

Economic Consequences of Risk and Ability Disclosures: Evidence From Crowdfunding*

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Abstract

Crowdfunding platforms offer a novel form of financing for early-stage ventures, yet are largely unregulated and characterized by severe information asymmetries, agency frictions, and novice entrepreneurs. Exploiting the introduction of a “risks and challenges” (RC) section on the crowdfunding website Kickstarter.com, we examine the role of disclosure in crowdfunding markets and document that riskier projects receive fewer pledges and are less likely to be funded after the addition of the RC section. Project creators who comply with the request to discuss risks and abilities also provide higher-quality non-risk related disclosures and design a financing structure that accommodates greater risk. Finally, projects with riskier outcomes and a lengthy discussion of risks and abilities receive more funding, consistent with improved disclosure quality mitigating the reduced funding for these projects in the post-RC period. Our findings suggest that this new section increased awareness of information and agency frictions, causing crowdfunders to change the types of projects they back and project creators to improve their disclosures and financing structure.

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1 Introduction

We examine the role of disclosure within crowdfunding markets. Until recently, funding for early-stage ventures was primarily restricted to personal savings, loans from friends, family, or banks, and investments from venture capitalists and/or angel investors. Crowdfunding platforms allow entrepreneurs to reach a broader set of funding providers via the internet, thus becoming an important source of financing for early-stage ventures (Massolution 2015; Kim and Hann 2017). However, the risky nature of these ventures, typically launched by inexperienced entrepreneurs, combined with the impersonal nature of funding, lack of monitoring mechanisms, and general absence of regulation, suggest that any mechanisms that mitigate information asymmetries and agency frictions can be of first order importance to the effective functioning of these markets.

In this paper we examine one such mechanism, namely asking entrepreneurs to discuss risks and abilities. Beginning September 20, 2012, the rewards-based crowdfunding website Kickstarter.com unexpectedly required all new projects to have a “Risks and Challenges” (RC) section. Project creators (i.e., entrepreneurs) are now asked to discuss “the risks and challenges [their] project faces, and what qualifies [the creator] to overcome them.”¹ The addition of this section thus increased the salience of risks and abilities, even though the content of the section is unaudited. We examine whether the introduction of the RC section helped mitigate information and agency frictions present in this crowdfunding market.

Our first hypothesis is that after the mandatory inclusion of a RC section, funding outcomes change for riskier projects. We assume there are two types of projects: projects with riskier outcomes, which are less likely to fulfill all commitments made to their backers, and projects with less risky outcomes. Kickstarter introduced the RC section ostensibly to decrease information asymmetries between backers and creators and increase backers’ awareness of potential agency frictions. However the unenforced and difficult-to-verify nature of

¹ <https://www.kickstarter.com/blog/kickstarter-is-not-a-store>.

this disclosure suggests that any discussion of actual risks and abilities should be largely uninformative, and thus the ex-ante effect of adding this section ambiguous. If backers were inattentive to or discounted any observably risky characteristics, the simple inclusion of a section dedicated to highlighting risks—regardless of the section’s content—could increase backers’ perceived uncertainty and reduce their willingness to fund projects, particularly for projects with riskier attributes (i.e., projects whose observably risky attributes would have been previously overlooked). The addition of the RC section could also *increase* funding, particularly for riskier projects, if project creators’ discussion of risks and their abilities to address those risks reduce backers’ perceived uncertainty. Funding outcomes for risky projects could thus on average decrease or increase after the addition of the RC section (salience hypothesis).

Our second hypothesis is that project creators’ behavior change when they are asked to discuss risks and abilities. We assume that there are two types of project creators: those who would provide a lengthy discussion of risks and abilities if asked, and those who would provide minimal discussion of risks or abilities if asked. Importantly, we do not assume that a creator’s discussion of risks and abilities is necessarily indicative of the project’s actual riskiness. If discussing risks increases the likelihood that creators better understand and appreciate both crowdfunding risks and the presence of information and agency frictions, then we predict that these creators will increase their non-risk related disclosure quality to reduce information asymmetries and alleviate backers’ potential concerns, regardless of the actual riskiness of their project (disclosure hypothesis). Creators who do not provide lengthy discussions of their risks and abilities when asked are less likely to gain increased understanding of crowdfunding risks, and are unlikely to change their disclosure quality after the introduction of the RC section. In addition to improving the quality of their disclosures, we also hypothesize that creators who discuss risks and abilities also choose a financing structure that accommodates greater risk and uncertainty due to the increased likelihood that they are aware of and recognize crowdfunding risks (financing structure hypothesis).

Our final hypothesis examines how the *direct* effect of increasing the salience of risks interacts with any *indirect* effects resulting from changes in creators' behavior. If the improvements in non-risk related disclosures and financing structure made by creators who discuss risks and abilities mitigate information asymmetries and agency frictions, particularly for riskier projects, then the RC section may indirectly improve funding outcomes for these projects. We thus hypothesize creators with risky projects who discuss risks and abilities realize improved funding outcomes, relative to creators with similarly risky projects but minimal discussion of risks and abilities. This hypothesis combines our first three hypotheses, and suggests that any negative (positive) funding effects associated with making risks and abilities salient for risky projects are mitigated (increased) by creators discuss risks and abilities (interactive hypothesis).

To test these hypotheses we exploit the above-mentioned addition of the RC section on Kickstarter.com. Kickstarter is an online platform where project creators post web pages describing potential creative ventures (i.e., projects), the amount of funds they need to complete these projects (funding goal), and the non-financial "rewards" (e.g., the eventual finished project) they are offering in exchange for pledges from individuals in the "crowd" (backers). Project creators receive funds (funded) only if total pledges meet or exceed the project's funding goal. The addition of the RC section represented a significant change to Kickstarter's disclosure guidelines, as the self-regulated platform historically had minimal disclosure requirements.² To our knowledge, there were no other contemporaneous changes.

There are several compelling reasons why the addition of the RC section would *not* change the behavior of backers and/or project creators. Potential backers could already identify projects with riskier characteristics, and creators already had incentives to consider risks. Furthermore, due to the lack of enforcement or verification of the content of the RC section, creators could put little effort into this disclosure. Finally, creators may not change

² For example, project creators on Kickstarter.com do not have to disclose project budgets, assets, liabilities, cash flow forecasts, or production costs.

their behavior due to concerns about disclosing proprietary information. Thus, whether the addition of the RC section changed backers' and/or creators' behavior is ultimately an empirical question.

To investigate our hypotheses, we create a detailed data set of project characteristics for the 20,960 projects launched on Kickstarter during the twelve-month window centered on September 20, 2012. Several of our hypotheses examine how creators' and/or backers' behaviors change for riskier projects relative to less-risky projects. To test these hypotheses, we create a risky outcome index (*Index*) based on observable characteristics intended to capture the likelihood that creators will fulfill the promises made to their backers and that backers will be satisfied with the finished product. Importantly, *Index* does not use potentially untruthful or misleading information from the RC section, and thus can be computed independent of creators' discussion of risks. We validate that *Index* is significantly positively associated with delayed delivery of promised rewards, the frequency of negative comments for funded projects, the frequency of refund requests by backers, and, for a random subsample of projects, human-readers' independent assessment of risk, increasing confidence that *Index* captures observable differences in projects' inherent riskiness.

In support of the salience hypothesis, we find that riskier projects attract 15% fewer backers, receive 20% fewer pledges, and are 38% less likely to be funded after the addition of the RC section relative to the changes in the funding of less-risky projects (i.e., difference-in-difference estimate). These results are statistically and economically significant, and striking given that backers could already observe that these projects have riskier outcomes and that any discussion of risks or abilities should be uninformative given its unenforced nature. These results suggest that backers perceive greater uncertainty and risk (when risks are likely present) after the addition of a section that highlights risks.

We next examine how creators' behavior change after being asked to discuss risks and abilities. We find that the number of risk and ability words increased by 642% and 54%, respectively, after the introduction of the RC section, suggesting that disclosure (and poten-

tially creators' awareness) of both risks and abilities increased in the post-RC period. Based on this finding, we use the length of the RC section as a summary measure of creators' discussion of risks and abilities to test the disclosure and financing structure hypotheses. We implement a difference-in-differences research design, contrasting creators' disclosure and financing structure choices before and after the addition of the RC section. An empirical challenge is identifying projects in the pre-RC period that would have had a lengthy discussion of risks and abilities (if asked). We address this challenge by using entropy balancing to construct synthetic samples of projects in the pre-RC period that are weighted to have identical creator and project characteristics as projects with lengthy/short RC sections in the post-RC period. These synthetic samples allow us to examine how the behavior of creators change after the introduction of the RC section, holding constant project and creator characteristics associated with lengthy discussions of risks and abilities.

Our evidence supports both the disclosure and financing structure hypotheses. After the addition of the RC section, creators with long RC sections provide higher-quality disclosures (e.g., 16% increase in the number of pictures and 12% increase in specificity) and are more likely to design a financing structure that accommodates greater risk (e.g., 6% increase in estimated delivery times and 47% increase in use of discounts).^{3,4} Importantly, we include a time trend, category and geographic fixed effects, as well as controls for observable project quality, uniqueness, complexity, and entrepreneurial experience to address fundamental differences across project types. These aspects of our research design, combined with the exogenous addition of the RC section, suggest that when asked to disclose risks, creators who write a long RC section become aware of and take actions to mitigate infor-

³ The increased use of discounts manifests in a strictly higher cost of capital for project creators and is consistent with arguments in Kothari, Li, and Short (2009) that the content or tone, rather than the level, of disclosure affects the relationship between disclosure and the cost of capital.

⁴ An alternative explanation is that the RC section discouraged creators who would have had a short RC section from launching projects. We believe this confound is unlikely because the risk disclosure is unenforced. Nonetheless, our matching technique helps mitigate this concern.

mation asymmetries and agency frictions by improving their disclosure quality and changing the project’s financing structure.

In our final analysis we examine the interactive hypothesis and find that funding outcomes are significantly higher in the post-RC period (e.g., 49% increase in pledges and 28% increase in number of backers) for projects with riskier outcomes and long RC sections relative the funding of similarly risky projects with short RC sections. Thus although the direct effect of the RC section is to decrease funding for riskier projects (salience hypothesis), the *indirect* effect of discussing risks and abilities is to increase funding, suggesting that the actions taken by creators who discuss risks and abilities successfully mitigate some of the information asymmetry and agency frictions. The results are consistent with creators with a long RC section having an increased awareness of information asymmetries and agency frictions, and this increased awareness leading them to change their behavior and successfully mitigate some of these frictions. For riskier projects, these changes result in improved funding outcomes.

Our paper contributes to research on the market consequences of risk disclosures (Beaver, Kettler, and Scholes 1970; Linsmeier, Thornton, and Welker 2002; Kravet and Muslu 2013; Campbell, Chen, Dhaliwal, Lu, and Steele 2014; Cheng, Hodder, and Watkins 2017). Our evidence suggests that Kickstarter backers and creators change their financing decisions and disclosure quality as a result of voluntary, unenforced risk and ability disclosures. These results are consistent with “real effects” of accounting-related disclosures (Kanodia and Sapiro 2016; Zhang 2009; Shroff 2017).

Our paper also contributes to behavioral research on attention constraints in accounting and finance (Hirshleifer, Lim, and Teoh 2009; DellaVigna and Pollet 2009; Drake, Roulstone, and Thornock 2012; Madsen 2017; Dehaan, Madsen, and Piotroski 2017; Bushee, Core, Guay, and Hamm 2010; Twedt 2016; Blankespoor, deHaan, and Zhu 2017). We provide evidence that increasing the salience of an already observable characteristic causes individuals to give greater weight to that characteristic and alter their financing choices.

We also contribute to research on crowdfunding (see discussion of related research in section 2.1). Crowdfunding is increasingly becoming a viable means for raising capital by both individuals and firms, with ongoing debates about whether and how to regulate these nascent markets. Understanding how disclosures affect entrepreneurs' and crowdfunders' behaviors can inform these debates, as well as provide insights more broadly into the potential economic consequences of risk disclosures within traditional financial markets. Although the institutional features of crowdfunding (e.g., limited enforcement, verification, and regulation combined with significant information and agency frictions) are useful for identifying the causal effects of disclosure on individual behavior (i.e., internal validity), nontraditional settings often include shortcomings such as concerns of generalizability (i.e., external validity). However, we believe the importance of understanding real effects of disclosures, especially voluntary and unenforced disclosures, merits examining nontraditional markets, including "crowd-funding of firms outside traditional capital markets" (Leuz and Wysocki 2016, p.600).

2 Background and Theoretical Predictions

2.1 Crowdfunding

Crowdfunding markets provide a means for entrepreneurs to obtain capital. There are currently four types of crowdfunding platforms,⁵ and the crowdfunding industry is growing at an exponential rate (Massolution 2015). We analyze one of the world's largest, unregulated, reward-based crowdfunding platforms, Kickstarter.com. On Kickstarter, entrepreneurs seek capital to complete a specific "creative" project and disclose their plans and funding needs via a web page which contains a main body (comprised of video, images, and text), funding status, reward tiers, and after September 20, 2012 a risks and challenges section (see Fig-

⁵ The four types are equity, lending, donation, and reward-based platforms (see overviews by Mollick (2014) and Burtch, Ghose, and Wattal (2013a)).

ure 1). In exchange for monetary pledges, these entrepreneurs make unenforceable promises to deliver “rewards” (e.g., finished product) in the future. If the amount of total pledges received during the funding period meets or exceeds the funding goal, then the project is funded. Otherwise, all pledges are returned to the backers (i.e., all or nothing funding). Although there are predetermined sections on these web pages, there is no minimum length or content requirements and project creators have complete flexibility in what they disclose as well as how they structure their crowdfunding campaign.

Prior research examines various aspects of crowdfunding, including timing of crowdfunder pledges (Kuppuswamy and Bayus 2014; Burtch, Ghose, and Wattal 2013b), reciprocity of entrepreneurs in backing other entrepreneurs’ projects (Zvilichovsky, Inbar, and Barzilay 2013), privacy preferences (Burtch, Ghose, and Wattal 2015), fulfillment of promised project rewards (Mollick 2014), role of gender (Mollick 2013), herding behavior around reputable crowdfunders (Kim and Viswanathan 2013), creators’ signaling incentives in equity crowdfunding markets (Ahlers, Cumming, Günther, and Schweizer 2015), and incentives for entrepreneurs to use crowdfunding, including limited access to capital and credit (Kim and Hann 2017). To our knowledge we are the first to examine the economic consequences of risk and ability disclosures within crowdfunding markets.

Backing early-stage projects on Kickstarter is inherently risky. Project creators are generally inexperienced, have limited legal liability to follow through on their promises, and are not obligated to offer refunds (agency frictions). Moreover, it is often unclear whether completing the project is feasible (production risk).⁶ Project creators also face risks due to uncertain demand for their product (demand risk) and potential reputation costs if they

⁶ Kickstarter explicitly states, “[we do not] evaluate a project’s claims, resolve disputes, or offer refunds” (www.kickstarter.com/Trust). While over 388,000 projects have been launched on Kickstarter between 2009 and January 2018, only one case has been filed by the Federal Trade Commission (FTC) against a rewards-based crowdfunding campaign (see <https://www.ftc.gov/news-events/press-releases/2015/06/crowdfunding-project-creator-settles-ftc-charges-deception>).

publicly fail to successfully complete their project.⁷ Despite significant information asymmetry, agency frictions, and the lack of enforcement or verification, Kickstarter has helped over 137,000 projects successfully raise over \$3 billion as of January 2018.⁸ The inherently risky nature of crowdfunding projects provides a powerful setting to examine the effect of increasing the salience of risks and abilities on individuals' behavior.

2.2 Risk Disclosures and Real Effects

Risk disclosures play an increasingly significant role in the disclosure landscape of publicly traded firms. Dyer, Lang, and Stice-Lawrence (2017) document that the increased length of regulatory disclosures is in large part driven by disclosures of risk. Prior research investigates the market effects and contents of SEC mandated quantitative and qualitative risk disclosures for public companies.⁹ Closest to our paper, Kravet and Muslu (2013) document that risk disclosures are informative to market participants (i.e., associated with increased stock return volatility, trading volume, and analyst forecast revisions), and Campbell, Chen, Dhaliwal, Lu, and Steele (2014) demonstrate that risk disclosures reflect firms' underlying risks and that the information conveyed in these risk disclosures is reflected in systematic risk, idiosyncratic risk, information asymmetry, and firm value. These studies provide a useful foundation for understanding the determinants and market participants' use of risk disclosures. We contribute to this prior research by studying how market participants and entrepreneurs respond to the mandatory adoption of a RC section containing voluntary and unenforced disclosures within a crowdfunding setting.

⁷ For example, Seth Quest, creator of the funded but failed Hanfree iPad holder project, experienced difficulties finding employment in his career field of product design after his public failure on Kickstarter (www.inc.com/eric-markowitz/when-kickstarter-investors-want-their-moneyback.html).

⁸ <https://www.kickstarter.com/help/stats>.

⁹ Quantitative studies include Beaver, Kettler, and Scholes (1970), Schrand (1997), Roulstone (1999), Rajgopal (1999), Wong (2000), Hodder, Koonce, and McAnally (2001), Linsmeier, Thornton, and Welker (2002), Badia, Barth, Duro, and Ormazabal (2017), and Cheng, Hodder, and Watkins (2017). Qualitative studies include Kravet and Muslu (2013), Campbell, Chen, Dhaliwal, Lu, and Steele (2014) and Hope, Hu, and Lu (2016). Risk disclosures have also been broadly studied in other markets, including but not limited to health warnings on consumer goods (Borland 1997) and public terrorism alerts (Bonilla and Grimmer 2013).

We furthermore examine whether and how project creators (i.e., managers) adjust their non-risk disclosures and financing structure when risks are made more salient. Our study thus also builds on accounting research that documents changes in managerial and firm behavior in response to changes in accounting and disclosure rules (Kanodia and Sapra 2016; Amir 1993; Mittelstaedt, Nichols, and Regier 1995; Bens and Monahan 2008; Zhang 2009; Shroff 2017), as well as more closely related research on mechanisms used by entrepreneurs to signal project quality in equity crowdfunding markets (Ahlers, Cumming, Günther, and Schweizer 2015).

2.3 Theoretical Development

Disclosure is a standard mechanism used by firms to decrease information asymmetry and uncertainty and improve the functioning of capital markets. In well-developed markets, institutional features such as regulators, auditors, disclosure standards, litigation, analysts, and media enhance the credibility of a wide variety of corporate disclosures (Healy and Palepu 2001; Leuz and Wysocki 2016). However, few of these supporting mechanisms exist in rewards-based crowdfunding markets. Although nontraditional, rewards-based crowdfunding platforms are nonetheless markets in which entrepreneurs can raise capital, albeit through pre-selling products and services rather than through issuing debt or equity securities. Given high levels of uncertainty regarding the fulfillment of these promises and lack of enforcement, disclosure theory suggests that entrepreneurs can potentially mitigate this uncertainty through disclosures. However, in the absence of traditional institutional features, it is unclear whether disclosures can effectively reduce information asymmetry and uncertainty within crowdfunding markets.¹⁰

¹⁰ Michels (2012) provides empirical evidence that unverifiable disclosures result in greater participation in peer-to-peer lending markets, consistent with reduced information asymmetry. Although the content of the RC section is also generally an unverifiable disclosure, the focus in this study is the effect of an exogenous increase in the salience of risks and abilities on both backers' and creators' behavior.

On September 20, 2012, Kickstarter added a “Risks and Challenges” (RC) section in response to concerns that the website was perceived as a marketplace for purchasing products and that at least some backers did not understand the risky nature of crowdfunded projects. Project creators are now asked to respond to the question “What are the risks and challenges this project faces, and what qualifies you to overcome them?” Although this section became a standard part of all project main pages, actual discussion of risks and abilities is voluntary (i.e., there is no enforcement, verification process, or minimum required length). To our knowledge there were no other contemporaneous changes to the Kickstater platform.

We first consider how the mandatory addition of a section dedicated to discussing risks and challenges affected backers’ funding decisions, independent of the content of the new section. We assume there are two types of projects: projects with riskier outcomes, where the project creator is less likely to deliver the promised rewards to all backers and/or backers are more likely to be dissatisfied with the quality of the reward; and projects with less-risky outcomes, where delivery of a final product and its associated quality is less uncertain. These two project types are (noisily) observable, thus allowing backers to assess outcome risk using project and creator attributes even prior to the addition of the RC section.

Given the voluntary and unenforced nature of the content within the RC section (i.e., cheap talk), it is unclear whether any discussion of risks or abilities within the section helps backers differentiate between riskier and less-risky projects. At the extreme, discussion of risks and abilities could be opportunistic or even misleading, as there are no explicit costs to providing untruthful disclosures.¹¹ Thus, the primary effect of adding a mandatory RC section is likely the emphasis, created by Kickstarter rather than the creator, on the potential presence of risks and challenges (increased salience).

Accordingly, we first hypothesize that the addition of the RC section affected backers’ funding choices for projects with riskier outcomes by highlighting the potential presence of

¹¹ Creators face potential implicit costs for untruthful disclosures, including reputation costs and potentially not being funded if discovered. However, it is unclear whether these costs provide sufficient incentives for truthful disclosure.

crowdfunding frictions. Stated differently, if observable project and creator characteristics already indicate that a project is likely risky, then adding a mandatory RC section likely changes backers' funding choices if backers were previously inattentive to those risky characteristics. Funding for these riskier projects could either decrease, if backers perceive greater uncertainty regarding the project outcome, or increase, if backers believe creators' discussion of their abilities to mitigate risk are credible. However, because backers could already noisily observe a project's type, these voluntary and unenforced disclosures could have no effect on backers' funding choices. Thus backers' willingness to fund projects with riskier outcomes could either be unaffected (the null hypothesis), decrease, or increase as a result of adding a RC section. Our salience hypothesis is stated in the alternative form as follows:

Salience hypothesis: *Funding outcomes change for projects with observably riskier outcomes after the addition of a mandatory RC section.*

Our second hypothesis focuses on the changes made by creators to their project as a result of considering and discussing risks and abilities. We assume that there are two types of creators: those who comply with the request to discuss risks and abilities when prompted and provide a lengthy discussion regarding their abilities and the extent to which risks are present (regardless of their project's outcome risk); and those who provide minimal discussion when prompted. Importantly, these two types of creators exist in both the pre-RC and post-RC periods. Thus we assume there are creators in the pre-RC period who *would have* discussed risks and abilities at length if they had been prompted.

Discussing risks and abilities likely increases project creators' awareness of crowdfunding risks, where crowdfunding risks include not only project-specific risks (e.g., likelihood of being able to deliver promised rewards), but also more general agency-based risks which may be of concern to backers (e.g., will the project creator continue to communicate with backers after receiving funding). Thus creators with long RC sections are more likely to appreciate the presence of such risks and as a result take actions to preemptively reduce these potential concerns. Importantly, we predict that these changes occur independent of projects' actual

riskiness, as not all crowdfunding risks are project specific. In contrast, creators with short RC sections are less likely to appreciate the presence of crowdfunding risks and thus less likely to take actions to address such risks.

We thus predict that creators with long RC sections improve the quality of disclosures in other sections of their main page by including more pictures, using more specific language, and providing a FAQ section, relative to creators in the pre-RC period who would have likely provided a lengthy discussion of risks and abilities if prompted. Pictures require preparation and can effectively communicate past progress, experience, access to resources, and provide verification of the project's status. Specific writing (i.e., referencing people, organizations, dates, times, and monetary amounts) is an indication that creators have made detailed plans to execute their project and/or address foreseeable risks. Providing a FAQ section suggests that creators have attempted to anticipate backers' lingering questions and made attempts to resolve these concerns. Together, these three disclosure attributes reflect project creators' preparation to address backers' perceived uncertainty. We also predict that creators with long RC sections (relative to creators who would have had a long RC section in the pre-RC period had they been asked) use more persuasive language on the main page, reflecting increased awareness that crowdfunding risks are now more salient to backers (even if their project is relatively less risky). Our disclosure hypothesis is formally stated as follows:

Disclosure hypothesis: *Creators with long RC sections include more pictures, use more concrete language, use more persuasive language, and are more likely provide a FAQ section.*

Our third hypothesis focuses on the changes creators with long RC sections make to their project's financing structure as a result of considering and discussing risks and abilities.¹² Project creators presumably select a financing structure which maximizes both the likelihood the project is funded and the amount of funds raised, under the constraint that they can (profitably) deliver the promised rewards. Discussing risks and abilities may cause

¹² We use the term "financing structure" to reflect the entrepreneur's choice of target goal, length of funding period, any discounts offered to early backers, and estimated date when rewards will be delivered in exchange for the pledged funds.

creators in the post-RC period to adjust their financing structure in at least two ways. First, discussing risks and abilities may cause creators to ask for more resources. If preparing a risk disclosure improves these creators' understanding of crowdfunding risks, including potentially costly setbacks, then they may take the precaution of increasing their funding goal and the estimated time to deliver the promised rewards to adequately accommodate such potentially costly setbacks.

Second, discussing risks and abilities may increase creators' awareness of the challenges involved with getting potential backers to fund crowdfunding projects, causing these creators to take actions to increase the likelihood the project is funded by attracting a larger crowd and generating funding momentum. We measure efforts to attract a larger crowd along two dimensions: length of the funding period and the existence of discounts. Longer funding periods allow more time for the crowd to evaluate, screen, and back the project, potentially reaching more backers willing to fund the project. To decrease the cost of backing the project, project creators can offer discounts to backers making pledges early in the funding period ("early bird discounts"). These discounts can increase participation by attracting backers who otherwise would have been priced out of the market and generate early funding momentum, at the cost of a higher cost of capital to the project creator.¹³ Our financing structure hypothesis is formally stated as follows:

Financing Structure hypothesis: *Creators with long RC sections ask for more money, estimate longer delivery times, use longer funding periods, and more likely offer discounts.*

There are several compelling reasons why creators with long RC sections may *not* alter their behavior (either disclosure quality or financing structure) in the post-RC period. Project creators were already required to determine the funding goal, length of the funding period, reward tier structure, and estimated delivery dates for their rewards. To make these choices, project creators have to consider production costs, estimated demand, manu-

¹³ Because creators are exchanging products for capital, providing any quantity of products to a subset of backers for a lower price results in a higher cost of capital for the project creator.

facturing times (for relevant projects), the risk of setbacks, and cost overruns, among other things. They furthermore have incentives to provide sufficient information to mitigate backers' uncertainty in order to maximize the likelihood of being funded. In addition, the lack of enforcement of any content suggests that discussion of risks and abilities should be uninformative. Finally, even if creators gain increased appreciation for the presence of information and agency-based frictions, proprietary costs could preclude them from significantly increasing disclosure quality.¹⁴ Thus, the introduction of a relatively simple change (i.e., discuss risks and qualifications) could feasibly have no impact on project creators' behavior.

Our fourth and final hypothesis focuses on how changes in the actions of creators with long RC sections affect the funding of riskier projects. The salience hypothesis argues that backers' funding choices change for riskier projects after the mandatory addition of the RC section, whereas the disclosure and financing structure hypotheses argue that creators who provide a long RC section also improve their disclosure quality and financing structure. For riskier projects, improvements in disclosure quality and financing structure may mitigate any decrease in funding after the addition of the RC section. Alternatively, if adding the RC section improves funding of riskier projects, then changes in disclosure quality and financing structure may result in even larger funding improvements. This hypothesis thus examines interactive effects associated with changes in backer and creator behavior, conditional on project and creator types. Our interactive hypothesis is formally stated as follows:

Interactive hypothesis: *After the addition of the RC section, funding improves for projects with riskier outcomes and a long RC section.*

¹⁴ Consider the following "proprietary cost" anecdote. Shane Chen posted his project "Hovertrax," an "Auto-balancing, electric transporter with gyro technology" on May 1, 2013, and raised \$85,744 from 162 funders. After seeing Mr. Chen's design, various hardware engineers in Shenzhen, China started producing modified versions of the Hovertrax and selling them for less than half the price paid by Hovertrax's funders. These modified versions were the "must-have" holiday item in 2015. Mr. Chen has not made any money on his invention, blaming imitators (www.npr.org/2015/12/03/458361229/the-hoverboard-mystery-where-did-the-holidays-hot-product-come-from, www.nytimes.com/2015/11/26/us/laws-struggle-to-keep-up-as-hoverboards-popularity-soars).

3 Data

Table 1 panel A details our sample selection criteria. Our initial sample is all projects launched on Kickstarter between March 20, 2012 through March 20, 2013 (six months before and after the addition of a risks and challenges section on September 20, 2012). After eliminating suspended/canceled projects, projects with missing text, projects with a goal less than \$5,000, funded projects with 10 or fewer backers, projects with a goal greater than \$1 million and 10 or fewer backers, and singletons (i.e., fixed effects with only one observation, Correia (2015)), we identify 20,889 projects for our analysis.

The primary disclosure made by project creators is the project’s main web page, which consists of text, images, and video. Figure 1 displays a stylized main page depicting the organization of these pages at the time of our data collection, and Figure 2 displays a portion of a sample main page. The purpose of this page is to inform the Kickstarter market of the product that creators will produce if funded, the project’s funding goal, the rewards offered for various pledge amounts, answers to frequently asked questions, and after September 20, 2012 the risks and challenges the project creator foresees. According to Kickstarter’s *Creator Handbook*, this project page should “inspire excitement for [the creator’s] idea, and also make potential crowdfunders confident in [the creator’s] ability to see it through.”¹⁵

From these web pages we calculate four measures of disclosure quality, four measures of financial structure, and four funding outcome measures. For the disclosure quality measures, we count the number of images on the main page (*Pictures*), the number of money terms, locations, people, organizations, and dates discussed by the creator on the body of the main page (*Specificity*), identify whether a FAQ section is included (*FAQ*), and count the number of persuasion words on the body of the main page (*Persuade*).¹⁶ For the financing

¹⁵ <https://www.kickstarter.com/help/handbook>.

¹⁶ Specificity is calculated using calculated using Stanford’s Named Entity Recognizer (NER) (<http://nlp.stanford.edu/software/CRF-NER.shtml>). See also Hope, Hu, and Lu (2016). We use five persuasion words that prior research in behavioral economics and neuroimaging finds have a meaningful impact on individual’s decisions and brain activation. Specifically, we use: “you” (Carmody and Lewis (2006)); “free” (Ariely (2010)); “because” (Cialdini (2006)); “instantly” (MacKillop, Amlung, Wier, David,

structure measures, we extract the log goal size ($\ln(Goal)$), the average number of days from the end of the funding period to the estimated delivery date of the project rewards ($\ln(Delivery)$), whether the funding period is less than or equal to 30 days (*30 Day*), and whether the project creator offers an “early bird discount” on any reward tier (*Discount*).¹⁷ We measure funding success along four dimensions: the log dollar of pledges ($\ln(Pledges)$), the log number of backers ($\ln(Backers)$), the log number of backers making pledges in excess of \$500 to capture willingness to contribute larger funds ($\ln(BigBackers)$),¹⁸ and whether the funding goal was met (*Funded*). To isolate the impact of disclosure on funding success, rather than a potential feedback signal from the crowd, we also measure for a subsample of 14,677 projects the number of pledges within the first three days after a project is launched ($\ln(Pledges3)$) using data from Kicktraq.com, which began producing comprehensive images of daily pledge amounts for projects launched after May 26, 2012.

Table 1 panel B summarizes project characteristics for the risk disclosure sample categorized into the following five groups: funding outcomes, components of the risky outcome index, control variables, characteristics of the RC section, and variables relating to disclosure quality and financing structure. All variables are defined in Appendix A. The average project in our sample has a goal of \$31,615 but receives only \$15,647 in total pledges from approximately 200 backers.

Ray, Bickel, and Sweet (2012)); and “new” (Wittmann, Bunzeck, Dolan, and Düzel (2007)). Word list compiled by Gregory Ciotti (<http://www.copyblogger.com/persuasive-copywriting-words>).

¹⁷ Project creators can select funding periods ranging from 1 to 60 days during our sample period, but most commonly choose 30 days (46% of our sample projects). Early bird discounts are reward tiers where a limited quantity of rewards can be initially acquired for a reduced price. After a discounted reward tier is filled, backers can typically receive the same reward for a higher pledge amount.

¹⁸ Results are qualitatively similar using a \$1,000 cutoff to define large contributions.

4 Empirical Analysis

4.1 Project Backers

In this subsection we provide tests of the salience hypothesis by examining how funding outcomes change after the introduction of the RC section. We first develop a measure of project outcome risk independent of any discussion of risk by project creators, and then conduct a difference-in-differences analysis of changes in funding outcomes after the mandatory addition of the RC section.

4.1.1 Risky Outcome Index

Two important crowdfunding risks, from a backer’s perspective, are the risk that the project will not receive enough funding (demand risk) and that funded projects will not be able to fulfill their promised rewards or that backers will be dissatisfied with the quality of the rewards (outcome risk). Several of our hypotheses focus on the effect of introducing a RC section while holding constant projects’ underlying riskiness. Because Kickstarter pledges are returned to backers if the total amount of pledges does not exceed the funding goal (all or nothing funding), demand risk is less important for backers in this setting. We thus focus on measuring differences in outcome risk using project and creator characteristics which were observable in both the pre-RC and post-RC periods to test whether adding the RC section changes funding outcomes after holding constant outcome risk.

Reading actual project descriptions provides several insights into outcome risks and more generally project quality. First, there is significant variation in the level of effort and detail creators put into planning their project. Second, some projects are inherently more ambitious and complicated. Third, creators have varying levels of experience and familiarity with crowdfunding. Fourth, cultural and language barriers can make reading and understanding some project descriptions challenging.

Drawing from these insights we create a risky outcome index (*Index*) designed to capture varying degrees of outcome risk.¹⁹ To define *Index* we compute the sum of nine indicator variables that likely capture elevated outcome risk:

- *Inexperienced*: a creator who has never previously launched a project on Kickstarter;
- *Low Ability*: a project with one or fewer ability-related words (i.e., 25th percentile);
- *Foreign Project*: a project located outside the US;
- *Prototype*: a project page that mentions the word “prototype”;
- *Tangible*: a project in the technology, design, or game categories, which typically result in the delivery of a physical product;
- *High Reward Tiers*: a project with more than 12 reward tiers (i.e., 75th percentile);
- *High Complexity*: a project with more than seven complexity words (i.e., 75th percentile);
- *Low Body Words*: a project with less than 300 words in the main body (i.e., 25th percentile);
- *Low Specificity*: and a project with less than five specific words/phrases (i.e., 25th percentile).²⁰

These indicators thus reflect creator characteristics (*Inexperienced*, *Low Ability*, *Foreign Project*), project complexity (*Prototype*, *Tangible*, *High Reward Tiers*, *High Complexity*), and usefulness of the information provided (*Low Body Words*, *Low Specificity*). Principal component analysis confirms that *Index* has three factors with eigenvalues greater than one.²¹

¹⁹ We measure outcome risk using various forms of *disclosures*. We acknowledge this is not ideal, as all crowdfunding disclosures are unenforced, difficult to verify, and likely self-serving. Due to these concerns, we do not use actual disclosures of *risk* to measure outcome risk, but rather more qualitative and quantitative measures of project and creator attributes.

²⁰ Appendix B contains lists of complexity and ability words extracted from manually reading several hundred project descriptions. Results are robust to using medians instead of 25th or 75th percentiles to create indicator variables from continuous variables.

²¹ Advantages of *Index* include that it can be computed for all projects using machine-readable data, large differences in the index likely reflect projects of differing outcome risks, and it is a parsimonious method for combining the three sources of risk we identified (i.e., creator characteristics, project complexity, and usefulness of information). Because our analysis focuses on differences in overall outcome risk, irrespective of the source of that risk, we use *Index* in our main analysis rather than one or more of the principal factors underlying *Index*.

To increase our confidence that *Index* captures the underlying construct of outcome risk, we provide several validation tests using post-funding data. For the 7,794 funded projects in our sample, we extract all backer comments made beginning one week after the funding period ends (to avoid capturing backers’ excitement associated with funding) and identify projects where backers mention the word “delay” or “refund” and projects with dissatisfied backers (i.e., comments with negative tone), all proxies for realized outcome risk. We regress a delay indicator (*Delay Dummy*), refund indicator (*Refund Dummy*), and the log number of comments with a negative tone ($\ln(\text{Neg Tone})$)²² on *Index* as well as several control variables and tabulate coefficient estimates in table 2. We find that *Index* is significantly positively correlated with the likelihood of discussion of delays and refunds and the number of negative comments a project receives post funding. The coefficient estimates further suggest an economically significant relationship, with a one-point increase in the index associated with a 10% increase in mentions of “delay,” a 11% increase in mentions of “refund,” and a 7% increase in the number of comments with negative tone. Together, these results increase confidence that *Index* captures variation in outcome risk.

amazon turk

4.1.2 Funding Outcomes: Tests of the Saliency Hypothesis

To test the saliency hypothesis we use a difference-in-differences research design, contrasting the change in funding outcomes for projects with riskier and less-risky outcomes before and after the addition of the RC section. To simplify interpretation of this and subsequent analyses, we construct the indicator variable *Risky Outcome High*, equal to one if a project has

²² We measure the tone of backers’ comments using IBM Watson’s Tone Analyzer Service (<https://www.ibm.com/watson/services/tone-analyzer/>). This tone analyzer was constructed to help companies monitor customer service and support conversations. Unlike dictionary-based approaches used to measure tone, this algorithm is specifically designed to detect emotions and tones in what people write in online comments and reviews. We classify comments as negative if the tone analyzer detects the presence of either the emotions “frustrated” (feeling annoyed and irritable) and/or “sad” (unpleasant passive emotion). Results are qualitatively similar using dictionary-based measures of tone.

an index score of three or greater, and zero otherwise.²³ Using this indicator, we implement the following difference-in-differences research design:

$$\begin{aligned}
Funding\ Outcome_i &= \alpha + \beta_1 Post-RC + \beta_2 Risky\ Outcome\ High \\
&+ \beta_3 Risky\ Outcome\ High \times Post-RC \\
&+ \Gamma Controls_i + \Delta Category\ FE + \Omega Region\ FE + \epsilon_i \quad (1)
\end{aligned}$$

where $Funding\ Outcome_i$ is a measure of the funding success (i.e., $\ln(Pledges)$, $\ln(Pledges3)$, $\ln(Backers)$, $\ln(BigBackers)$, and $Funded$), and $Post-RC$ is an indicator variable. We include as controls several variables that are likely associated with funding outcomes. To control for variation in project quality, we create the measure $Project\ Uniqueness$ as one minus the cosine similarity of words used in the project description relative to all words used by other projects in the same project category (see Xu (2017) and Appendix A), as well as an indicator if the project was chosen by Kickstarter staff to be featured on their website ($Featured\ Dummy$). To further control for differences in project complexity, we create indicator variables that capture five dimensions of project complexity ($Distribution\ Dummy$, $Geography\ Dummy$, $Labor\ Dummy$, $Production\ Dummy$, and $Legal\ Dummy$) using the word lists in Appendix B. Finally, we include a time trend and fixed effects for each of the 115 project sub-categories on Kickstarter, and fixed effects for each of the nine US census regions plus an international fixed effect.²⁴ Standard errors are clustered by sub-category, but results are qualitatively similar using robust standard errors.

Coefficient estimates for equation 1 are presented in table 3. Examining the interaction term, we find that funding outcomes for riskier projects significantly decrease after the addition of the RC section. The coefficient estimates are economically significant (20% decrease in pledges, 15% decrease in backers, 10% decrease in big backers, 16% decrease in

²³ All results are qualitatively similar if we drop projects with an index score of three or alternatively use the continuous *Index* measure.

²⁴ Results are robust to dropping all fixed effects and the time trend variable.

the likelihood project is funded), suggesting that for projects with riskier outcomes, backers perceive greater uncertainty as well as the potential for information asymmetries and agency frictions after the mandatory addition of the RC section. Examining the coefficients on the *Post-RC* indicator, we find no significant changes in funding outcomes for less-risky projects after the addition of the RC section, although the *Time Trend* variable indicates that on average funding outcomes have been improving over time. The significantly negative coefficient estimates on *Risky Outcome High* suggest that riskier projects on average received less funding than less-risky projects in the pre-RC period.

4.2 Project Creators

In this subsection we explore whether greater discussion of risks and abilities alters creators' behavior by increasing their awareness of crowdfunding risks (i.e., disclosure and financing structure hypotheses). We first provide univariate analysis of changes in the use of risk and ability words by project creators. We then use a matching technique to conduct a difference-in-differences analysis of changes in creators' behavior.

4.2.1 Univariate Analysis

We begin with univariate analysis of changes in creators' use of risk and ability words. Figure 3 panels A and B plot 30-day averages of the number of both risk and ability words before and after the addition of the RC section. We depict words according to their location on the project page (gray bars for the main section and black bars for the RC section). This figure highlights the dramatic increase in risk words, and to a lesser extent ability words, after the addition of the RC section.²⁵ Specifically, in panel A we find a strong and persistent increase in risk words, from approximately 0.6 risk words per project to 4.4 risk words per project. Furthermore, the increased use of risk words is located almost exclusively in the RC section.

²⁵ A limited number of projects that were "live" on September 20, 2012 retroactively added a RC section, explaining the presence of some RC section risk and ability words in the pre-RC period.

In panel B we find an increase in the use of ability words from approximately 4 ability words per project to 6 words per project, with the increased usage again located primarily in the RC section.

We provide statistical analysis of changes in the use of risk and ability words in table 4. Specifically, we regress the log number of risk words and log number of ability words on the Post-RC indicator, and include both category and region fixed effects. Because the dependent variable is log transformed, we can interpret the coefficient on *Post-RC* as the percentage change in the usage of risk or ability words. We find that, conditional on project category and location, usage of risk-related words substantially and significantly increased by 130%. Likewise, usage of ability-related words increased by 38%. In Panel B we tabulate the average number of risk and ability words in both the pre-RC and post-RC period for the 15 main project categories on Kickstarter. The usage of risk words statistically and economically increased for all 15 categories, and the use of ability words increased for all but one category (Crafts). Furthermore, the differences in the level of risk and ability words across categories in the post-RC period support the use of category fixed effects in our multivariate analysis.

For completeness, we also tabulate changes in the overall length of the main page in figure 3 panel C. The overall level of disclosure on the main page remained relatively constant, while the total length (body plus RC section) increased due to the addition of the new section. This evidence suggests that project creators expanded their disclosure rather than simply rearranging the content of their main page. The increased disclosure of risk and ability words is consistent with increased awareness of risks by project creators in the post-RC period, and suggests that other aspects of project creators' behavior and the crowdfunding process may have also changed as a result of creators discussing risks and abilities.

4.2.2 Multivariate Analysis

In this section, we test whether discussion of risks and abilities causes project creators to change the disclosure quality of other sections and their project’s financing structure. As outlined in section 2.3, we expect that creators who would provide a lengthy discussion of risks and abilities when asked are more likely to gain an increased appreciation for crowdfunding risks when they actually discuss risks. As such, we predict that creators with long RC sections improve the disclosure quality of other sections and change their financing structure, relative to creators in the pre-RC period who would have provided a long RC section but were not prompted to discuss risks and challenges. To reduce concerns that our results are driven by an overall time trend or correlated omitted variable occurring contemporaneously, we benchmark changes in the behavior of creators with long RC sections with changes in the behavior of creators with short RC sections. This research design allows us to attribute any change in the behavior of creators with long RC sections to increased awareness of risks due to the addition of the RC section.

Empirically, we separate creator types using the length of the RC section. Although discussion of risks and abilities in the RC section is unenforced, the majority of project creators include at least some discussion. As shown in table 1 panel B, the average number of total RC words for the 9,610 projects in the post-RC period is 164 (median 132). Furthermore, complete non-compliance is relatively rare, with just 47 projects (0.5%) leaving the section empty.²⁶ As shown in table 1 panel C, the length of the RC section is positively correlated with both the quantity of risk words and ability words in the post-RC period. To simplify the analysis and facilitate our matching approach described below, we create the indicator variable *RC Long*, defined as an RC section with a greater-than-median length (i.e., more than 132 words).²⁷ See Appendix C for examples of both short and long RC sections.

²⁶ Twelve of the 15 project categories contain projects with an empty RC section, with Film and Video having the highest number of such projects (13). Project categories with no non-compliers are Crafts, Journalism, and Dance.

²⁷ Results are robust using the 25th percentile of words in the RC section to define *RC Long*.

Our difference-in-differences research design requires us to identify projects in the pre-RC period that would have likely had either a short or long RC section. Given the absence of risk disclosures in the pre-RC period, we use a matching algorithm (entropy balancing) to identify these control samples. Entropy balancing identifies a weight for each observation in a control sample, such that the distributions of specific control variables for the treatment and weighted control samples are identical (Hainmueller 2012; McMullin and Schonberger 2016). This statistical technique allows us to create “synthetic” control samples of pre-RC projects that are distributionally equivalent on covariates that capture creator and project characteristics to post-RC projects by creators with long and short RC sections.

We use entropy balancing to construct two controls samples. We first identify a control sample for the 4,797 projects in the post-RC period with a short RC section by estimating weights for each pre-RC project such that the pre-RC projects and post-RC projects that have short RC sections exhibit near perfect covariate balance. We balance on both creator and project characteristics that are significantly associated with the length of the RC section (*Ln(Projects Backed)*, *Experienced*, *Foreign Project*, *Project Uniqueness*, *Featured Dummy*, *Distribution Dummy*, *Geography Dummy*, *Labor Dummy*, *Legal Dummy*, *Tangible*, and category fixed effects). We repeat this procedure for the sample of 4,841 post-RC projects with a long RC section to identify a weighted sample of pre-RC projects that exhibits near perfect covariate balance with post-RC projects that have long RC sections. We use these “synthetic” control samples in our difference-in-differences analysis.

We tabulate summary statistics for projects with short and long RC sections in table 5 panels A and B. In both panels, the weighted samples of projects from the pre-RC period (top portion of both panels) have nearly identical summary statistics (both means and standard deviations) relative to their post-RC counterparts. This near perfect covariate balance suggests that any differences we document in disclosure quality or financing structure between the weighted pre-RC and post-RC samples is not driven by differences in observable measures of creator characteristics or project uniqueness, quality, or complexity.

Using these entropy balanced samples, we implement a difference-in-differences research design to examine whether creators with a long RC section change their disclosure quality and financing structure after the prompt to discuss risks and abilities. Specifically, we estimate weighted-OLS regressions of the following form:²⁸

$$\begin{aligned}
 \text{Project Attribute}_i &= \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{R\&C Long-E}_i \\
 &+ \beta_3 \text{Post-RC} \times \text{R\&C Long-E}_i \\
 &+ \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i \quad (2)
 \end{aligned}$$

where R\&C Long-E_i is an indicator for projects from the post-RC period with a greater-than-median length of the RC section, as well as projects in the synthetic pre-RC sample weighted to have similar covariate balance. We analyze changes in four disclosure variables ($\text{Ln}(\text{Pictures})$, $\text{Ln}(\text{Specificity})$, FAQ , $\text{Ln}(\text{Persuade})$) and four financing structure variables ($\text{Ln}(\text{Goal})$, $\text{Ln}(\text{Delivery})$, 30 Day , Discount). Remaining variables are as previously defined. The coefficient β_2 captures any differences between projects estimated to likely have long or short RC sections in the pre-RC period, and the coefficient β_3 captures the different ways creators with long RC sections responded to the request to discuss risks and abilities. If creators with long RC sections improve the disclosure quality of other sections and their financing structure, then we predict that β_3 will be statistically significant.

Table 6 tabulates estimates of equation 2. The coefficient estimates on the interaction term are statistically significant in the predicted direction in all eight specifications, consistent with significant improvements in disclosure quality and changes in the financing structure by creators with long RC sections. The coefficient estimates on Post-RC suggest generally lower levels of disclosure (columns 1-4) and the use of shorter funding periods

²⁸ Entropy balancing assigns weights such that the sum of the control sample weights equals the number of treatment sample observations. Thus, the sum of the weights in the entropy-balanced low-risk (high-risk) sample is 4,797 (4,841). When estimating the weighted-OLS regression, the total weights assigned to observations in the pre-RC period is equal to the number of observations in the post-RC period (9,638).

and decreased use of discounts (columns 7-8) in the post-RC period, whereas the coefficient estimates on *R&C Long-E* are mixed and do not depict any consistent differences.

4.3 Interactive Hypothesis

In our final analysis we examine whether actions taken by creators with long RC sections and riskier projects mitigate the decreased funding associated with the introduction of the RC section. If changes in the behavior of creators who provide lengthy discussions of risks and abilities reduce crowdfunding frictions, then backers may be more willing to support riskier projects that make these modifications.

To test this hypothesis, we conduct two separate difference-in-differences analyses for each of the two time periods (pre-RC and post-RC). We then perform statistical tests of differences in the coefficient estimates using seemingly unrelated regressions. Specifically, we first estimate the following OLS regression separately for both the pre- and post-RC samples:

$$\begin{aligned}
 \text{Funding Outcome}_i &= \alpha + \beta_1 \text{R\&C Long}_i + \beta_2 \text{Risky Outcome High}_i \\
 &+ \beta_3 \text{R\&C Long}_i \times \text{Risky Outcome High}_i \\
 &+ \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i \quad (3)
 \end{aligned}$$

where *Funding Outcome_i* is one of the five funding outcomes examined previously in table 3, *Risky Outcome High_i* is the indicator for projects with an *Index* of three or higher, *R&C Long_i* is an indicator for projects with a greater-than-median length RC section, and we include (but do not tabulate for conciseness) the set of control variables from table 3.²⁹ We continue to include both sub-category and region fixed effects, and cluster standard errors by sub-categories.

²⁹ Results for analysis of the post-RC sample are qualitatively similar if we use the log length of the RC section instead of the *R&C Long* indicator.

Table 7 panel A presents coefficient estimates of equation 3 using the sample of projects from the post-RC period. Examining the interaction terms, we find significantly large increases in funding outcomes for riskier projects with long RC sections, relative to riskier projects with short RC sections: 49% more pledges, 33% more pledges in the first three days, 28% more backers, and 9% more big backers. These estimates are consistent with improved funding of riskier projects when project creators provide lengthy discussions of risks and abilities. Interestingly, these projects are no more/less likely to be funded. In our sample, the 13,096 unfunded projects on average receive pledges amounting to only 10% of their funding goal, and only 1% of these unfunded projects receive pledges totaling more than 68% (but less than 100%) of their funding goal. Thus projects which receive at least 68% funding are typically funded. While our results thus suggest that providing a lengthy discussion of risks and abilities, and any accompanying changes in disclosure quality, does not significantly affect the likelihood of being funded. However, this simple change in disclosure does result in more backers and more funding.

Four of the five outcome variables have significantly positive coefficient estimates for the variable $R\&C\ Long_i$, suggesting that creators with long RC sections and less-risky projects receive 16% more pledges and 10% more backers, but are again no more likely to be funded relative to less-risky projects by creators with short RC sections. Examining the coefficient on $Risky\ Outcome\ High_i$ reveals that riskier projects by creators with short RC sections receive substantially less funding than less-risky projects by creators with short RC sections, consistent with increased attention by crowdfunders to these riskier attributes and decreased willingness to fund such projects in the post-RC period.

To benchmark these effects, in panel B we use the weighted samples from table 6 to identify projects in the pre-RC period that would likely have had a lengthy RC section ($R\&C\ Long-E$). If the improved funding outcomes (i.e., backer support) of riskier projects with long RC sections resulted from actual discussion of risks and challenges, then we should not observe significant effects (or at least differences that are smaller in magnitude) in the

pre-RC period. Specifically, due to the absence in this period of a RC section that could alert crowdfunders to the potential for risks, we predict that riskier projects realize a smaller funding penalty, and that riskier projects by creators that would have discussed risks and abilities (if asked) realize a smaller funding benefit.

look close In panel B we find positive and statistically significant coefficient estimates for each of the main effects and interaction terms, yet their economic magnitudes are smaller than those in panel A (oftentimes half the size). Because we predict the coefficient estimates for both *Risky Outcome High_i* and the interaction term have smaller absolute magnitudes than their counterparts in panel A, we conduct one-sided chi-square tests using a SUR model. Examining the interaction term, we find that both pledges and backers are significantly higher in the post-RC period than the pre-RC period, suggesting that backers respond to the increased discussion of risks and abilities (and accompanying changes in disclosure quality) in the post-RC period with increased funding. Turning to the *Risky Outcome High* indicator, we also find that riskier projects on average receive substantially less funding, and are less likely to be funded, after the introduction of a RC section.

Together, these results suggest that the changes made by creators after the introduction of the RC section, including improvements in disclosure quality and financing structure, helped mitigate the decrease in funding for riskier projects in the post-RC period. As a result, riskier projects with discussion of risks and abilities receive more pledges by more backers, albeit without affecting the likelihood that the project is funded.

4.4 Robustness Tests

In this section we discuss a number of robustness tests, some of which we tabulate in the online appendix, that collectively increase our confidence in the main results.

As discussed in section 4.1, we conduct several analyses to increase confidence that *Index* captures variation in outcome risk. A related concern is that because *Index* is the unweighted sum of nine indicator variables, the main results in both table 3 and table 7 (which rely on

Index could be driven by or sensitive to a particular subset of these nine indicators. We thus iteratively remove each of the nine components, and re-estimate the five analyses in table 3 and five analyses in table 7. Of the resulting 90 coefficients on the interaction terms in these two tables (i.e., the primary coefficient of interest), 83 (92%) are qualitatively unchanged, with no one component responsible for a majority of the insignificant results. We conclude that our results are not particularly sensitive to the components of the *Index* variable.

Our tests of the disclosure and financing structure hypotheses (table 6) rely heavily on entropy balancing to identify projects in the pre-RC period that would have likely had a long RC section if prompted. To test the robustness of these results, we also use an alternative approach to identify these “responsive” project creators in the pre-RC period. Specifically, we define a “creator responsiveness ratio” to capture how responsive creators are to feedback from their backers using the following equation:

$$\text{Responsiveness Ratio} = \ln\left[\frac{\text{creator comments and updates} + 1}{\text{backer comments} + 1}\right] \quad (4)$$

using only comments and updates made during the funding period. Using the sample of post-RC projects, we find that this ratio is significantly increasing in the length of the RC section, suggesting that the ratio may serve as a rough estimate of project creators who would have discussed risks and abilities in the pre-RC period, if they had been asked. We thus define an alternate measure of $R\&C\ Long-E_i$ equal to $R\&C\ Long$ for projects in the post-RC sample and $Log\ Ratio\ High$ for projects from the pre-RC period. We re-estimate our results in table 6 using the full unweighted sample of pre- and post-RC projects, and find that five of the eight coefficients on the interaction term are qualitatively unchanged, two are insignificant ($30\ Day$ and $\ln(Specificity)$), and one is significant in the opposite direction ($FAQ\ Dummy$). We conclude that using an alternative research design produces similar results, albeit with the caveat that some of the specifications are less robust.

Another concern is that the behavior of backers and creators was already changing over this sample period and thus changes in behavior were not altered directly by the introduction of a RC section. To examine this alternative explanation, we conduct a falsification test where we shift our tests of the salience hypothesis in table 3 back exactly 6 months (i.e., September 20, 2011 through September 19, 2012). We thus analyze a sample of projects exclusively from the pre-RC period, and define a pseudo Post-RC indicator for projects launched after March 20, 2012. In contrast to the significant negative coefficients on the interaction term we document in table 3, these falsification tests produce significantly positive coefficients on the interaction term, suggesting a trend of *increased* funding of riskier projects leading up to the introduction of the RC section (although there is no statement by Kickstarter suggesting that the addition of the RC section was a response to any such trend). We conclude that there were significant changes, in the hypothesized directions, around the actual introduction of the RC section.

We also examine whether our results are sensitive to the use of 12 months of data. In robustness tests we use both 24 months of data as well as 6 months of data (both centered on September 20, 2012). For the main results in tables 3, 6, and 7, only one of the interaction terms becomes insignificant using the smaller sample of just six months, and only two results become insignificant using the larger sample of 24 months. We conclude that are results are not sensitive to this sample selection choice.

5 Conclusion

Crowdfunding markets are growing in size and importance, but are characterized by significant information asymmetries and agency costs, with limited abilities for capital providers to effectively evaluate the risks involved. We exploit the unexpected introduction of a disclosure dedicated to discussing risks and abilities within a crowdfunding market to examine how both crowdfunders and project creators respond to the introduction of the RC section. Funding on average decreases for riskier projects after the addition of the new section, and

creators that provide a long RC section also make significant changes to their disclosures and financing structure, suggesting that prompting disclosure of risks causes both backers and creators to change their behavior. Finally, the changes made by creators appear to mitigate the decrease in funding for riskier projects, suggesting that improved disclosure quality somewhat mitigates information and agency frictions in this market. Overall, our results are consistent with a greater realization of the risks involved by both project creators and backers. Our findings highlight that even simple changes in disclosure practices can have significant real effects on the functioning of crowdfunding markets.

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Appendix A: Variable Definitions

Project Variables	Description
Pledges	Total dollars pledged to the project.
Pledges3	Total dollars pledged during the first three days of the funding period.
Backers	Number of individuals pledging to support a project.
Big Backers	Number of individuals as making pledges of \$500 or more.
Funded	Indicator variable if the project was successfully funded (pledge \geq goal).
Post-RC	Indicator equal to one for the six month period starting September 20, 2012 when Kickstarter required discussion of risks and challenges, and zero for the six month period before September 20, 2012.
Risky Outcome Index	The sum of the following nine indicator variables: Inexperienced, Low Ability, Foreign Project, Prototype, Tangible, High Reward Tiers, High Complexity, Low Body Words, and Low Specificity.
Risky Outcome High	An indicator equal to one if Risky Outcome Index is greater than 3, 0 if Risky Outcome Index is less than 3, and set to missing if index equals 3.
R&C Long	Indicator if the RC section has a greater-than-median number of words.
R&C Long-E	Indicator if a project has a greater-than-median length of the risks and challenges section and is a post-risk disclosure project, or is a pre-risk disclosure project weighted using entropy balancing to match the covariate distribution of projects with long RC sections.
Risk Words	Count of risk-specific words on the project main page. Word list provided in Appendix B.
Ability Words	Count of ability and experience words on the project main page. Word list provided in Appendix B.
Low Ability	Indicator if the count of ability words is one or less (25th percentile).
Pictures	Number of images on the project's main page.
Specificity	Number of times monetary values, people, organizations, locations, or dates are mentioned in a project's main page. Defined using Stanford's Named Entity Recognizer (NER).
Low Specificity	Indicator equal to one if the project has five or fewer specific words/phrases (25th percentile).
FAQ	Indicator variable if the project's main page had a FAQ section.
Persuade	Number of times the words "you," "free," "because," "instantly," or "new" are mentioned on the project's main page.
Goal	Project's funding goal in dollars.
Delivery	Average number of days from the end of a project's funding period until the estimated delivery date across all reward tiers.
30 Day	Indicator variable if the funding period is less than or equal to 30 days.
Discount	Indicator if any reward tier offers an "early bird" discount.

Appendix A: Variable Definitions (Continued)

Project Variables	Description
Inexperienced Creator	Indicator variable if the project’s creator has never previously launched a Kickstarter project.
Foreign Project	Indicator if the project is located outside the US.
Tangible	Indicator if the project is in a design, game, or technology category.
Prototype	Indicator if the project main page contains the word “prototype”.
Reward Tiers	The number of rewards offered by the project creator.
High Reward Tiers	Indicator equal to one if the project has more than 12 reward tiers (75th percentile).
Body Words	Number of words listed on the project’s main page, excluding the risks and challenges section.
Low Body Words	Indicator equal to one if the project has 300 or fewer words in the main section (25th percentile).
High Complexity	Indicator equal to one if the project has more than 7 complexity words (75th percentile). Complexity words defined in Appendix B.
Projects Backed	The number of projects previously backed by a project creator.
Project Uniqueness	One minus the cosine similarity between the text in the project description and the corpus of text used by all projects in the same category.
Featured Dummy	Indicator variable if the project was featured on the Kickstarter website.
Distribution Dummy	Indicator if the project text includes a distribution-related word. Word list tabulated in Appendix B.
Geography Dummy	Indicator if the project text includes a geography-related word. Word list tabulated in Appendix B.
Labor Dummy	Indicator if the project text includes a labor-related word. Word list tabulated in Appendix B.
Production Dummy	Indicator if the project text includes a production-related word. Word list tabulated in Appendix B.
Legal Dummy	Indicator if the project text includes a legal-related word. Word list tabulated in Appendix B.
Category Fixed Effects	Indicators for each of the 115 subcategories on Kickstarter.
Region Fixed Effects	Indicators for each of the nine US census regions as well as an indicator for non-US based projects.

Appendix B: Customized Dictionaries

Panel A contains the list of risks and challenges words, panel B a list of ability and experience words, and panel C a list of complexity words across six different dimensions. These lists were developed from reading several hundred product descriptions.

Panel A: Risks and Challenges Words

accident	more orders
break	over budget
challenge	peril
creep	possibility
damage	postpone
danger	probability
dangerous	risk
delay	setbacks
detainment	slip
exposed	speculate
exposure	speculative
fail	substandard
goes wrong	threat
hazard	unable
infringe	uncertain
injury	uncertainty
jeopardize	unexpected
liability	unprecedented
malfunction	weather
manufacturing delays	

Panel B: Ability and Experience Words

aptitude	insurance	quality control
assure	insured	recommendation
background	know how	recommended
backup	know-how	record
bonded	knowledge	relationship
capabilities	license	relationships
capability	licensed	reliable
capacities	licenses	reputable
capacity	many years	reputation
certification	mastery	reputations
certifications	mentor	safeguard
close proximity	mentors	safeguards
contingencies	mitigate	safety net
contingency	mitigated	safety nets
credibility	monitor	secondary source
degree	network	secondary sources
degrees	networks	skill
educated	oversee	skilled
education	overseen	skills
ensure	permit	solve
ensured	permits	succeeded
established	precaution	talent
eventualities	precautions	talents
experience	prepared	track record
experienced	professional	track records
expertise	professionals	trusted
experts	proficiency	veteran
extra time	proven	veterans
history	qualified	worked together

Panel C: Complexity Words

Labor and Partnerships Words

crew
hire
hired
hires
hiring
coordination
partnership
third party

Production Words

assemble
bug
bugs
code
construction
design
development
equipment
fabricate
lead time
logistic
manufacturer
printing
production
sourcing
supply
tailoring
tooling
troubleshoot
vacuum forming
vendor
publish
quotes
recording
redesign
resources
scaling up
negotiation
testing
software
schedule
inventory management
inspection
sea freight

Geographic Words

China
cities
continents
countries
customs
export
import
language barriers
overseas
states
international
venue

Legal Words

legal counsel
license
patent
regulations
restrictions

Distribution Words

distribution
distributors
packaging
shipment
shipping
deliver
fulfillment
deadlines
time
timeframe
timeline
timing

General Complexity Words

business infrastructure
develop
market
marketing
platform
server load
technical
transferring
structural

Appendix C: Risks and Challenges Examples

Short Risks and Challenges Sections:

- No foreseen risks. The challenges will be getting the hundreds of videos and mp3's compiled, uploaded, and sorted into categories.
- We do not expect setbacks in fulfillment of products. The ordering, manufacturing, and shipping process has been successfully developed and “We know the hoops”!
- The main challenges we face are getting the designs of the retail packaging correct and production and shipping from the far east to the UK

Lengthy Risks and Challenges Section:

- The biggest risk of EasyMaker is sourcing. If you've looked at the peerbhairobotics.com website, you'll notice that EasyMaker costs a lot in the Bill of Materials spreadsheet. Just the parts cost is over \$1,200 if bought from a single supplier, like McMaster. But you're not buying a product – you're backing a project. The project takes some risks in order to bring EasyMaker to as many people as possible. With wide distribution and an open-source license, I hope to get enough people involved to complete the vision of the robot that makes almost anything. EasyMaker is designed to be flexible, reconfigurable, and adaptable. To achieve the project's goals, the biggest risk I've taken is supplier risk. This is because I've specially sourced items through small businesses and outsourced suppliers when possible. These smaller suppliers are cheaper, but their variance is unknown. The partially assembled robots have the lowest risks, in that I use known, large, tested suppliers for that robot. As the kits get cheaper, the riskiness of the suppliers increase. The bearings kit, for example, uses a Korean supplier through a Chinese intermediary. I've bought from them before, and they delivered well. But at small quantity, when I was physically in China. I don't know that the intermediary can get the quantity I want, or reliably ship it to me in the US. There's also a lot of suppliers, and I place my orders to suppliers after raising money through KickStarter. Any one of those suppliers may have a problem, and I may or may not be able to solve those problems. In some cases, the supplier is another Kickstarter Project. The number of suppliers also means a lot of boxes will arrive, which then have to be unpacked and accurately assembled into the appropriate kits. This is why I've put quantity restrictions on some rewards – to try and keep this workload reasonable. Another risk is that I've never sent out so many packages before. Until I've done it, I don't know what challenges await. EasyMaker uses a lot of screws of different sizes. Just quality-assuring the right number of screws in each package will be a daunting challenge, much less packing them so they don't get lost. I've tried to mitigate these risks through pricing and quantity restrictions. Either I've built in defect correction margins, or I've restricted the quantity to a level I feel is reasonable to correct should a problem arise. Hopefully, these will control the risk to a reasonable level.

Figure 1: Stylized Project Main Page

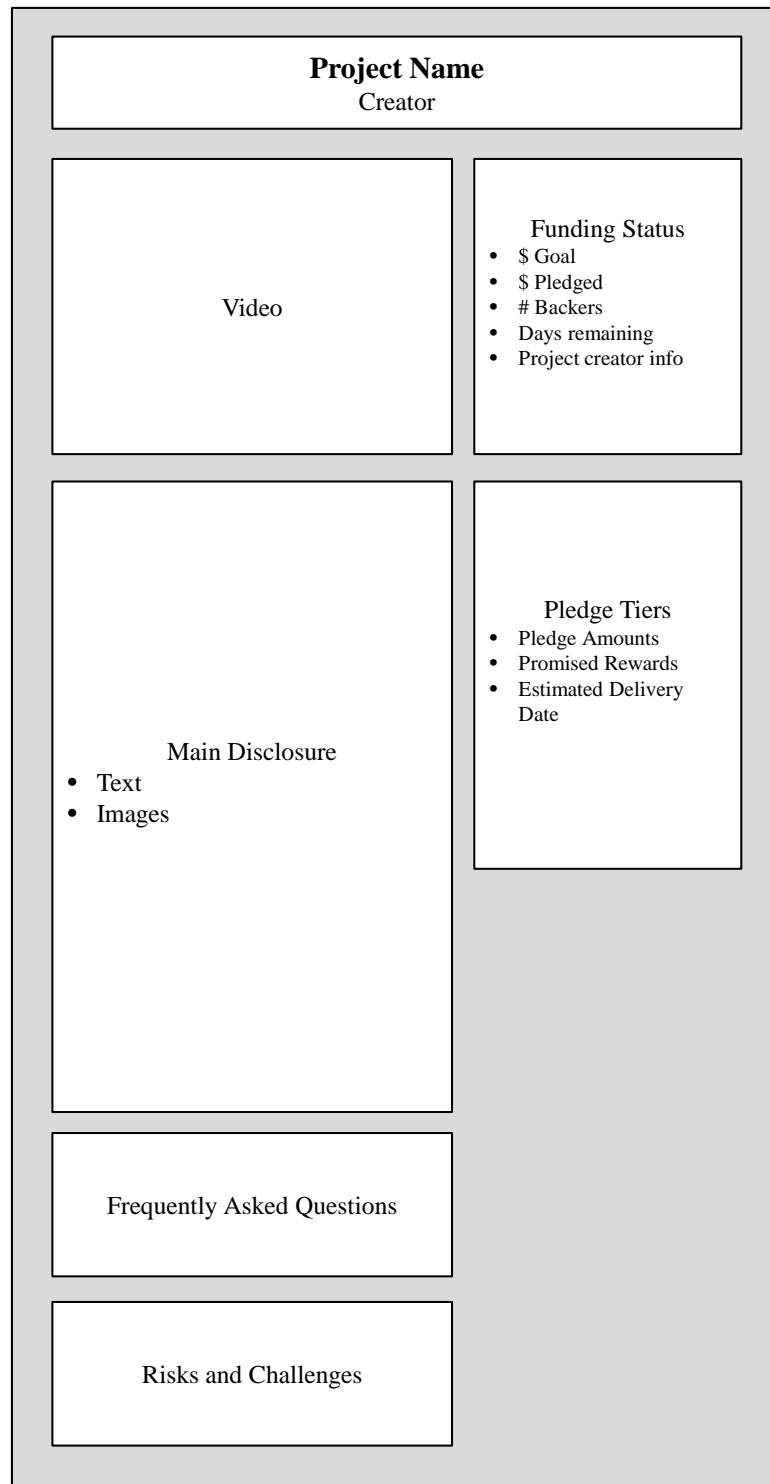
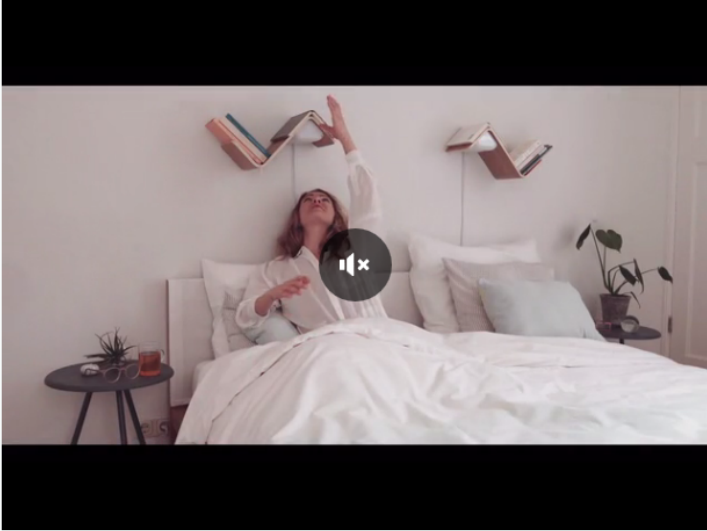


Figure 2: Sample Project Main Page

LiliLite: The All-in-One Book Lamp, Shelf, and Mark.

by LiliLite Team



173
backers

\$31,360
pledged of \$70,000 goal

15
days to go

[Back This Project](#) [★ Remind me](#)

This project will only be funded if at least \$70,000 is pledged by Thu, Jul 16 2015 11:25 AM CDT.

LiliLite Team
First created | 0 backed
lililite.com
[See full bio](#) [Contact me](#)

Los Angeles, CA Product Design [Share this project](#)

[Campaign](#) [Updates](#) [Comments \(4\)](#)

[Campaign](#) [Updates](#) [Comments \(4\)](#)

[Back This Project](#) [★ Remind me](#)

Introducing

LiliLite

The Ultimate Bedside Lamp for Readers



Pledge \$129 or more

79 backers **Limited (1 left of 80)**

ONE LILILITE - SUPER EARLY BIRD DEAL
Includes shipping to North America & European Union
Delivers November 2015 (in time for X-mas!)

Will retail for \$170 + shipping

Estimated delivery: Nov 2015
Ships anywhere in the world

Pledge \$139 or more

12 backers **Limited (68 left of 80)**

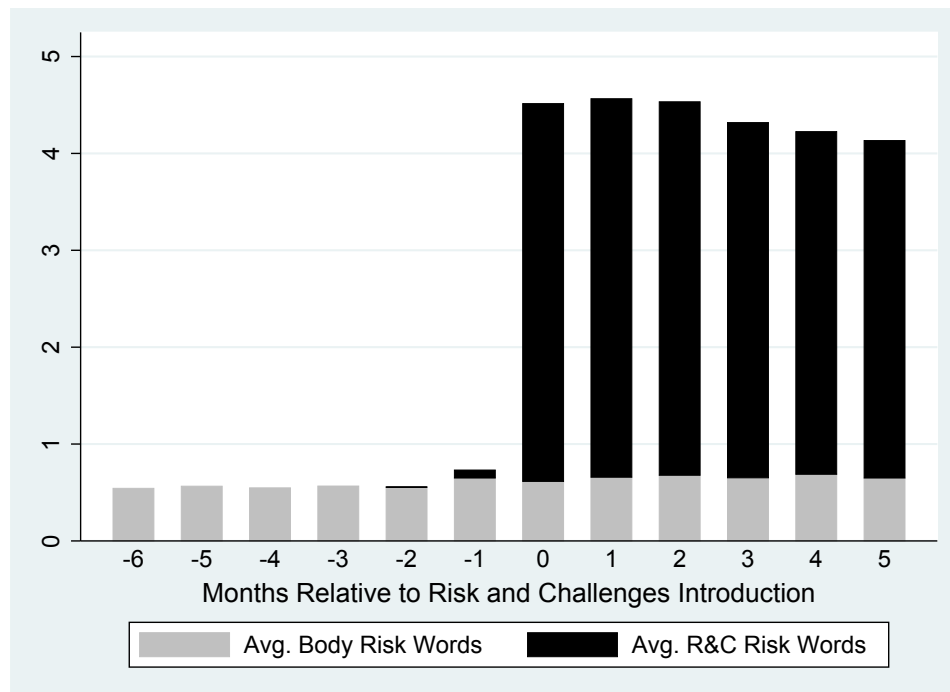
ONE LILILITE - EARLY BIRD DEAL
Includes shipping to North America & European Union
Delivers November 2015 (in time for X-mas!)

Will retail for \$170 + shipping

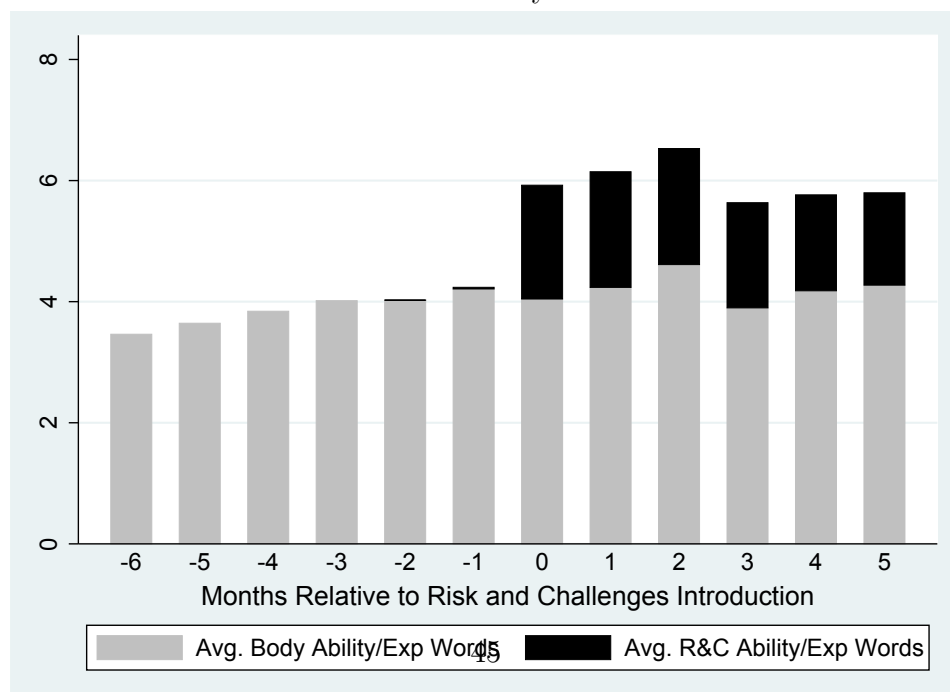
Figure 3: Discussion of Risks and Challenges

This figure graphs 30-day averages of risk words (panel A), ability words (panel B), and total words (panel C) used in both the project's body (light gray bars) as well as the project's risks and challenges (R&C) section (black bars) before and after the addition of a risks and challenges section on September 20, 2012 (day 0). A limited number of projects that were launched before September 20, 2012 and still "live" retroactively added a RC section (black bars on event months -2 and -1). Risk and ability words defined in Appendix B.

Panel A: Risk Words



Panel B: Ability Words



Panel C: Body Words

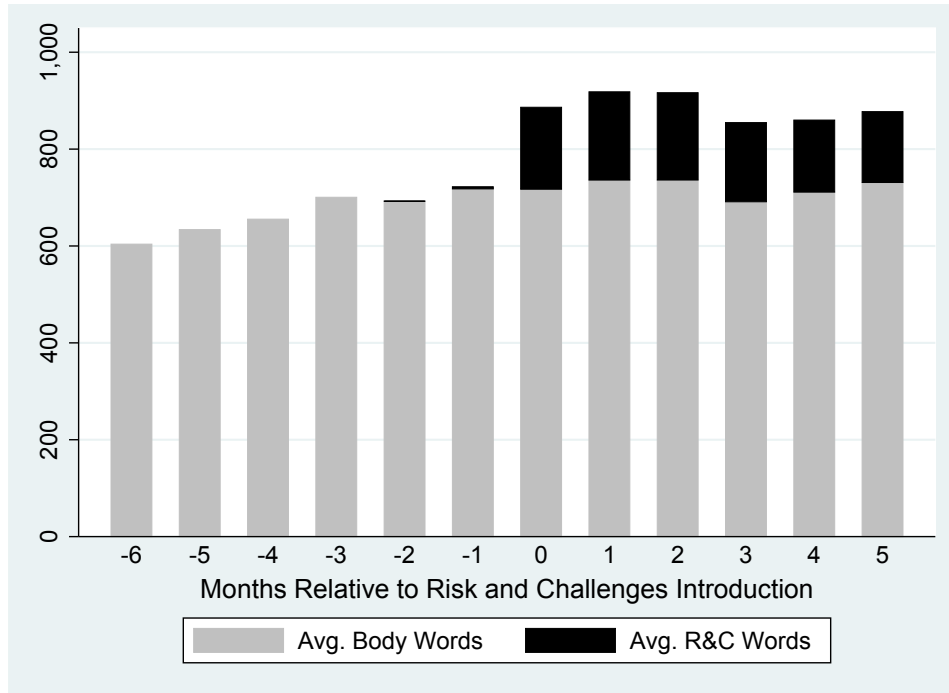


Table 1
Sample Selection and Summary Statistics

Panel A details the sample selection criteria. The sample contains all non-suspended, non-canceled Kick-starter projects launched during the twelve-month window centered on September 20, 2012, with a funding goal greater than \$5,000. Panel B presents summary statistics for all dependent and independent variables, and where † indicates components of the *Risky Outcome Index*. Panel C tabulates correlations between risk and ability words for the post-RC period. All variables defined in Appendix A.

Panel A: Risks and Challenges Sample Summary Statistics

Sample Composition Criteria	Projects
Projects launched between March 20, 2012 and March 20, 2013	42,061
Less Canceled Projects	(3,027)
Less Suspended Projects	(46)
Less Projects with missing text	(107)
Less Projects with a goal < \$5,000	(17,932)
Less Funded projects with 10 or fewer backers	(18)
Less Projects with a goal >\$1,000,000 and 10 or fewer backers	(12)
Less Singletons	(30)
Total RC Disclosure Sample	20,889
 Post-RC Subset	 9,623
Less Additional Singletons	(13)
Total Post-RC Disclosure Sample	9,610

Panel B: Summary Statistics

	N	Mean	Median	SD	P1	P99
Funding Outcomes						
Pledges	20,889	15,647.13	2,515.0	130,669.0	0	183,232
ln(Pledges)	20,889	7.03	7.8	3.1	0	12
Pledges3	14,677	3,344.57	315.0	55,562.5	0	33,131
ln(Pledges3)	14,677	5.00	5.8	3.0	0	10
Backers	20,889	199.77	33.0	1,477.9	0	2,667
ln(Backers)	20,889	3.36	3.5	2.0	0	8
Big Backers	20,889	2.67	0.0	21.9	0	25
ln(Big Backers)	20,889	0.61	0.0	0.9	0	3
Funded	20,889	0.37	0.0	0.5	0	1
Risky Outcome Index						
Risky Outcome Index	20,889	2.64	3.0	1.2	0	6
Risky Outcome High	20,889	0.52	1.0	0.5	0	1
Inexperienced Creator [†]	20,889	0.89	1.0	0.3	0	1
Ability Count	20,889	4.83	3.0	5.4	0	25
Low Ability [†]	20,889	0.29	0.0	0.5	0	1
Foreign Project [†]	20,889	0.08	0.0	0.3	0	1
Tangible [†]	20,889	0.19	0.0	0.4	0	1
Prototype [†]	20,889	0.17	0.0	0.4	0	1
Reward Tiers	20,889	10.30	9.0	6.2	1	31
High Reward Tiers [†]	20,889	0.25	0.0	0.4	0	1
Complexity Words	20,889	4.98	3.0	5.6	0	27
High Complexity [†]	20,889	0.26	0.0	0.4	0	1
Body Words	20,889	689.84	530.0	582.0	54	2,910
Low Body Words [†]	20,889	0.25	0.0	0.4	0	1
Specificity Words	20,889	15.35	11.0	15.7	0	73
Low Specificity [†]	20,889	0.25	0.0	0.4	0	1
Controls						
Projects Backed	20,889	2.18	1.0	6.1	0	24
ln(Projects Backed)	20,889	0.67	0.7	0.8	0	3
Project Uniqueness	20,889	0.00	0.0	1.0	-2	2
Featured Dummy	20,889	0.01	0.0	0.1	0	1
Distribution Dummy	20,889	0.71	1.0	0.5	0	1
Geography Dummy	20,889	0.42	0.0	0.5	0	1
Labor Dummy	20,889	0.22	0.0	0.4	0	1
Production Dummy	20,889	0.83	1.0	0.4	0	1
Legal Dummy	20,889	0.07	0.0	0.3	0	1

Panel B: Risks and Challenges Sample Summary Statistics (Continued)

	N	Mean	Median	SD	P1	P99
Risk & Challenges Section (<i>post-risk period only</i>)						
R&C Length (words)	9,610	164.11	132.0	122.2	22	613
R&C Long	9,610	0.50	1.0	0.5	0	1
Risk Word Count	9,610	4.38	4.0	2.6	2	13
Ability Word Count	9,610	5.96	4.0	5.9	0	28
Disclosure and Financing Structure						
Pictures	20,889	4.58	1.0	7.6	0	36
ln(Pictures)	20,889	1.06	0.7	1.1	0	4
Specificity	20,889	15.35	11.0	15.7	0	73
ln(Specificity)	20,889	2.34	2.5	1.0	0	4
FAQ	20,889	0.24	0.0	0.4	0	1
Persuade	20,889	14.49	9.0	17.3	0	84
ln(Persuade)	20,889	2.26	2.3	1.0	0	4
Goal	20,889	31,615.21	10,000.0	269,049.7	5,000	300,000
ln(Goal)	20,889	9.56	9.2	1.0	9	13
Delivery	20,889	113.34	80.0	118.4	0	548
ln(Delivery)	20,889	4.18	4.4	1.3	0	6
Funding Days	20,889	34.65	30.0	10.8	14	60
30 Day	20,889	0.60	1.0	0.5	0	1
Discount	20,889	0.04	0.0	0.2	0	1

Panel C: Risk and Challenges Correlations (*post-RC period only*)

	R&C Long	Risk Words	Ability Words
R&C Long	1.00		
Risk Words	0.29***	1.00	
Ability Words	0.27***	0.28***	1.00

Table 2
Risky Outcome Index

This table provides a validation test by regressing three post-funding outcome variables on *Risky Outcome Index*. The first variable, *Delay Dummy*, is an indicator equal to one if a project backers mentions the word “delay” in a post-funding comment. The second variable, $\text{Ln}(\text{Neg Tone})$, is the log number of comments by project backers with a negative tone (measured using IBM Watson). The final variable is an indicator equal to one if a project backer mentions the word “refund” in a post-funding comment. Control variables are defined in the appendix. Sample average for *Delay Dummy* is 0.18 and sample average for *Refund Dummy* is 0.11. Standard errors are clustered by category, and *, **, *** indicate differences that are statistically significant at the 10%, 5%, and 1% two-tailed level, respectively.

Funded Projects

$$\text{Outcome}_i = \alpha + \beta_1 \text{Risky Outcome High} + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

	Delay Dummy		Refund Dummy		Ln(Neg Tone)	
	(1)	(2)	(3)	(4)	(5)	(6)
Risky Outcome Index	0.027*** (7.33)	0.018*** (4.93)	0.019*** (3.96)	0.012*** (3.00)	0.124*** (6.32)	0.076*** (3.82)
ln(Goal)		0.110*** (7.50)		0.088*** (4.94)		0.590*** (8.64)
Project Uniqueness		-0.008 (-1.51)		-0.003 (-0.76)		-0.032 (-1.57)
Featured Dummy		0.057** (2.33)		0.054* (1.97)		0.532*** (4.82)
Time Trend		0.000 (0.31)		-0.001 (-0.73)		0.005 (1.28)
Observations	7,794	7,794	7,794	7,794	7,794	7,794
Adj R-Squared	0.33	0.37	0.26	0.30	0.50	0.58
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 3 Funding Outcomes and Risks and Challenges

This table estimates changes in funding outcomes after the introduction of a “risks and challenges” section on Kickstarter on September 20, 2012. We analyze all projects launched during the twelve month window centered on September 20, 2012. We examine how the effect of making risks and abilities salient (*Post-RC*) on five funding outcomes varies with the project’s riskiness (*Risky Outcome High*). Variables defined in Appendix A. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively.

$$\text{Funding Outcome}_i = \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{Risky Outcome High}_i + \beta_3 \text{Risky Outcome High} \times \text{Post-RC} + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

	(1)	(2)	(3)	(4)	(5)
	ln(Pledges)	ln(Pledges3)	ln(Backers)	ln(Big Backers)	Funded
Post-RC	0.06 (0.67)	0.15 (1.55)	0.03 (0.46)	0.02 (0.98)	0.01 (0.51)
Risky Outcome High	-0.28*** (-4.06)	-0.18** (-2.50)	-0.07 (-1.58)	0.04 (1.53)	-0.02** (-2.14)
Risky Outcome High × Post-RC	-0.20*** (-3.06)	-0.24*** (-3.26)	-0.15*** (-2.86)	-0.10*** (-3.35)	-0.05*** (-3.17)
Project Uniqueness	-0.39*** (-10.41)	-0.38*** (-11.31)	-0.25*** (-9.47)	-0.09*** (-6.44)	-0.04*** (-6.75)
Featured Dummy	2.75*** (14.76)	2.89*** (13.26)	2.45*** (13.83)	1.03*** (8.42)	0.48*** (13.74)
Distribution Dummy	0.51*** (10.24)	0.42*** (7.35)	0.31*** (9.57)	0.09*** (6.12)	0.04*** (5.89)
Geography Dummy	0.63*** (11.07)	0.63*** (10.61)	0.40*** (10.30)	0.14*** (8.15)	0.05*** (5.16)
Labor Dummy	0.34*** (5.31)	0.28*** (3.25)	0.21*** (4.78)	0.10*** (4.78)	0.03** (2.52)
Production Dummy	0.64*** (9.16)	0.52*** (7.37)	0.38*** (10.26)	0.10*** (7.97)	0.06*** (7.05)
Legal Dummy	0.31*** (3.22)	0.34*** (3.13)	0.30*** (3.93)	0.06* (1.91)	0.01 (0.84)
Time Trend	0.04*** (3.85)	0.04*** (3.28)	0.04*** (5.07)	0.01*** (2.82)	0.01*** (3.52)
Observations	20,889	14,677	20,889	20,889	20,889
Adj R-Squared	0.22	0.20	0.24	0.13	0.13
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Table 4
Risk and Ability Disclosures

This table summarizes changes in the total use of risk and ability words by project creators (i.e., use in both main body and RC section if present). Panel A tabulates regressions of the log count of total risk words (column 1) and total ability words (column 2) on an indicator for the post-RC period, including both category and region fixed effects. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively. Panel B tabulates the average number of total risk and ability words in both the pre-RC and post-RC periods by project category as well as the total universe of projects, where *, **, *** indicate differences that are statistically significant at the 10%, 5%, and 1% two-tailed level, respectively.

Panel A

$$\text{Ln(Words)}_i = \alpha + \beta_1 \text{Post-RC} + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

	Ln(Risk Words) (1)	Ln(Ability Words) (2)
Post-RC	1.30*** (101.45)	0.38*** (22.32)
Observations	20,889	20,889
Adj R-Squared	0.69	0.12
Category FE	Yes	Yes
Region FE	Yes	Yes

Panel B

	Projects		Risk Words		Ability Words	
	Pre	Post	Pre	Post	Pre	Post
Music	1,944	1,685	0.22	3.54 ***	4.62	6.78 ***
Crafts	35	54	0.34	3.80 ***	2.43	3.63
Comics	284	273	0.70	3.93 ***	2.05	4.00 ***
Fashion	392	452	0.35	4.01 ***	1.65	3.43 ***
Art	675	498	0.46	4.04 ***	3.25	4.51 ***
Food	661	620	0.35	4.18 ***	2.98	4.91 ***
Theater	382	267	0.45	4.19 ***	3.34	5.11 ***
Journalism	75	55	0.69	4.29 ***	3.80	6.84 ***
Photography	279	207	0.45	4.33 ***	2.84	3.63 **
Publishing	1,459	1,091	0.66	4.37 ***	3.20	4.98 ***
Dance	89	76	0.38	4.47 ***	3.02	5.11 ***
Design	616	711	0.51	4.59 ***	2.97	5.61 ***
Film & Video	3,102	2,248	0.68	4.73 ***	4.07	6.30 ***
Technology	310	391	0.71	5.03 ***	5.85	9.67 ***
Games	963	995	1.27	5.26 ***	5.71	7.65 ***
Total	11,266	9,623	0.58	4.38 ***	3.86	5.97 ***

Table 5
Entropy Balancing Summary Statistics

This table presents summary statistics for the entropy-balanced R&C Short and R&C Long samples. In panel A we select the 4,797 projects with a less-than-or-equal-to median length of the RC section which were launched during the six months after the requirement to discuss risks and challenges (R&C Short) as well as all projects launched during the six months prior to the requirement to discuss risks and challenges. Using entropy balancing, we identify a weight for each project during the pre-RC period such that the covariate distribution of the pre-RC disclosure sample and the R&C Short post-RC disclosure sample are nearly identical (i.e., covariate balance). We balance on creator and project attributes which are correlated with short and long RC sections and tabulate summary statistics for these variables in panel A. The first section of panel A tabulates weighted pre-RC statistics for the entropy balanced sample, and the second section tabulates summary statistics for the post-RC sample. In panel B we employ the same methodology for the 4,841 projects launched with a greater-than-median length of the risks and challenges section (R&C Long) and tabulate summary statistics for the balancing variables in both the pre- and post-RC samples.

Panel A: R&C Short

	N	Mean	Median	SD
Pre-RC Period				
ln(Projects Backed)	11,281	0.598	0.0	0.8
Experienced Dummy	11,281	0.117	0.0	0.3
Project Uniqueness	11,281	0.130	0.1	1.0
Distribution Dummy	11,281	0.671	1.0	0.5
Geography Dummy	11,281	0.371	0.0	0.5
Labor Dummy	11,281	0.175	0.0	0.4
Legal Dummy	11,281	0.058	0.0	0.2
Tangible	11,281	0.169	0.0	0.4
Foreign Project	11,281	0.101	0.0	0.3
Post-RC Period				
ln(Projects Backed)	4,797	0.598	0.0	0.8
Experienced Dummy	4,797	0.117	0.0	0.3
Project Uniqueness	4,797	0.130	0.1	1.0
Distribution Dummy	4,797	0.671	1.0	0.5
Geography Dummy	4,797	0.371	0.0	0.5
Labor Dummy	4,797	0.175	0.0	0.4
Legal Dummy	4,797	0.058	0.0	0.2
Tangible	4,797	0.169	0.0	0.4
Foreign Project	4,797	0.101	0.0	0.3

Panel B: R&C Long

	N	Mean	Median	SD
Pre-RC Period				
ln(Projects Backed)	11,281	0.802	0.7	0.9
Experienced Dummy	11,281	0.115	0.0	0.3
Project Uniqueness	11,281	-0.109	-0.1	1.0
Distribution Dummy	11,281	0.768	1.0	0.4
Geography Dummy	11,281	0.480	0.0	0.5
Labor Dummy	11,281	0.242	0.0	0.4
Legal Dummy	11,281	0.103	0.0	0.3
Tangible	11,281	0.266	0.0	0.4
Foreign Project	11,281	0.134	0.0	0.3
Post-RC Period				
ln(Projects Backed)	4,841	0.802	0.7	0.9
Experienced Dummy	4,841	0.115	0.0	0.3
Project Uniqueness	4,841	-0.109	-0.1	1.0
Distribution Dummy	4,841	0.768	1.0	0.4
Geography Dummy	4,841	0.480	0.0	0.5
Labor Dummy	4,841	0.242	0.0	0.4
Legal Dummy	4,841	0.103	0.0	0.3
Tangible	4,841	0.266	0.0	0.4
Foreign Project	4,841	0.134	0.0	0.3

Table 6 Creators' Disclosures and Financing Structure

This table estimates changes in disclosures (columns 1 through 4) and financing structure (columns 5 through 8) after Kickstarter began asking project creators to discuss their risks and challenges on September 20, 2012. We analyze the set of projects launched starting six months before through six months after September 20, 2012. We use the weights from the entropy balancing procedure described in table 5 to produce estimates of projects with short and long risk and challenges sections during the pre-RC period. Specifically, *R&C Long-E* indicates projects with a greater-than-median length of the risks and challenges section during the post-RC period, or pre-RC projects that were weighted using entropy balancing to match the covariate distribution of projects with a high risk length. We include control variables from table 5. All variables are defined in Appendix A. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively.

$$\begin{aligned} \text{Project Attribute}_i &= \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{R\&C Long-E} + \beta_3 \text{Post-RC} \times \text{R\&C Long-E}_i & (5) \\ &+ \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i \end{aligned}$$

Table 7 Funding Outcomes and Lengthy RC Sections

This table examines how funding outcomes for projects with riskier outcomes (*Risky Outcome High*) vary with creators' discussion of risks and abilities (*R&C Long*). In Panel A we analyze the set of projects launched during the six month period immediately after the introduction of the risks and challenges section on September 20, 2012 and uses the length of the RC section (*R&C Long*) and control variables from table 3 (untabulated), as well as category and region fixed effects. Panel B examines the six month pre-RC sample using the entropy balancing procedure described in table 5 to identify projects which would likely have had lengthy risks and challenges sections if the section had been mandated (*R&C Long-E*). Standard errors are clustered by category, t-statistics are in parentheses, *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance that the coefficient estimate is different from zero, respectively, and †, ††, ††† indicate 10%, 5%, and 1% one-tailed statistical significance based on a seemingly unrelated regression that the absolute value of the coefficient estimate in panel A is larger than the absolute value of the corresponding estimate in panel B.

$$\text{Funding Outcome}_i = \alpha + \beta_1 \text{R\&C Long} + \beta_2 \text{Risky Outcome High}_i + \beta_3 \text{R\&C Long} \times \text{Risky Outcome High} + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

Panel A: Post-RC

	(1)	(2)	(3)	(4)	(5)
	ln(Pledges)	ln(Pledges3)	ln(Backers)	ln(Big Backers)	Funded
R&C Long	0.164*** (2.68)	0.209*** (3.40)	0.104*** (2.66)	0.052** (2.31)	0.018 (1.56)
Risky Outcome High	-0.638*** (-8.88)	-0.517*** (-6.68)	-0.313*** (-5.75)	-0.065** (-2.41)	-0.070*** (-4.26)
Risky Outcome High × R&C Long	0.487*** (4.70)	0.332*** (3.00)	0.281*** (3.96)	0.091** (2.44)	0.012 (0.69)
Observations	9,610	8,459	9,610	9,610	9,610
Adj R-Squared	0.22	0.20	0.23	0.13	0.13
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

Panel B: Pre-RC

	(1)	(2)	(3)	(4)	(5)
	ln(Pledges)	ln(Pledges3)	ln(Backers)	ln(Big Backers)	Funded
R&C Long-E	0.042*** (3.06)	0.036*** (2.68)	0.029*** (3.03)	-0.001 (-0.10)	0.008*** (3.24)
Risky Outcome High	-0.386*** (-5.59)†††	-0.305*** (-3.76)†††	-0.143*** (-3.26)†††	0.003 (0.12)††	-0.041*** (-3.48)†
Risky Outcome High × R&C Long-E	0.144*** (6.01)†††	0.141*** (4.94)†	0.091*** (6.16)†††	0.041*** (4.68)†	0.012*** (3.19)
Observations	22,562	12,448	22,562	22,562	22,562
Adj R-Squared	0.25	0.24	0.28	0.16	0.14
Controls	Yes	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Table IA1
Risky Outcome Index

This table tabulates correlation coefficients between *Risky Outcome Index* and various project characteristics. Variables are defined in the appendix, and *, **, *** indicate correlations that are statistically significant at the 10%, 5%, and 1% two-tailed level, respectively.

	Risky Outcome Index
ln(Risk Length)	-0.02
ln(Risk Words)	0.00
ln(Projects Backed)	0.03***
Project Uniqueness	0.03***
Featured Dummy	0.02*
ln(Pictures)	0.20***
FAQ	0.17***
ln(Persuade)	0.02***
ln(Goal)	0.12***
ln(Delivery)	-0.03***
30 Day	-0.00
Discount	0.19***
Funded	-0.07***
ln(Pledges)	-0.00
ln(Backers)	0.04***

Table IA2 Funding Outcomes and Risks and Challenges–Longer Windows

This table estimates changes in funding outcomes using all projects launched in an expanded 24 month window centered on September 20, 2012. See Table 3 for details on research design. Control variables from Table 3 are included but not tabulated. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively.

$$\text{Funding Outcome}_i = \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{Risky Outcome High}_i + \beta_3 \text{Risky Outcome High} \times \text{Post-RC} + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

	(1) ln(Pledges)	(2) ln(Pledges3)	(3) ln(Backers)	(4) ln(Big Backers)	(5) Funded
Post-RC	0.03 (0.42)	0.26*** (2.94)	0.04 (0.85)	0.04* (1.75)	0.02** (2.38)
Risky Outcome High	-0.45*** (-7.98)	-0.14* (-1.80)	-0.18*** (-4.88)	0.01 (0.44)	-0.04*** (-5.90)
Risky Outcome High \times Post-RC	0.07 (1.25)	-0.19*** (-2.74)	0.03 (0.89)	-0.04* (-1.92)	-0.01* (-1.66)
Observations	41,360	25,715	41,360	41,360	41,360
Adj R-Squared	0.22	0.19	0.24	0.14	0.13
Controls	Yes	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Table IA3 Creators' Disclosures and Financing Structure—Longer Windows

This table estimates changes in disclosures (columns 1 through 4) and financing structure (columns 5 through 8) using all projects launched in an expanded 24 month window centered on September 20, 2012. See table 6 for details on research design. All variables are defined in Appendix A. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively.

$$\begin{aligned} \text{Project Attribute}_i = & \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{R\&C Long-E} + \beta_3 \text{Post-RC} \times \text{R\&C Long-E}_i \\ & + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i \end{aligned} \quad (6)$$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ln(Pictures)	ln(Specificity)	FAQ	ln(Persuade)	ln(Goal)	ln(Delivery)	30 Day	Discount
Post-RC	-0.084*** (-3.21)	-0.099*** (-5.23)	-0.031*** (-3.46)	-0.106*** (-6.16)	-0.087*** (-2.73)	-0.035 (-1.12)	-0.096*** (-7.52)	-0.016 (-1.57)
R&C Long-E	-0.023*** (-4.39)	0.005* (1.90)	-0.001 (-0.43)	-0.001 (-0.44)	-0.000 (-0.08)	-0.007* (-1.80)	-0.000 (-0.11)	-0.007*** (-4.83)
R&C Long-E × Post-RC	0.199*** (12.45)	0.130*** (11.75)	0.039*** (7.04)	0.137*** (8.61)	0.135*** (8.07)	0.105*** (7.13)	-0.013* (-1.93)	0.027*** (4.71)
Observations	60,744	60,744	60,744	60,744	60,744	60,742	60,744	60,744
Adj R-Squared	0.43	0.31	0.14	0.47	0.16	0.14	0.04	0.15
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA4 Funding Outcomes and Lengthy RC Sections–Longer Windows

This table examines how funding outcomes for projects with riskier outcomes (*Risky Outcome High*) vary with creators' discussion of risks and abilities (*R&C Long*) using all projects launched in an expanded 24 month window centered on September 20, 2012. See Table 7 for details on research design. Standard errors are clustered by category, t-statistics are in parentheses, *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance that the coefficient estimate is different from zero, respectively, and †, ††, ††† indicate 10%, 5%, and 1% two-tailed statistical significance based on a seemingly unrelated regression that the coefficient estimate in panel A is different from the corresponding estimate in panel B.

$$\text{Funding Outcome}_i = \alpha + \beta_1 \text{R\&C Long} + \beta_2 \text{Risky Outcome High}_i + \beta_3 \text{R\&C Long} \times \text{Risky Outcome High}_i + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

Panel A: Post-RC

	(1)	(2)	(3)	(4)	(5)
	ln(Pledges)	ln(Pledges3)	ln(Backers)	ln(Big Backers)	Funded
R&C Long	0.142*** (2.98)††	0.119*** (3.20)††	0.087*** (3.32)††	0.032** (2.17)††	0.002 (0.25)
Risky Outcome High	-0.564*** (-10.58)	-0.490*** (-8.25)†††	-0.268*** (-7.51)††	-0.054** (-2.41)††	-0.069*** (-6.48)†
Risky Outcome High × R&C Long	0.517*** (6.78)†††	0.464*** (5.36)†††	0.295*** (5.64)†††	0.120*** (4.91)†††	0.034*** (2.83)
Observations	21,985	19,490	21,985	21,985	21,985
Adj R-Squared	0.21	0.19	0.22	0.13	0.12
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

Panel B: Pre-RC

	(1)	(2)	(3)	(4)	(5)
	ln(Pledges)	ln(Pledges3)	ln(Backers)	ln(Big Backers)	Funded
R&C Long-E	0.027** (2.45)	0.031** (2.37)	0.022*** (2.90)	0.002 (0.42)	0.006*** (3.12)
Risky Outcome High	-0.479*** (-8.85)	-0.217*** (-2.73)	-0.194*** (-5.43)	-0.016 (-0.79)	-0.049*** (-6.36)
Risky Outcome High × R&C Long-E	0.172*** (9.17)	0.138*** (4.78)	0.110*** (8.58)	0.038*** (5.40)	0.016*** (5.25)
Observations	38,750	12,448	38,750	38,750	38,750
Adj R-Squared	0.21	0.22	0.22	0.12	0.12
Controls	Yes	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Table IA5 Funding Outcomes and Risks and Challenges–Falsification

This table estimates changes in funding outcomes using all projects launched in a 12 month window centered on March 20, 2012 (i.e., 6 months previous to the introduction of the risks and challenges section). See Table 3 for details on research design. *Post-RC* is set equal to one for projects launched on or after March 20, 2012 but before September 20, 2012, and equal to zero for projects launched during the six month window before March 20, 2012. Control variables from Table 3 are included but not tabulated. Standard errors are clustered by category, t-statistics are in parentheses, and *, **, *** indicate 10%, 5%, and 1% two-tailed statistical significance, respectively.

$$\text{Funding Outcome}_i = \alpha + \beta_1 \text{Post-RC} + \beta_2 \text{Risky Outcome High}_i + \beta_3 \text{Risky Outcome High} \times \text{Post-RC} + \Gamma \text{Controls}_i + \Delta \text{Category FE} + \Omega \text{Region FE} + \epsilon_i$$

	(1) ln(Pledges)	(2) ln(Backers)	(3) Funded
Post-RC	-0.12 (-1.58)	-0.06 (-1.38)	-0.00 (-0.31)
Risky Outcome High	-0.81*** (-13.50)	-0.40*** (-9.39)	-0.08*** (-10.18)
Risky Outcome High × Post-RC	0.55*** (6.11)	0.35*** (5.28)	0.05*** (3.84)
Observations	19,346	19,346	19,346
Adj R-Squared	0.23	0.25	0.14
Controls	Yes	Yes	Yes
Category FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes