance and project diversity as well as end-user and complementor participation. As a result, we were not only able to analyze the impact of the input control change on an aggregate platform level, but also on a more granular level for different platform stakeholders. Our study thus complements previous IS control studies and demonstrates that input control (or the lack thereof) can have tremendous financial and behavioral effects on platforms. Second, we add to the growing stream of research on the implications of policy changes on platform ecosystems (e.g., Burtch et al. 2015; Claussen et al. 2013) by showing how adjusting a critical platform governance mechanism can affect an entire platform ecosystem and what dynamics unfold on the part of the different stakeholders. To the best of our knowledge, our study is also the first in a crowdfunding ecosystem to examine the effects of a sophisticated control change under conditions of a natural experiment. We believe, however, that our insights are not strictly limited to this context, as input control mechanisms are a ubiquitous phenomenon in platform ecosystems overall. Finally, and more broadly, our study also shows that policy changes can have significant effects on platform signaling, by demonstrating that changes in platform governance mechanisms can significantly shift the relative importance of signals for platform users and have considerable consequences for the overall dynamics among platform stakeholders. As such, our findings highlight that quality signals (i.e., users’ decision cues) on platforms are fragile and vulnerable to (internal and external) shocks rather than static and stable over time.

**Practical Implications**

Beyond the theoretical contributions of this paper, we also see a variety of practical implications that should be considered by the providers of crowdfunding platforms and project creators.
Providers of Platform Ecosystems

For the providers of platform ecosystems, it is important to realize that changes in governance mechanisms can have a substantial influence on decision-making processes of users and complementors. It is therefore crucial for the platform providers to develop a deep understanding of the complementors’ (project creators’) goals, strategies, and capabilities that might be affected by any policy changes and of any potential areas of conflict that might arise (Yoffie and Kwak 2006). For example, after the policy change, Kickstarter attracted a number of campaigns likely to be hoax that may be seen as a form of rebellion against the new relaxed policies (Lecher 2014).

Prior research has found that it is a managerial challenge to exercise enough control over a platform to ensure integrity while relinquishing enough control to encourage innovation (e.g., Boudreau 2010; Boudreau 2012; Tiwana 2015; Tiwana et al. 2010). In this respect, platform providers can either enact hard input control mechanisms based on rules and policies or incentivize complementors through soft stimuli. Though Kickstarter became successful before the policy change despite the screening process and managed to provide a high average campaign quality due to this mechanism, such mechanisms can also “be counterproductive in a nascent market in which consumer preferences are not (yet) settled” as innovative complements might fail to comply with any established criteria (Claussen et al. 2013, p. 199). Though the platform’s rising revenue seems to confirm that the decision to abolish input control was the appropriate approach for Kickstarter, the decreasing average campaign quality suggests that the policy change has the potential to backfire in the long run. The platform provider should employ other, soft mechanisms to encourage project creators to contribute higher quality campaigns in the future. Facebook, for instance, managed to increase the average quality of third party apps offered on the platform by rewarding highly engaging apps with further opportunities to engage users (Claussen et al. 2013). Though Kickstarter offers a similar mechanism with the so-called Staff Picks, there is no clear and democratic path to becoming featured by Kickstarter that would ensure equal access for every project creator and motivate them to invest in higher quality campaigns (cf., Kickstarter 2015b).

Project Creators

For project creators, the easier access to the platform seems attractive, but goes along with stronger competition due to the increased number of rival campaigns. Though crowdfunding campaigns on Kickstarter are most often unique and therefore do not compete for backers directly, each campaign has to compete with all other campaigns running at the same time for the attention of the prospective backers browsing Kickstarter. This is particularly true within the distinct categories (e.g., technology or design) that are used on the platform to sort and rank campaigns. Furthermore, being able to publish a campaign on Kickstarter could previously be regarded an important and inherent quality signal, which no longer exists after the policy change. This further increases the competition for project creators with campaigns on other platforms. Consequently, the policy change increases the focus on the quality of individual campaigns and on the ability of the project creators to raise the awareness for their campaigns (e.g., through marketing), as the market solely determines winners and losers after the policy change and the increased number of campaigns makes it more difficult for the project creators to stand out of the crowd.

Backers

After the policy change, prospective backers have more choice, which possibly attracts individuals who previously did not participate in crowdfunding. On the other hand, this goes along with increased search costs and information asymmetry (Bakos 1997), as being able to publish a campaign on the platform is not a valid quality signal in itself anymore and backers therefore have to consider other quality signals in order to evaluate whether to pledge for a specific campaign. Our results confirm this, as we were able to show that due to the policy change, backers shifted their attention to other prevalent quality signals such as social buzz.

Limitations, Future Research, and Conclusion

While our study provides important insights and contributions to both research and practice in the context of platform ecosystems and control mechanisms, it is exploratory in several respects and we acknowledge certain limitations that need to be considered when interpreting the results and
implications. First, our data is aggregated on a campaign level, meaning that we can only observe the aggregate behavior of backers and not the choices made by individuals. Furthermore, our data did not allow us to compare the characteristics of backers (e.g., demographics) before and after the policy change. Future studies could therefore focus on the backers’ perspective to determine how the abolishment of input control mechanisms and the subsequent increase in variation and decrease in quality of a platform’s complements influences decision-making on an individual level. Second, though we study one of the most prominent crowdfunding platforms, we only observe a specific time frame in its evolution within a still young and very dynamic market. Therefore, one should be cautious when extrapolating our findings to other, more mature platform ecosystems. Third, even though we deliberately chose to observe a rather long period before and after the policy change to avoid focusing on short-term dynamics, it remains unclear how long the measured effects persisted after the abolishment of the input control mechanisms. Finally, input control mechanisms are just one of multiple ways platform providers can relinquish or exercise control over complementors. Nevertheless, we believe that our study offers unique insights into the various effects and dynamics a platform owner can provoke when altering control mechanisms.

In conclusion, our overarching finding is that Kickstarter’s policy change regarding the abolishment of input control was a double-edged sword for the platform’s ecosystem. On the one hand, it increased the number and variety of campaigns, which is in line with the platform provider’s expectation and might attract a higher number of backers in the future, therefore increasing platform revenue and prominence. On the other hand, the benefit of the increased number of campaigns is diminished, as Kickstarter’s all-or-nothing funding model mitigates the marginal utility of additional campaigns. Furthermore, Kickstarter might lose its distinct status as a high-quality crowdfunding platform due to the decreasing average quality and success rates. Prospective project creators might therefore turn to rival platforms with more attractive funding conditions in the future.

This study contributes to the emerging literature on governance strategies for platform ecosystems and the role of input control in this context. We hope that our results provide impetus for further analysis of governance strategies for loosely coupled platform ecosystems and give actionable recommendations to platform providers and project creators in the crowdfunding context.

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References

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