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# The Signal Value of Crowdfunded Products

Oguz A. Acar<sup>®</sup>, Darren W. Dahl, Christoph Fuchs, and Martin Schreier

#### Abstract

Crowdfunding has emerged as an alternative means of financing new ventures by utilizing the financial support of a large group of individual investors. This research asks a novel question: Does being crowdfunded carry any signal value for the broader market of observing consumers? Seven studies reveal a consumer preference for crowdfunded products, even after controlling for a product's objective product characteristics. The authors identify two inferences that help explain this effect: (1) consumers perceive crowdfunded products to be of higher quality, and (2) they believe that supporting crowdfunding reduces inequality in the marketplace. The authors further document an important boundary condition of the first inference: the identified effect reverses in high-risk domains (e.g., products that involve high physical risk) due to consumer perceptions that the crowdfunding model lacks sufficient professionalism to mitigate risk. With regard to the second inference, the authors find that the positive crowdfunding effect is particularly strong among consumers who value social equality. Taken together, this work sheds new light on consumer perceptions of crowdfunding, elucidates why and when consumers prefer crowdfunded products, and offers actionable implications for managers.

#### **Keywords**

crowdfunding, consumer inferences, inequality, new products, start-ups

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Crowdfunding is increasingly used as an alternative means of financing new ventures. Instead of asking venture capitalists, banks, or other professional financial service providers to invest in an idea, crowdfunding enables people to pitch ideas directly to the general public, that is, the potential customers of the prospective new product (Belleflamme, Lambert, and Schwienbacher 2014; Kuppuswamy and Bayus 2018; Mollick 2014). This crowdfunding audience seems willing to invest: at Kickstarter, one of the leading crowdfunding platforms, over 18 million individuals have helped finance more than 190,000 projects since its launch in 2009 (Kickstarter 2020). More generally, crowdfunding platforms across the globe raised more than US\$30 billion in 2015 (Zvilichovsky, Danziger, and Steinhart 2018), a figure the World Bank estimates will triple by 2025 (The World Bank 2013). The rise of crowdfunding ventures has sparked strong scholarly interest across disciplines such as finance, entrepreneurship, strategy, and marketing. Much recent attention has been dedicated to better understanding consumer motivation for participating in crowdfunding (e.g., Boudreau et al. 2015; Gerber, Hui, and Kuo 2012; Kuppuswamy and Bayus 2017; Ordanini et al. 2011; Zvilichovsky, Danziger, and Steinhart 2018) as well as the dynamics and success factors of the crowdfunding process (e.g., Agrawal, Catalini, and Goldfarb 2015; Burtch, Ghose, and Wattal

2013; Greenberg and Mollick 2017; Kim et al. 2020; Mollick 2014).

In this article, we build on the initial research and address the novel question of how crowdfunding is interpreted by the broader consumer market. Specifically, we ask whether noninvolved consumers—that is, the entire market of a firm's potential customers—differentially react to products as a function of the underlying venture-funding history of said product. Indeed, given the success of crowdfunding as a mechanism in bringing products to market, consumers can now choose between products that were financed via traditional means or crowdfunding. Herein lies the central research question of this work: Is there value for the firm in signaling and communicating the source of a product's financing to consumers? Will consumers react more favorably to crowdfunded products? If



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so, what are the psychological reasons underlying the effect, and what are the related boundaries?

We report the results of seven studies that define our contribution. First, we clarify the signal that crowdfunding provides to the broader consumer market by demonstrating that being crowdfunded can help differentiate products, ultimately increasing demand for such products in the marketplace. Importantly, this effect materializes even after controlling for a product's objective product characteristics. Second, we find that consumer preference for crowdfunded products can be understood through a dual-process account entailing positive inferences about (1) the quality of crowdfunded products and (2) the ability of crowdfunding to dispel inequality in the marketplace. Importantly, both inferences motivate consumers to respond positively to the crowdfunding signal. Third, we identify perceived risk associated with the underlying product as a theoretically and managerially relevant boundary condition of our focal effect. Specifically, we identify a reversal of the positive crowdfunding effect that turns negative in high-risk domains (e.g., products involving high physical risk). In this context, a reversal occurs because consumers view crowdfunded products as lower quality (rather than higher quality). Fourth, in support of our process account, we find that the positive crowdfunding effect operating via the inequality account is particularly strong among consumers who are fundamentally against social inequality or are experimentally primed to be so.

From a substantive viewpoint, our findings highlight the conditions under which start-ups and retailers alike might use "crowdfunded" as a differentiating attribute at the point of sale. Because it is currently rare to see crowdfunded labeling in the marketplace (an exception is Amazon's Kickstarter category, which groups and explicitly markets all crowdfunded products as such to the general public), we believe this finding provides a disruptive spark not only for crowdfunding thought but also for crowdfunding practice. More broadly, our research shows that financing methods can have important marketing implications—in the form of increased product demand—which managers should consider when defining their communication strategies.

# Crowdfunding

Crowdfunding is defined as "efforts by entrepreneurial individuals and groups—cultural, social, and for-profit—to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries" (Mollick 2014, p. 2). Entrepreneurs can opt to directly pitch their ideas via the internet to millions of people; in other words, "anyone who can convince the public he [or she] has good business ideas can become an entrepreneur, and anyone with a few dollars to spend can become an investor" (Bradford 2012, p. 10).

The basic idea behind collective financing is not new; it actually dates back centuries. In the eighteenth century, for example, before the young poet Alexander Pope became famous, he struggled to finance the publication of his translation of Homer's *Iliad*. Lacking resources for publication and support from publishers, Pope turned to his readers to help publish the first volume, asking for their support in exchange for a copy. Another example of early crowdfunding occurred in 1885, when the U.S. government lacked resources to fund the pedestal of the Statue of Liberty. A newspaper campaign appealed to the public for help, and 160,000 contributors financed its final establishment with small donations (BBC 2013). The rise of the internet has unleashed crowdfunding's full potential, enabling entrepreneurial initiatives to reach a bigger audience. For instance, in 1996 the British rock band Marillion faced cancellation of its U.S. tour due to financial problems; fans of the band contributed \$60,000 online to save the tour. The band then applied the same approach to finance the release of their next record in 2001, a funding model that was directional for many artists in the following years (Gibson 2008). Crowdfunding or variants thereof have also been successfully applied in politics; for example, in 2012 U.S. president Barack Obama collected US\$214 million for his campaign via small donations, which helped ensure his reelection (Marom 2012). But perhaps the institutions that stand to benefit most from crowdfunding are entrepreneurs and businesses, as they are increasingly circumventing conventional sources of financing. Instead, they are turning to crowdfunding via newly formed platforms such as Kickstarter or Indiegogo to launch their projects and/or ventures.

Given the growing prominence of crowdfunding as a viable funding source for a wide range of business projects, scholars from diverse disciplines have shown great interest in understanding its dynamics. Prior research has predominantly asked, what drives consumers to support crowdfunding projects, and what are the antecedents of financial success in crowdfunding platforms? For example, Zvilichovsky, Danzinger, and Steinhart (2018) demonstrated experimentally that crowdfunding participants are motivated by "making the product happen," particularly if a similar product would be otherwise unavailable on the market. In a similar vein, Dai and Zhang (2019) documented field evidence for consumers' prosocial motives in helping creators reach their funding goals on the Kickstarter platform. A stream of recent research also suggests that crowdfunding might have benefits beyond simply financing the venture. Specifically, firms can use crowdfunding to collect early consumer feedback on their product ideas, promote and distribute their products, or build relationships with their initial customers (Bitterl and Schreier 2018; Brown, Boon, and Pitt 2017). All of this prior research, to our knowledge, has focused on participating consumers (i.e., consumers who are funding or participating in project achievement). In this article, we take a different perspective and focus on how observing, nonparticipating consumers view crowdfunded products. That is, we examine whether the broader consumer market responds differently when a product is the outcome of crowdfunding.

# Consumer Reactions to Crowdfunded Products

### The Positive Crowdfunding Effect

In short, we predict that consumers will demonstrate a greater preference for crowdfunded products versus products that have been funded differently (such as by corporate, venture capital, or self-financing) or that do not mention any funding source. Importantly, we make this prediction even after controlling for a product's objective characteristics. In other words, we maintain that consumers will demonstrate a greater demand for the same product if they learn that it has been funded by the crowd. We build this prediction on a dual-process account that entails positive inferences about (1) the quality of crowdfunded products and (2) the ability of crowdfunding to drive out inequality in the marketplace.

Inferences of product quality. First, we predict that consumers will demonstrate a greater preference for crowdfunded products because of higher product quality associations.<sup>1</sup> Indeed, there are several indications that the "crowdfunded" label might entail positive signaling for product quality. The many successful project outcomes (and the fact that crowdfunding platforms are flourishing) point to the efficacy of this funding model. For example, a study on the longer-term implications of crowdfunding discovered that over 90% of successful Kickstarter projects survived their first year after funding, with a third of them generating revenues of more than \$100,000 per year (Mollick and Kuppuswamy 2014). Further, it appears that even professionals interpret "crowdfunded" as an indicator of quality. Specifically, Sorenson et al. (2016) showed that venture capital follows crowdfunding; crowdfunding activities in a specific geographic area (i.e., Kickstarter money going to start-ups in a certain region) effected a positive subsequent change in venture capital funding in that same area.

Important to our conceptualization, we contend that revealed information regarding other consumers' investments in a crowdfunded project might be viewed by observing consumers as a strong signal in and of itself. Prior economics research has highlighted the value of such a signal; when individuals make decisions with imperfect information, they often follow others' beliefs, decisions and behaviors, a phenomenon also referred to as "herding behavior" (Banerjee 1992), "bandwagon effects" (Leibenstein 1950), or "information cascades" (Bikhchandani, Hirshleifer, and Welch 1992). Indeed, numerous studies have found that consumers often associate the popularity of a product with better value and quality and in turn show greater demand for that product (e.g., Caminal and Vives 1996; Herpen, Pieters, and Zeelenberg 2009). For example, simply presenting a dish as one of the five most popular dishes on a restaurant menu is found to increase demand for that dish by up to 20% (Cai and Chen 2009). Though not necessarily consumers of the crowdfunded product themselves, we contend that consumer "investors" who support crowdfunded projects send a parallel signal to observing consumers (i.e., an indication of social proof), leading to bandwagon and herding effects for the potential purchase of the crowdfunded product.

To corroborate our theoretical account and obtain finegrained insights into the inferences made by consumers due to the crowdfunding signal, we conducted a qualitative study using in-depth interviews with 28 respondents (for more details, see the Web Appendix). These interviews supported the role of a social proof heuristic in determining consumers' inferences about crowdfunded products. Specifically, we found support for our predicted inference: if many people (i.e., the crowd) invest in a product, it "must be good." One informant, for example, indicated, "I would say that [the crowdfunded products are better], and I trust the crowd and the opinion of many and I would believe that the product would be better if 100 consumers say 'I would invest in it'!" (Interview #23). Thus, consumers seem to associate crowdfunded products with better product quality because they "trust the crowd and the opinion of many" (Interview #23). Importantly, these positive quality inferences specifically emerged when informants identified product domains where they believed the crowd (i.e., nonprofessional investors) could judge the quality of the product.

We further posit that consumers may have greater trust in the quality of crowdfunded products because they view other consumers investing their own money into a product as a "costly signal" (Smith and Bird 2005). This signal is different from "cheap talk" signals, where people are merely spreading positive word of mouth about a product (Spence 1974). This costliness argument also emerged in our interviews, along with the lay belief that crowdfunded products better address specific consumer needs (i.e., "what consumers really need") because the consumers themselves, rather than a company or financial investors, decide which products are financed. Finally, consumers ostensibly infer that successfully crowdfunded start-ups must be dedicated to their products and "really passionate about what they are doing" (Interview #3), otherwise consumer investors would not invest their money in these underdog firms (Paharia, Avery, and Keinan 2014). Drawing on these considerations, we predict that consumers will associate crowdfunded products with higher quality, which in turn should spur a greater preference for crowdfunded products.

*Inferences of equality of opportunity in the marketplace.* Second, we predict that beyond any product-related beliefs, consumers will demonstrate a greater preference for crowdfunded products because they believe that supporting crowdfunding reduces inequality in the marketplace. This idea is consistent with the view of Mollick (2016), who argues that crowdfunding "transforms the opaque and oligarchical market for early-stage fundraising into a more democratic, open one." Likewise, Mollick and Robb (2016, p. 86) postulate that crowdfunding can be viewed as "the democratization of innovation, entrepreneurship,

<sup>&</sup>lt;sup>1</sup> This prediction refers to "regular" products that are not associated with high levels of risk. For higher-risk domains, see our moderation hypothesis (H<sub>3</sub>).

and entrepreneurial finance," and that by "giving a voice to people who would otherwise never even have a chance to seek funding, let alone provide it, crowdfunding creates opportunities for new businesses and innovations, as well as a new wave of investors." Beyond this conjecture, crowdfunding has been empirically shown to be capable of providing capital to entrepreneurs in more places, including places with little previous access to venture capital funding (Sorenson et al. 2016). Moreover, recent findings by Greenberg and Mollick (2017) show that women, who have traditionally had less access to venture funding than men, are more likely to be supported in crowdfunding campaigns.

We wanted to augment this formative support for our thinking by utilizing the qualitative interviews to ascertain the following: Are consumers specifically concerned about unequal opportunities in the marketplace (e.g., some firms do not have the opportunity to grow and sustain their business), and importantly, is crowdfunding viewed as a means of equal opportunity in this regard? Our interviews indeed show that consumers see inequality in the marketplace. Consumers find the ideology behind crowdfunding appealing because crowdfunding enables firms to enter the market without relying on traditional financial means.<sup>2</sup> This point is illustrated by the following quote (Interview #2):

But certainly, the chances are not equal for everyone. If I as a hobbyist, as a normal working guy, somehow develop a product at my garage at home, then [getting financed by] the bank is already quite difficult. They will not be excited that I want money for some cool new stool in my garage! [*laughs*] That is certainly quite difficult. Such products are not interesting to investors in most of the cases. That means you can certainly apply there, but it is highly improbable. The door is more or less closed. And for such people, not all doors are open, or at least some doors are more closed than others. And the crowdfunding door, so to speak, is initially open to anyone.

Our interviews further indicate that consumers perceive crowdfunded firms to be smaller and financially weaker than those funded by venture capitalists; as a result, consumers consider the former type of firms to be relatively disadvantaged in terms of their "power," "influence," or "financial resources." Several informants expressed a related sense of caring and demonstrated a desire to equalize the playing field for the crowdfunded product's creator. Here, some of our narratives were consistent with the finding that consumers often prefer products from firms that are perceived as underdogs—that is, smaller, disadvantaged firms that battle with their "heart" against large firms (Kirmani et al. 2017; Paharia, Avery, and Keinan 2014; Thompson, Rindfleisch, and Arsel 2005). For example, when one informant was asked whether he would rather choose a backpack from a firm that relies on crowdfunding or one that relies on traditional forms of financing (e.g., venture capital), he said that he would "go for the crowdfunded backpack just to support the little ones" (Interview #18).

Notably, the notion of inequality reduction refers to the opportunity to have equality rather than to the outcome of equality itself. The main logic is that everyone should be given the same opportunity, but not everyone should be equal (and thus not everyone will have the same capabilities; see also Alesina and La Ferrara 2005). The playing field for these opportunities is the marketplace. This nuance was explicitly acknowledged in our interviews as exemplified by one of the respondents who considers crowdfunding "a new way of having opportunities of funding to people with good ideas that cannot access the traditional methods" (Interview #3).

It is important to note that our qualitative findings pointed to both the equality of opportunity and resources provided through crowdfunding. However, the focus of discussion primarily centered on opportunity for the crowdfunded product (in the marketplace). The identification of resources here seemed to underlie opportunity, but was not focal as the central inference in the equality discussion. As such, our conceptualization and empirical work examines crowdfunding as a means to establish equal opportunity for products in the marketplace (and reducing marketplace inequality as a result). In summary, we predict that inferences of equal opportunity in the marketplace are a secondary motivation underlying a positive crowdfunding effect on consumer preferences. Our theorizing thus yields the following two hypotheses:

- **H**<sub>1</sub>: Consumers demonstrate a greater preference for products that have been crowdfunded versus products that have been funded by corporate, venture capital, or self-funding (or products that do not mention any funding source).
- **H<sub>2</sub>:** The positive effect of crowdfunding on consumer product preference is mediated by (a) inferences of product quality and (b) inferences of equal opportunity in the marketplace.

#### High-Risk Domains as a Boundary Condition

Although we believe that the positive crowdfunding effect can be observed in different situations and domains, we do not deem it to be universal. We predict that a central boundary condition to consider is the risk consumers associate with the underlying product. In particular, we predict that in highproduct-risk situations, the positive crowdfunding effect might reverse. Marketing scholars often define perceived risk in terms of both perceived likelihood and severity of potential negative consequences associated with product purchase, use, and consumption (Cunningham 1967; Dowling and Staelin 1994).

<sup>&</sup>lt;sup>2</sup> Our interviews further suggest that consumers consider this inequality to be what economists refer to as "unjustified equality," where equal opportunities are not offered and outcomes are not determined by effort but by extraneous factors (Alesina and Angeletos 2005). Their narratives are also consistent with prior research suggesting that most people exhibit egalitarian motives and a general preference for reducing inequality (e.g., Blake et al. 2015; Dawes et al. 2007) as well as with evidence indicating that a desire for equality is deeply rooted in the evolutionary path of humankind (for reviews, see Aoki, Yomogida, and Matsumoto [2015] and Rilling and Sanfey [2011]).

Prior research has established perceived risk as a key factor in determining consumer behavior (e.g., Bettman 1973; Cox and Rich 1964; Erdem, Zhao, and Valenzuela 2004). One important way in which risk affects consumers is that it modifies consumers' information processing when forming attitudes about products and making purchase decisions (Dowling and Staelin 1994; Gürhan-Canli and Batra 2004; Petersen and Kumar 2015). For example, when consumers perceive high product risk, they tend to evaluate alternatives more carefully (Dowling and Staelin 1994); accordingly, they might be also more cautious when evaluating products that are crowdfunded.

We expect that high-product-risk situations will raise questions about the integrity of the crowdfunding model, with resulting negative consequences for consumers' interest in crowdfunded products. That is, when making purchase decisions for high-risk products, the potential shortcomings of a crowd of individual amateur investors in picking and financing the "right" project (compared with professionals such as venture capitalists or bank loan officers) is likely to become more salient. In high-product-risk purchase domains, where the role of expertise is often paramount, consumers may believe that a crowd of amateur investors lack the required abilities to adequately assess the quality of a product or project.

Likewise, disadvantages attributed to the crowdfunded firms (e.g., in terms of their limited size and resources) might further prompt consumers to question the firms' ability to undertake a robust new product development process. Put differently, the underdog status of crowdfunded firms (discussed previously as a potential advantage) might turn into a disadvantage for high-risk domains. This line of reasoning aligns with narratives obtained in our qualitative study. Several of our informants associated crowdfunded products with lower product quality. This typically occurred when informants referred to product domains where purchases were associated with high levels of risk, such as medical products (Interview #25). In such high-risk contexts, respondents associated crowdfunding with less professionalism and expertise in product development. For example, reduced planning, preparation, and product testing are believed to make such products more vulnerable to failure, which seems particularly troublesome for high-risk situations (Interviews #23 and #24). Our theorizing is also consistent with research documenting consumer preference for established and familiar options when making decisions under uncertain and stressful circumstances, because such options signal safety (e.g., De Vries et al. 2010; Litt et al. 2011; Muthukrishnan, Wathieu, and Xu 2009).

Taken together, we theorize that in high-risk domains, consumer preference for crowdfunded products will be reversed. In this context, consumers are likely to perceive crowdfunded products as lower quality. Indeed, we argue that the positive quality inference predicted for more regular, lower-risk product domains reverses in high-risk product domains, because observing consumers value professional experts (vs. "more mainstream consumers") more highly when judging the quality of the product or project. Thus, **H<sub>3</sub>:** The positive effect of crowdfunding on consumer product preference (H<sub>1</sub>) is moderated by perceived risk, such that the preference for crowdfunded products is reversed when consumers associate the product with high risk.

#### **Overview of Studies**

We test our predictions across seven studies. In Study 1, we validate the hypothesis that consumers prefer crowdfunded products (H<sub>1</sub>). Study 1a examines whether consumers prefer a product that is described as crowdfunded compared with a baseline condition that does not mention funding source details. We do this by using an incentive-compatible willingness-to-pay (WTP) measure as the dependent variable and digital notebooks as the product category. Adopting a consequential behavioral-choice design paradigm and using the context of backpacks, Study 1b tests whether consumers prefer crowdfunded products over products portrayed as funded by venture capital. Study 1c replicates the results in another product category (cameras) using a relative preference measure as the dependent variable and against a series of different control conditions (i.e., bank loan and self-financing). In particular, this study shows that the identified effect is specific to crowdfunding and not other funding source information. Study 2 tests our proposed quality and inequality accounts, postulated to underlie the focal crowdfunding effect (H<sub>2a</sub> and H<sub>2b</sub>), by measuring both mediators. Study 3 shows that perceived risk serves as a boundary condition for our focal crowdfunding effect (H<sub>3</sub>). Studies 4a and 4b further validate our inequality account by measuring and manipulating consumers' general attitude toward inequality  $(H_{2b})$ .

# Study 1: Consumers Prefer Crowdfunded Products

Study 1 tests  $H_1$  using different experimental designs, dependent variables, product contexts, and samples. While Study 1a maximizes the ecological validity of the manipulations, the goal of Studies 1b and 1c, respectively, is to provide a test setting characterized by high levels of internal validity.

#### Study I a

Method. Participants were 1,512 consumers ( $M_{age} = 31$  years; 44% female; Prolific).<sup>3</sup> Before starting, participants were informed about the incentive compatible nature of the experiment and the purpose of the study, which was to learn about their interest in a digital notebook. Participants were then assigned to one of two experimental conditions (crowdfunding vs. baseline). In both conditions, they were presented with a

<sup>&</sup>lt;sup>3</sup> We determined the sample size a priori based on our experience with this type of dependent variable from other projects and based on a small-scale pretest of this study (in estimating the desired sample size, we used power of .80, p < .01, and a safety buffer to maximize the chances to detect a true effect).

screenshot of a shopping website homepage featuring three products, including the focal product of a digital notebook. In the crowdfunding condition, we discreetly implemented our manipulation with a statement about crowdfunding in the text above the product (for details, see the Web Appendix). In the baseline condition, there was no respective funding information present. To maximize external validity, we took the crowdfunding signal from a real shopping website (thegrommet.com) that sells, among other things, crowdfunded products (including the ones shown to our study participants). Mimicking a real shopping experience, participants were then directed to the next page and presented with more information about the digital notebook (the crowdfunding signal in the treatment condition remained on this next page). In particular, participants were shown a color picture of a digital notebook, together with product-related information. In both conditions we included the actual product rating for the notebook (4.1 out of 5 Grommets, based on 299 reviews). In summary, our stimuli closely resembled the website's design and content, with the goal of providing high levels of external validity.

The dependent variable was participants' WTP for the digital notebook, which was elicited directly after product exposure. We employed a variant of the Becker, DeGroot, and Marschak (1964) procedure—an incentive-compatible value elicitation method, and a valid and reliable indicator of one's true WTP (e.g., Wertenbroch and Skiera 2002). Specifically, we used a two-staged measure: participants were first asked whether they were at all interested in making a bid for the product, and if so, they were asked to make their binding bid using a slider scale in US\$1 increments (US\$1-US\$20; participants who had no interest in the product were transferred to the next survey question and their WTP coded as zero). At the beginning of the study, participants were informed that their decisions would be binding if they were one of three lottery winners for US\$20. They were also informed that if they had the winning bid and it was greater than or equal to a randomly drawn price, they would receive the product at that random price and any leftover money (i.e., US\$20 minus price). However, if the bid was smaller than the random price, they would not receive the digital notebook but would collect the full lottery amount instead (US\$20). Next, on a separate page, all participants were asked to answer an attention check question: "To what extent do you think the statement 'this product was crowdfunded' is true?" (1 = "very false," and 7 ="very true"). In support of our manipulations, we found that participants in the treatment condition more strongly agreed with that statement ( $M_{crowdfunding} = 5.97, M_{baseline} = 4.15; F(1, 1, 510)$ = 530.79, p < .001, d = 1.18).

**Results and discussion.** An analysis of variance (ANOVA) with WTP as the dependent variable and funding source as the independent variable (crowdfunding vs. baseline) provided strong support for the predicted positive crowdfunding effect (H<sub>1</sub>). Participants were willing to pay about 21% more when the product was described as crowdfunded compared with when no funding source information was present (M<sub>crowdfunding</sub> = 8.57, M<sub>baseline</sub> = 7.11; F(1, 1,510) = 14.81, p < .001, d = .20). Means

and standard deviations for Study 1a and other studies are reported in the Web Appendix.

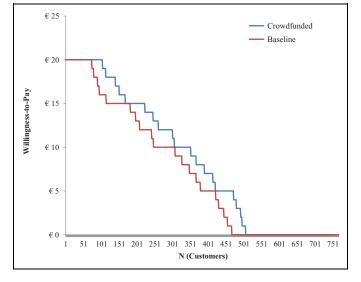
Three additional analyses provide support for the robustness of these results. First, we conducted a negative binomial regression analysis to account for a large number of zero values in our dependent variable (i.e., 36% of participants made a bid of zero), which returned substantively identical results and strong support for a positive crowdfunding effect (Wald  $\chi^2 = 11.59$ , b = .19, SE = .055 p < .001). Second, we used one's likelihood of making a bid (i.e., whether or not participants wanted to make a bid at all) as the dependent variable. Results of a logistic regression analysis show that consumers were more likely to bid for the notebook when it was described as crowdfunded compared with when no funding source information was present  $(68\% \text{ vs. } 61\%; \chi^2 = 8.14, b = .31, \text{SE} = .11, p = .004)$ . Third, we reran our main analysis for the subsample of participants who decided to make a bid (N = 971); results again are supportive of  $H_1 (M_{crowdfunding} = 12.64, M_{baseline} = 11.71; F(1, 969) = 6.70,$ p = .01, d = .17) (for details, see the Web Appendix).

Using an incentive-compatible WTP elicitation method, Study 1 a shows that consumers are willing to pay significantly more for the same product when it is described as crowdfunded. Figure 1 illustrates that the effect is not caused by a few outliers, but instead materializes across the entire WTP distribution. In a follow-up study, we conceptually replicated the focal effect using a more classic dependent variable (i.e., purchase intent) while keeping price constant (for details, see the Web Appendix).

#### Study 1b

Following the recommendations of Meyvis and Van Osselaer (2018), Studies 1b and 1c employed a direct comparison design. That is, participants were presented with two different products side by side, the only difference between conditions being the information regarding our independent variable—the funding source of the product. This design is recommended for increasing statistical power.

Method. Participants were 390 students who participated in a lab study in exchange for course credit ( $M_{age} = 20.44$  years; 51% female). Before starting, participants learned that they would have the chance to actually win the pro backpack of their choice during the study. Participants were introduced to two start-ups labeled Start-up A and Start-up B and informed that the real brand names were blinded. They were also informed that both start-ups recently raised comparable amounts of funding to launch their backpacks but differed in terms of funding source. One start-up was described as crowdfunded, whereas the other start-up was funded by venture capital. Half the participants were assigned to a condition in which Start-up A's backpack was described as crowdfunded and Start-up B's backpack as venture capital funded; the other half were assigned to a condition in which Start-up A's backpack was described as venture capital funded and Start-up B's backpack as crowdfunded. Next, participants were shown color pictures of two different backpacks (taken from the Indiegogo



**Figure 1.** WTP for the digital notebook as a function of whether the product is crowdfunded or not (Study 1).

crowdfunding platform). The two backpacks differed in terms of functionality and design as well as size and weight (for details, see the Web Appendix). Because our experimental design (product flip) enabled us to effectively control for product differences, any difference in terms of the dependent variable is attributable to the focal funding source manipulation. We captured product choice, our dependent variable, by asking participants which of the two backpacks they would choose if they won the lottery. When the study was complete, we randomly determined a winner and sent them the backpack.

Results and discussion. A logistic regression with actual product choice as the dependent variable and funding source as the independent variable demonstrates that consumers have a significantly stronger preference for the backpack when it is described as crowdfunded ( $\chi^2 = 6.47$ , b = .52, SE = .20, p = .011). For both backpacks, the choice share for the crowdfunded alternative was higher than for the venture capital funded alternative: 54% (backpack A) and 59% (backpack B). Put differently, participants were significantly more likely to choose Start-up B's backpack when it was described as crowdfunded than when it was described as venture capital funded (59% vs. 46%); likewise, Start-up A's backpack was significantly more likely to be chosen when it was described as crowdfunded than when it was described as venture capital funded (54% vs. 41%).

#### Study I c

In Study 1c, we aimed to replicate the crowdfunding effect in another product category (cameras) using a relative preference measure as the dependent variable and a different study population (Amazon Mechanical Turk [MTurk]; N = 302); importantly, we also used a series of different control conditions. In particular, we wanted to assess the possibility that (negative) attitudes toward venture capitalists might, at least

in part, have driven the effect obtained in Study 1b. We therefore included three alternative funding sources: venture capital, bank loan, or self-financing (between-subjects). The study again utilized a direct comparison design (i.e., Startup A crowdfunded and Start-up B alternative funding source vs. Start-up A alternative funding source and Start-up B crowdfunded). Participants indicated their product preference on a seven-point scale (1 = "I would prefer to purchase theproduct from Start-up A," and 7 = "I would prefer to purchase the product from Start-up B"). Findings were affirmative: participants reported a significantly stronger preference for Start-up B's camera when it was described as crowdfunded (M = 4.42) than when it was described as funded by venture capital, a bank loan, or self-financing (M = 3.50; F(1, 296) =15.37, p < .001, d = .45). Critically, the 2 (product flip)  $\times$  3 (alternative funding source) interaction proved insignificant (p > .20), suggesting that the focal crowdfunding effect emerges when pitted against all three control conditions (for details, see the Web Appendix).

Study 1 provides converging evidence in support of  $H_1$ : presenting a product as "crowdfunded" increases consumer preference for that product, ceteris paribus. We obtained this effect against different control conditions, utilizing different experimental paradigms, dependent variables, and study populations. After having established the positive crowdfunding effect, we next turn to testing the underlying processes ( $H_{2a}$  and  $H_{2b}$ ).

# **Study 2: Testing the Mediators**

Study 2 aims to test our dual-process account, contending that the positive crowdfunding effect is attributable to positive inferences about (1) the quality of crowdfunded products  $(H_{2a})$  and (2) the ability of crowdfunding to drive out inequality in the marketplace  $(H_{2b})$ .

#### Method

Participants were 200 consumers ( $M_{age} = 39$  years; 49% female; Prolific). They were first asked to imagine that they were looking to purchase a new camera and had narrowed their alternatives to two options. Next, ostensibly using the "compare" function of a real shopping website (The Grommet), they were presented two cameras side by side-Luna and MySighttogether with various product-related information that consumers are typically exposed to while shopping (i.e., product picture, product-related information, product rating, price, and consumer ratings and reviews; for details, see the Web Appendix). To describe the products' funding sources, we used a slightly modified version of an actual crowdfunding cue from The Grommet: "The people decided, and put their money behind that decision. The following product was brought to life thanks to funding received from consumers in a crowdfunding campaign." The description for venture capitalist funding read as follows: "The venture capitalists (VCs) decided, and put their money behind that decision. The following product was brought to life thanks to funding from venture capitalists." Participants were randomly assigned to one of the two conditions. In one condition the product Luna was described as crowdfunded and the product MySight as venture capital funded, whereas in the other condition Luna was described as venture capital funded and MySight was described as crowdfunded. Everything else—including consumer ratings and reviews, product price and information—was identical between the two conditions.

Purchase intention, our dependent variable, was measured using a three-item scale ( $\alpha = .94$ ): (1) "I would be willing to buy this product," (2) "I would be likely to purchase this product," and (3) I am interested in buying this product" (1 = "More true for Luna," and 7 = "More true for MySight"). The mediators were captured using three-item scales with the same anchors; for perceived product quality: (1) "I think this product is of high quality," (2) "This product appears to be good in terms of functionality," (3) "This product is likely very useful to consumers" ( $\alpha = .92$ ); for consumer motivation to help reduce inequality in the market: (1) "Purchasing this product would help reduce inequality in the marketplace," (2) "With purchasing this product, I would signal that I value equality in the market," and (3) "By purchasing this product, I would support the idea that every firm should have equal opportunities to rise up and prosper" ( $\alpha = .94$ ).<sup>4</sup>

#### Results and Discussion

We started our analyses by assessing convergent and discriminant validity of our dependent and process measures using the criteria set forth by Fornell and Larcker (1981). For each of the three constructs, average variance extracted (AVE) was higher than the traditional cutoff value of .5 (ranging from .67 to .73), providing evidence for convergent validity of the measures. In addition, AVEs were greater than the squared correlation between each pair of constructs (the largest of which was .45), which confirms that the constructs were empirically distinct from each other.<sup>5</sup>

An ANOVA with purchase intention as the dependent variable and funding source as the independent variable again produced strong support for H<sub>1</sub>: participants demonstrated a significantly stronger purchase intention for the MySight camera when it was described as crowdfunded (M = 4.47) as opposed to venture capital funded (M = 3.36; F(1, 198) = 30.42, p < .001, d = .78). We obtain a similar pattern of effects for our mediators. First, participants perceived the quality of MySight as significantly higher when it was described as crowdfunded (M = 3.80; F(1, 198) = 6.95, p = .009, d = .38). This effect is particularly notable because participants in both conditions saw the same product descriptions and were also exposed to the same explicit consumer ratings and comments. Second, participants felt

significantly more strongly that purchasing MySight would reduce inequality in the marketplace when it was described as crowdfunded (M = 4.96) versus venture capital funded (M = 2.95; F(1, 198) = 131.64, p < .001, d = 1.62).

To formally test for mediation, we used bootstrapping procedures (Hayes 2013, Model 4) and tested a model with purchase intention as the dependent variable, funding source as the independent variable, and perceived product quality and social inequality as mediators. We find both indirect effects to be significant, in support of H<sub>2a</sub> and H<sub>2b</sub>, respectively (perceived product quality: 95% confidence interval [CI<sub>95%</sub>] = [.08, .53]; consumer motivation to help reduce inequality in the market: CI<sub>95%</sub> = [.35, 1.16]).

In full support of  $H_{2a}$  and  $H_{2b}$ , Study 2 shows that inferences regarding product quality and marketplace inequality are strong drivers of the positive crowdfunding effect identified. In a follow-up study (N = 601;  $M_{age} = 35$  years; 48% female; Prolific) that experimentally manipulated product quality, we provide additional evidence of the importance of both product quality and consumer motivation to help reduce inequality in driving the crowdfunding effect. Importantly, the inequality process mechanism (H<sub>2b</sub>) remains robust even if quality is held experimentally constant (for details, see the Web Appendix). In Study 3, we examine the moderating role of risk to better understand the domains wherein consumer preference for crowdfunded products is likely to replicate versus not.

# Study 3: Risk as a Central Boundary Condition

In Study 3, we test whether perceived product risk serves as a central boundary condition for our focal crowdfunding effect. In particular, we expect that the preference for crowdfunded products will be reversed when consumers associate the purchase decision with high product risk ( $H_3$ ). Note that we predict this reversal due to our assertion that high-risk domains will cause consumers to no longer see crowdfunded products as high quality (but, rather, low quality).

#### Method

We recruited 1,003 consumers ( $M_{age} = 27$  years; 40% female; Prolific) in a 2 (funding source: Start-up A [Clinge] crowdfunded and Start-up B [Ropesy] venture capital funded, or vice versa) × 2 (physical product risk: high vs. low) between-subjects experimental design. Physical product risk was manipulated by instructing participants to imagine wanting to purchase a climbing rope (high product risk) versus a battle rope (low product risk). We considered climbing rope to be a highrisk product purchase because the product's failure to work properly during use (e.g., due to poor product quality or product malfunction) could have severe consequences for one's physical health (injury or even death), whereas such consequences would be relatively minor in the case of battle rope (battle rope is used for fitness exercise on the ground).

<sup>&</sup>lt;sup>4</sup> As a control variable, we further captured perceived underdog status (Kirmani et al. 2017). As detailed in the Web Appendix, our hypothesis tests  $(H_{2a-b})$  hold after we add perceived underdog status as a third mediator.

<sup>&</sup>lt;sup>5</sup> Perceived product quality is positively correlated with inequality (r = .33, p < .001); the shared variance of the constructs is 11%.

Mimicking the "compare" function of real shopping websites, two ropes were presented side by side-Clinge and Ropesytogether with product-related information (e.g., picture, info, price, consumer ratings; see the Web Appendix for details). Also contained within this information were details about the funding source. Specifically, the description of crowdfunding stated, "The following product was brought to life thanks to funding received from consumers in a crowdfunding campaign." The description for venture capitalist funding read, "The following product was brought to life thanks to funding from venture capitalists." We manipulated the funding source by randomly assigning participants to one of these two conditions. In one condition, the product Clinge was described as crowdfunded and the product Ropesv as venture capital funded, whereas in the other condition Ropesy was described as crowdfunded and Clinge was described as venture capital funded.

The dependent variable of the study was purchase intention, which was measured using the same three items as in Study 2 ( $\alpha = .94$ ). Also using the same three items from that study, we measured perceived product quality ( $\alpha = .89$ ) and consumer motivation to help reduce inequality ( $\alpha = .91$ ) as mediators. As a check for the focal physical risk manipulation, participants completed the following item: "I think the physical risk if the rope does not work as intended is ..." (1 = "very low," and 7 = "very high").

#### Results and Discussion

We started with several preliminary analyses to assess the validity of our measures and the effectiveness of our manipulation. First, we examined convergent and discriminant validity of our purchase intention, perceived quality, and motivation to help reduce inequality measures using the Fornell and Larcker (1981) criteria. The AVEs of the constructs were higher than the traditional cutoff value of .5 (i.e., between .82 and .89), providing evidence for convergent validity of the measures. Moreover, AVEs were greater than the squared correlation of constructs (between .00 and .53), confirming discriminant validity.

Second, a 2 (funding source: Start-up A [Clinge] crowdfunded and Start-up B [Ropesy] venture capital funded, or vice versa)  $\times$  2 (physical risk: high vs. low) ANOVA on the manipulation check measure first reveals, as intended, a significant main effect of risk (F(1, 999) = 505.08, p < .001, d = 1.42): The climbing rope ( $M_{high risk} = 5.66$ ) was associated with significantly higher physical risk than the battle rope  $(M_{low risk} = 3.27)$ . While the funding source factor was not significant (F = 2.24, p = .14, d = .09), we also observed a significant interaction effect (F = 6.24, p = .013). A closer investigation of this interaction, however, shows a similar pattern of results in both funding source conditions. Specifically, when Ropesy was described as crowdfunded, participants perceived the high-risk condition (M = 5.61) to be significantly riskier than the low-risk condition (M = 3.48; F(1, 999) = 7.60, p < .001, d = 1.27). Likewise, when Ropesy was described as venture capital funded, participants perceived a greater level of risk in the high-risk condition (M = 5.71) than the low-risk condition (M = 3.05; F(1, 999) = 7.60, p < .001, d = 1.57). Thus, both contrast effects are strong and significant, but the latter is somewhat more pronounced. We attribute this unexpected effect to the large sample size. Taken together, we concluded that the manipulation worked as intended.

A 2  $\times$  2 ANOVA on product preference first revealed two significant main effects for the funding source  $(M_{Ropesy \ crowdfunded} = 4.15, M_{Ropesy \ VC \ funded} = 3.89;$ F(1, 999) = 11.93, p = .001, d = .15) and the risk manipulations ( $M_{high risk} = 4.20$ ,  $M_{low risk} = 3.83$ ; F(1, 999) = 21.21, p < .001, d = .25). Importantly, the analysis also produced the predicted significant interaction effect (F(1, 999) = 198.03, p < .001). As expected, we found a positive and significant crowdfunding effect in the low-physical-risk condition: participants demonstrated a significantly stronger purchase intention for the Ropesy product when it was described as crowdfunded (M = 4.61) compared with when it was described as venture capital funded (M = 3.03; F(1, 999) = 146.36, p < .001, d = 1.19). In contrast, this effect fully reversed in the high-physical-risk condition: purchase intention for the Ropesy product was significantly lower when it was described as crowdfunded (M = 3.75) than when it was described as venture capital funded (M = 4.71; F(1, 999) = 59.30, p < .001, d = .64) (see Figure 2).

A 2  $\times$  2 ANOVA on product quality revealed a significant main effect of the funding source manipulation  $(M_{Ropesy \ crowdfunded} = 4.12, M_{Ropesy \ VC \ funded} = 3.95; F(1, 1)$ (999) = 7.84, p = .005, d = .14) and an insignificant main effect of the risk manipulation (F(1, 999) = .01, p = .92, d = .02). As anticipated, we also obtained a significant interaction effect (F(1, 1.001) = 110.96, p < .001). Follow-up contrasts showed a positive and significant crowdfunding effect in the lowphysical-risk condition: participants attributed significantly higher product quality to the Ropesy product when it was described as crowdfunded (M = 4.56) compared with when it was described as venture capital funded (M = 3.54; F(1, 999) =84.71, p < .001, d = .85). In contrast, this effect fully reversed in the high-physical-risk condition: perceived quality of the Ropesy product was seen as significantly lower when it was described as crowdfunded (M = 3.74) than when it was described as venture capital funded (M = 4.33; F(1, 999) = 31.46, p < .001, d = .49).

Contrasting this pattern of effects, a 2  $\times$  2 ANOVA on equality revealed only a significant main effect of the funding source manipulation (M<sub>Ropesy crowdfunded</sub> = 4.84, M<sub>Ropesy VC funded</sub> = 3.01; F(1, 999) = 605.89, *p* < .001 d = 1.55); the main effect of the risk factor and the interaction term were insignificant (Fs < 2.48, *p*s > .115).

To formally test for moderated mediation, we used bootstrapping procedures (Hayes 2013, Model 8). We tested a model with purchase intention as the dependent variable, funding source as the independent variable, perceived product quality and motivation to help reduce inequality as mediators, and our risk manipulation as the moderator. The results show significant indirect effects of the funding source manipulation on purchase intention through both perceived product quality and

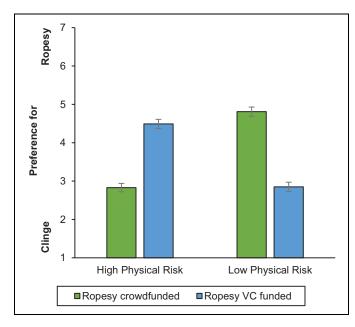


Figure 2. The crowdfunding effect as a function of perceived risk (Study 3).

motivation to help reduce inequality in the market, across both risk conditions. However, differences between the conditional indirect effects were statistically significant for perceived product quality ( $CI_{95\%} = [-1.56, -1.09]$ ) but not for motivation to help reduce inequality ( $CI_{95\%} = [-.004, .05]$ ). The results therefore provide evidence for moderated mediation through perceived product quality.

In summary, Study 3 provides strong evidence in support of H<sub>3</sub>: perceived risk regarding the underlying product domain constitutes a boundary condition of the positive crowdfunding effect established in Studies 1 and 2. When the product is associated with low risk, the positive crowdfunding effect unfolds as previously documented. However, the effect fully reverses in cases where the product is associated with high risk: in such instances, consumers opt against crowdfunded products because they no longer perceive them to be high quality but instead regard them as low quality. Interestingly, we find that the inequality account works independently of risk: supporting a crowdfunded project in order to (re)establish marketplace equality seems to be a general aspiration, ceteris paribus. Finally, we note that a follow-up study (N = 1,001,  $M_{age} = 30$  years, 47%female, Prolific) showed that preference reversal in high-risk contexts is not limited to physical product risk but also generalizes to economic risk (i.e., the risk a consumption situation poses to one's personal finances; for example, a defective product might impair one's economic well-being more in case the consumer investment was higher rather than lower; for details, see the Web Appendix).

In our final two studies (4a and 4b), we focused on the equality mechanism using a moderation approach. To our knowledge, the identification of the equality mechanism in this context is novel. Indeed, the identification of the inequality account broadens our understanding of perceptions of inequality within society by moving beyond race, gender, and nationality, among other factors.

# Study 4: A Closer Look at the Inequality Account

As suggested by social dominance theory, people differ in their acceptance of ideologies that promote societal inequality and social hierarchies (e.g., Pratto et al. 1994; Sidanius, Pratto, and Bobo 1994). Many individuals across a wide range of societies support the idea that members of some dominant groups should have access to the "good things" in life (e.g., higher education, high income, good health care), whereas members of other subordinate groups should not (Sidanius and Pratto 2011). This difference depends on an individual's social dominance orientation preference for group-based hierarchy and inequalitywhich in itself largely depends on how people were socialized early in their lives (Duckitt 2001). While classical social dominance theory suggests that social dominance is reflected in the way people legitimize the dominance of specific social groups, Sidanius et al. (2004) speculated that people's support for group-based inequality and dominance could also be reflected in their support for institutions. It thus seems plausible that people who are social dominance oriented are more accepting and even supportive when "powerful institutions including major financial organizations (e.g., banks, investment houses, insurance companies)...allocate resources in ways that create and maintain group dominance" (Sidanius et al. 2004, p. 851), because such corporate behavior is consistent with their ideology. People low in social dominance orientation, in contrast, should be more likely to endorse institutions that "disproportionately allocate resources for the benefit of subordinates-such as civil and human rights organizations, public and private welfare agencies, and the public defender's office," because these attenuate hierarchies and bring more equality to the system (Sidanius et al. 2004, p. 851).

Therefore, we predict that consumer preference for crowdfunded products will be attenuated when consumers are high in social dominance orientation. Providing conceptual support for the inequality account we identify (i.e.,  $H_{2b}$ ), we expect that consumers with a low general preference for social inequality will be more inclined to reduce inequality in the marketplace, which could be achieved through their purchase of crowdfunded products. In contrast, consumers who are more inclined to accept social inequality should be less concerned about a democratic marketplace or reducing any power imbalance therein; they should therefore be less likely to purchase crowdfunded products. We test this prediction in Studies 4a and 4b by measuring and manipulating consumers' general preference for inequality, and testing whether this preference moderates the crowdfunding effect.

#### Study 4a

In Study 4a, we test whether the preference for crowdfunded products will be moderated by consumer acceptance of social inequality. In line with prior research, we operationalize differences in preference for social inequality by using social dominance orientation. This is conceptualized as an individual-level difference measure, representing preference for group-based dominance hierarchies in which dominant groups oppress subordinate groups (Ho et al. 2015; Jost et al. 2003; Pratto et al. 1994).

Method. Participants (N = 305;  $M_{age} = 35$  years; 48% female; MTurk) were exposed to two start-ups labeled Start-up A and Start-up B; they were informed that both start-ups had recently raised a comparable amount of funding to bring their product to market but had differed in terms of funding source. Participants were randomly assigned to one of our two funding source conditions (funding source: Start-up A crowdfunded and Start-up B venture capital funded, or vice versa). After being exposed to color photos of two different cameras, they indicated their product preference on a seven-point item (1 = "I would prefer to purchase theproduct from Start-up A," and 7 = "I would prefer to purchase the product from Start-up B"). In addition, participants were asked to complete an eight-item social dominance orientation scale, which was used to operationalize preference for social inequality (Pratto et al. 1994;  $\alpha = .96$ ). Example items included "An ideal society requires some groups to be on top and others to be on the bottom" and "No one group should dominate in society" (1 = "Strongly")oppose," and 7 = "Strongly favor"; for details, see the Web Appendix). To avoid order effects, we administered the scale either before product exposure or after the dependent variable.

Results and discussion. To test our predictions, we ran a hierarchical regression analysis with product preference as the dependent variable. Preference for social inequality measure, dummycoded funding source (0 = Start-up A crowdfunded and Startup B venture capital funded, 1 =Start-up B crowdfunded and Start-up A venture capital funded), and the respective interaction term (added as a second step) served as the independent variables. Results first revealed two significant main effects: participants indicated a stronger preference for the product of Start-up B (1) when it was described as crowdfunded (b = .86, SE = .21, p < .001) and (2) when the participant scored higher on social dominance (b = .16, SE = .11, p = .05). Consistent with our theorizing, the analysis further revealed a significant interaction effect between funding source and preference for social inequality (b = -.40, SE = .16, p = .012), indicating that the preference for crowdfunded products is stronger with participants who are less accepting of social inequality.<sup>6</sup> Indeed, a floodlight analysis using the Johnson-Neyman technique (Hayes 2013) shows that the crowdfunding effect is significant only for participants who scored low on the social dominance orientation scale (i.e., lower than or equal to 3.32; these are 202 [out of 305] participants). However, for participants who scored higher on social dominance orientation, the crowdfunding effect was not significant (and, interestingly, was directionally negative; see Figure 3).

#### Study 4b

In Study 4b, we aim to extend the findings from Study 4a by manipulating (rather than measuring) the focal moderator variable to establish causality.

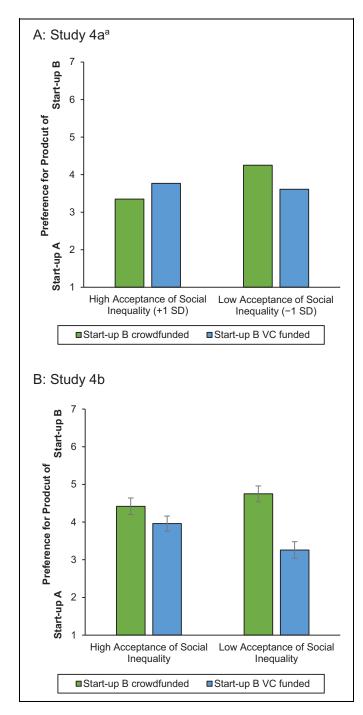
Method. Participants (N = 406;  $M_{age} = 36$  years; 44% female; MTurk) were randomly assigned to conditions in a 2 (funding source: Start-up A crowdfunded and Start-up B venture capital funded, or vice versa)  $\times 2$  (acceptance of social inequality: high vs. low) between-subjects experimental design. They were asked to carefully read one of two different versions of an ostensible New York Times article, designed to prime high versus low acceptance and support of social inequality. Specifically, in the highacceptance-of-social-inequality condition, participants read an article about a new scientific endeavor that found positive effects of social hierarchy for society. Participants in the low-acceptanceof-social-inequality condition read the same article with one key difference: in this version, the scientific endeavor reported the negative effects of social hierarchy (for details, see the Web Appendix). After reading the article, participants were asked to summarize its main points, and their summaries were consequently used as a reading check.<sup>7</sup> Participants were then asked to complete the same scale measuring social dominance orientation as employed in Study 4a, which served as a manipulation check. Participants subsequently performed some filler tasks (i.e., identifying the part that stands out the most in a series of pictures unrelated to the focal study). Next, in a purportedly unrelated study, participants completed the same product preference study as in Study 4a.

**Results and discussion.** The results of a 2 × 2 ANOVA on the manipulation check measure (i.e., social dominance orientation scale) revealed that participants in the high-acceptance-of-social-inequality condition scored significantly higher (M = 2.86) than those in the low-acceptance-of-social-inequality condition (M = 2.36; F(1, 334) = 9.72, p = .002, d = .34). Neither the main effect of the funding source nor the two-way interaction were significant (ps > .20). These results indicate that our manipulation was effective.<sup>8</sup>

<sup>&</sup>lt;sup>6</sup> Results remain robust if we add the order of measurement of participants' social dominance orientation (before product exposure or after the dependent variable) as an additional factor to the model; while the focal interaction remains significant (b = -.41, SE = .16, p = .010), the order of measurement did not affect it (b = -.28, SE = .23, p = .227).

<sup>&</sup>lt;sup>7</sup> Seventy-two participants failed this check. Participants who copy and pasted, wrote completely irrelevant information, or did not mention anything related to social hierarchy were excluded from further analysis. Thus, the final sample consisted of 334 participants. We determined this screening criterion prior to data collection.

<sup>&</sup>lt;sup>8</sup> Social dominance orientation scales are characterized by low grand means and small variances. Across 14 studies in the seminal article of Pratto et al. (1994), the grand mean of the scale was 2.74 and the average variance was .22. Accordingly, it seems that relatively small differences in the scales (e.g., half-scale point) can discriminate between high and low levels of social dominance orientation.



**Figure 3.** The crowdfunding effect as a function of one's preference for social inequality (Studies 4a and 4b).

<sup>a</sup>High and low levels for acceptance of social inequality indicate the values at  $\pm 1$  SD from the mean, respectively.

A 2 × 2 ANOVA on product preference revealed a significant effect of the funding source factor: participants demonstrated a significantly stronger preference for the product of Start-up B when it was described as crowdfunded (M = 4.59) as opposed to venture capital funded (M = 3.64; F(1, 332) = 20.77, p < .001, d = .48). Whereas the impact of the acceptance of social inequality factor on product preference

was not significant (F(1, 332) = .75, p = .39, d = .07), we found, most critically, a significant interaction effect (F(1, 332) = 5.79, p = .017; see Figure 4). In line with our theorizing, we found a positive and significant crowdfunding effect in the low-acceptance-of-social-inequality condition (M<sub>start-up</sub> B crowdfunded = 4.75, M<sub>start-up</sub> B VC funded = 3.26; F(1, 332) = 23.38, p < .001, d = .77). However, this effect was not significant in the high-acceptance-of-social-inequality condition (M<sub>start-up</sub> B crowdfunded = 4.42, M<sub>start-up</sub> B VC funded = 3.96; F(1, 332) = 2.39, p = .123, d = .23).

By identifying a moderation effect, Studies 4a and 4b provide additional evidence that consumer motivation to help reduce inequality is indeed a key mechanism underlying the identified crowdfunding effect. Consistent with our theorizing, consumers who are (or are primed to be) less accepting of social inequality were more responsive to crowdfunded products; that is, these participants demonstrated a stronger preference for the product when it was portrayed as crowdfunded. In contrast, those who are (or are primed to be) more accepting of social inequality did not show a heightened preference for crowdfunded products.

# **General Discussion**

More and more firms are turning to crowdfunding to overcome one of their greatest challenges: accessing the financial capital needed to bring their products to life (Mollick 2014). Researchers from diverse fields including finance, economics, entrepreneurship, information systems, and marketing have recently shown a strong interest in understanding the dynamics of crowdfunding. Most of this research considers crowdfunding primarily as an online community that can be used as a funding source. In this article, we take a different perspective by focusing on the demand side of crowdfunding. That is, we address how the knowledge that a product is crowdfunded influences the behavior of observing, nonparticipating consumers. We document that crowdfunding has an edge over alternative funding sources because of its psychological effects on consumers. Our research provides a new perspective by combining finance and marketing. Whereas funding decisions have been typically viewed and assessed on the basis of financial and economic considerations alone, this article shows that methods of financing have important marketing implications as well. If taken into consideration, these implications could be leveraged for marketing purposes and significantly impact consumer support for the brand.

## Theoretical Contributions

Our work offers several important contributions to the literature. First and foremost, we provide causal evidence for a positive crowdfunding effect: observing, nonparticipating consumers demonstrate a greater preference, higher WTP (elicited in an incentive-compatible fashion), and stronger purchase intentions for crowdfunded products over products that use alternative entrepreneurial financing options. It is noteworthy that the focal crowdfunding effect can be observed when objective product characteristics are kept constant. Our studies span a wide range of different product categories and samples, highlighting the robustness and relevance of the focal effect (Studies 1a-1c).

Second, we find support for our proposed dual-process framework: consumer preference for crowdfunded products is driven by (1) product quality inferences—consumers use the crowdfunded cue to make inferences regarding product quality, and (2) inequality inferences—consumers believe that purchasing crowdfunded products helps reduce inequality in the marketplace (Study 2).

Third, we introduce a novel and important boundary condition that moderates consumer preference for crowdfunded products. We document that the positive crowdfunding effect is reversed for products that are associated with high risk (Study 3). Specifically, we show that the positive quality inference observed for lower-risk products reverses in a high-product-risk context. We opine that this reversal is driven by a preference for signals from knowledgeable professionals (as opposed to mainstream consumers) in these high-risk product domains. This moderator variable may help reconcile the often polarized views regarding the value of crowdfunding identified in the marketing and innovation literature (e.g., Blaseg, Cumming, and Koetter 2020; Mollick and Kuppuswamy 2014).

Fourth, we find that consumers believe supporting the concept of crowdfunding by buying crowdfunded products reduces inequality in the marketplace. Reinforcing this insight, we find that the focal crowdfunding effect is stronger among consumers who are fundamentally against social inequality (Study 4a) or who are experimentally primed to be so (Study 4b). These findings not only advance our understanding of crowdfunding but also contribute to research on inequality which has previously focused predominantly on social and economic inequality (e.g., Jost 2006; Norton and Ariely 2011; Starmans, Sheskin, and Bloom 2017). We argue and demonstrate empirically that the concept of inequality can extend to the marketplace and affect consumer preferences. Thus, our work introduces the concept of marketplace inequality in understanding consumer product preference, which we believe is of interest to both marketing academics and practitioners.

In parallel, our research also advances social dominance theory, which has been primarily used to understand various forms of discrimination or oppression in society (Sidanius and Pratto 2011). We contribute to social dominance theory by empirically documenting that people's preference for hierarchies and social inequality refers not only to social groups but also to marketplace institutions, and that such inequality concerns affect consumption decisions. Prior research has shown that social dominance orientation can predict beliefs, attitudes, and lifestyle choices (Ho et al. 2015; Pratto et al. 1994), but research on how social dominance orientation affects consumption decisions has been scarce and mostly correlational in nature (for an exception, see Ordabayeva and Fernandes [2018]; for an overview, see Jung and Mittal [2020]). We contribute to this line of research by documenting causal evidence as to how differences in consumers' social dominance orientation can affect consumer preference for products that are associated with democracy and equality (i.e., crowdfunding).

In addition to implications for social dominance theory, which focuses on perceptions at the societal level, our findings also have implications for the literature on fair market ideology and market efficiency. In contrast to the common assumption that most people consider the economic system highly legitimate and fair (Jost et al. 2003), our findings point to consumer discontent with market function. The findings also suggest that instead of engaging in system justifying tendencies (Jost and Hunyady 2005), consumers are driven to act-"correcting" the difference in terms of their estimation of the market and opinions as to how it should be. One explanation for this divergence could be the increasing prevalence of inequality over the past few decades (Piketty and Saez 2014; Ravallion 2014). Indeed, policy makers and academics have named inequality as one of the defining societal challenges of our age (Hauser and Norton 2017; Starmans, Sheskin, and Bloom 2017)-a view shared by the general public, as depicted in a report by Pew (2014): Americans and Europeans consider inequality to be the greatest threat to the world, even more so than some of the major challenges faced by humanity today, such as fatal diseases and climate change.

Finally, our research offers a new perspective on the underdog literature by introducing the idea of crowdfunding as a signal of underdog status. For marketers, communicating that a brand is crowdfunded might be a more subtle and unique way to indicate a brand's underdog status—and thus gain support from consumers—compared with other strategies for conveying brand origin (Paharia, Avery, and Keinan 2014).

### Crowdfunding Versus Alternative Crowd-Based Models

While some of the product-related inferences we identified are unique to crowdfunding, others seem to also emerge with other crowd-based models. For example, research has shown that consumers believe crowdsourced products (i.e., new products based on user ideas) are more innovative and address their needs more effectively (Nishikawa et al. 2017; Schreier, Fuchs, and Dahl 2012). However, it has also been shown that the positive downstream effects of crowdsourcing observed among nonparticipating consumers hold only for relatively simple products. If the underlying task or product category is perceived as more complex, the focal effects are attenuated or even reversed (Schreier, Fuchs, and Dahl 2012; for additional moderators, see also Paharia and Swaminathan [2019] and Thompson and Malaviya [2013]). This may not necessarily be the case with crowdfunding, however. Indeed, the product categories tested herein are relatively technically advanced (e.g., digital notebook, digital camera). To more explicitly address whether the crowdfunding effect documented in this research is appreciably persistent in this regard, we conducted a follow-up study (N = 242, MTurk) wherein we experimentally contrasted the crowdfunding effect with a potential crowdsourcing effect in the context of a fairly technical consumer product: technical diving gear. Findings indeed revealed that in this product context, the crowd*funding* effect is significantly stronger than the comparative crowd*sourcing* effect (for details, see the Web Appendix). Against this background, we conclude that, at least for products that are not considered high risk, crowdfunding might overcome some of the established caveats of alternative crowd-based models such as crowdsourcing.

Our research might also be relevant for understanding crowd-based phenomena beyond the crowdfunding realm; for instance, our findings could shed light on the recent GameStop phenomenon, in which a crowd of "mainstream" consumers invested in a video game retailer that was under attack from short-selling hedge funds (see, e.g., Ortutay and O'Brien 2021). Beyond the economic considerations involved, it is possible that ideological considerations—such as the aim to support a falling underdog or increase inequality in the marketplace, as observed in our study—could have motivated consumers' GameStop investment behavior. Our research might offer a starting point for understanding this and related crowd-based phenomena in the domain of finance.

#### Substantive Implications

From a substantive standpoint, our findings are valuable to firms that rely on crowdfunding to introduce their products as well as to retailers that sell crowdfunded products. The insights generated here suggest that marketing a product as crowdfunded might positively impact both start-up and retailers' bottom lines. We therefore encourage such firms to proactively communicate to the broader consumer market that the crowd has been involved in funding their product. Some retailers seem to be aware of this potential benefit. For example, Amazon recently opened a Kickstarter product category, grouping and explicitly marketing all relevant products as crowdfunded to the general public ("Made on Kickstarter: Shop a wide range of Kickstarter projects backed by a passionate community"). However, we observe that many start-ups and retailers are not yet leveraging this angle and thus fail to harness the full marketing potential of crowdfunding. They could, for example, label their product packages, websites, and promotional materials to clearly and prominently convey the crowdfunding aspect. The caveat to these recommendations, however, is that the underlying product should not be characterized by high risk. In this situation, it might be preferable to downplay a product's crowdfunding history because the positive crowdfunding effect could reverse and cause a backfire effect on consumer demand.

Our insights regarding the effect's underlying process provide further value to marketing communication experts (e.g., the two identified inferences might be leveraged proactively by marketers). Should the target customer score high on social dominance orientation, our findings could provide a warning signal to marketers of crowdfunded products. In addition, our findings inform entrepreneurs' decision making when it comes to funding their ventures. Although entrepreneurs may have reason to seek alternative sources (e.g., venture capital funding might provide valuable guidance that can contribute to growth) (Drover et al. 2017), crowdfunding has an edge over said alternatives thanks to its psychological impact on the demand side of the market (i.e., potential future customers). Therefore, if an alternative funding source's input is limited to financial contribution, entrepreneurs might consider choosing crowdfunding to finance their ventures.

#### Limitations and Avenues for Future Research

Apart from consumers' social dominance orientation, there might be other, related individual characteristics that could predict consumer preference for crowdfunded products. For example, consumers with authoritarian tendencies-people who tend to oppress subordinate people (e.g., Eckhardt 1991; Sidanius et al. 2004)-may dislike crowdfunded products. In turn, it is also possible that consumers who tend to reject the establishment, system, authority, or mainstream culture might prefer crowdfunded products (Warren and Campbell 2014). Perceptions regarding the marketplace might also impact the strength of the crowdfunding effect; consumers who view the marketplace as fair and efficient (Chernev and Carpenter 2001; Jost et al. 2003) might be less inclined to choose crowdfunded products. Thus, further research is needed to more fully understand the impact of consumer characteristics and marketplace perceptions on preferences for crowdfunded products. In a similar vein, it seems promising to study contextual factors that may influence consumer preference for crowdfunded products. For example, scholars have identified several external factors that influence the perception of inequality as justified and, in turn, shape support for redistributive policies to reduce inequality (e.g., Brown-Iannuzzi et al. 2015; Chow and Galak 2012; Ordabayeva 2019; Ordabayeva and Fernandes 2017). Consequently, factors impacting justness of marketplace inequality could also influence preference for crowdfunded products.

Our research has established that the perceived risk associated with the underlying product is an important boundary condition. Other moderators with potential for future research include the competitive situation in the market, the resource mix required for production, or the firm size and history. For example, would consumers react similarly to a "crowdfunded" product if they learned that the underlying firm was a start-up (which received its chance via crowdfunding) versus an established firm that obtained financing for the underlying product via crowdfunding? Relatedly, how do consumers react to future products of the firm that are subsequently internally funded? That is, to what extent do consumers form inferences about the product versus the firm? Future research might also extend our investigation (focused on business-to-consumer markets) to industrial buyers operating in business-to-business markets. Would they react similarly? In this regard, it would be important to obtain additional insights on how and when to emphasize a product's

crowdfunding narrative, and for whom (e.g., for which target segments would such a cue be most effective)? Moreover, future research could also examine whether small contributions from a large crowd of backers generates a more powerful effect than large contributions from a small crowd of backers (see, e.g., Fan, Gao, and Steinhart 2020).

Furthermore, our research examined only reward-based crowdfunding, where crowdfunding participants receive an underlying product in return for their financial support. What happens to our focal crowdfunding effect if the incentives for crowdfunding participants change? Would our effect similarly hold if consumers participating in the crowdfunding of a given venture received formal equity stakes—as is the case with equity-based crowdfunding (Mollick 2014)? An initial exploration of this question (for details, see the Web Appendix) suggests that the crowdfunding effect does not significantly differ as a function of the crowdfunding format. Nonetheless, we encourage future researchers to further explore if, when, and how different types of crowdfunding might affect the magnitude of the crowdfunding effect reported in this research.

Finally, future research might also delve into questions surrounding the specificity of the crowdfunding context. Questions could include the following: Does the crowdfunding effect depend on the number and type of people involved in the crowdfunding? What role does the desired brand personality or positioning play in that space? For example, would the crowdfunding effect similarly emerge for luxury products or prestige brands targeted to the upper class? Answers to these and related questions might help provide a more comprehensive understanding of the crowdfunding phenomenon in general, and the crowdfunding effect documented in this research in particular.

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