How relationship norms and task complexity affect consumer perceptions of quality in crowdsourcing

Saleh Shuqair
0000-0003-3711-9219
University of Balearic Islands, Palma, Illes Balears, Spain

Márcia Maurer Herter
0000-0003-4014-4909
Advance/CSG, ISEG, Universidade de Lisboa, Rua do Quelhas 6, 1200-781 Lisboa, Portugal
marcia.herter@iseg.ulisboa.pt

Diego Costa Pinto
0000-0003-4418-9450
NOVA Information Management School (NOVA IMS), Campus de Campolide, Universidade Nova de Lisboa, 1070-312 Lisboa, Portugal

Anna S. Mattila
0000-0001-8872-5521
The Pennsylvania State University, Pennsylvania, USA

This is the peer reviewed version of the following article:

Shuqair, S., Herter, M. M., Pinto, D. C., & Mattila, A. S. (2024). How relationship norms and task complexity affect consumer perceptions of quality in crowdsourcing. International Journal of Consumer Studies, 48(3), 1-12. Article e13058. https://doi.org/10.1111/ijcs.13058

How Relationship Norms and Task Complexity Affect Consumer Perceptions of Quality in Crowdsourcing

ABSTRACT

Although prior research indicates that crowdsourcing is primarily beneficial for companies, this work reveals, across three studies, that quality perceptions of crowd-sourced (vs. company-generated) products are shaped by relationship norms: communal norms (vs. exchange norms). Study 1 indicates that developing a communal (vs. exchange) relationship with the company enhances quality perceptions of crowdsourced (vs. company-generated) products. Study 2 shows that firms' innovation ability works as an underlying mechanism: when consumers develop a communal (vs. exchange) bond with the company, they attribute greater innovation competence to crowdsourcing (vs. company-generated innovations). Finally, study 3 reveals that the beneficial effects of communal (vs. exchange) norms on perceived quality crowdsourced products only hold when the product innovation lacks complexity, and the effect is mitigated with high-complexity tasks. By demonstrating the importance of relationship norms and their interaction with innovation complexity, we resolve mixed findings on consumers quality perceptions towards crowdsourcing, contributing to recent studies and further offering important implications for firms seeking to leverage crowdsourcing strategies effectively.

***Keywords*:** crowdsourcing, company-generated innovation, competence, innovation ability, quality cues, relationship norms, product complexity.

1. Introduction

Crowdsourcing has become a major practice for developing profitable innovations (Business Insider, 2019; Forbes, 2020; Jin et al., 2021; Panneerselvam & Joe Arun, 2022; Stremersch et al., 2022). Crowdsourcing is defined as a corporate activity performed by a number of individuals in response to an online call by a company (Cao, Feng, & Wiles, 2023; Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Howe, 2006). Various brands such as Starbucks, Ikea, and Nestlé rely on crowdsourcing as a source of innovation (Brunneder et al., 2020). For example, in 2018, Ikea Launched a digital platform, "Co-Create IKEA," to generate and gather users' ideas (Cad Crowd, 2022).

While numerous crowdsourcing campaigns and initiatives were successful, recent research demonstrates that crowdsourcing does not always translate into positive outcomes (Dahlander & Piezunka, 2017, 2014). Notably, one of the critical challenges it faced pertained to issues surrounding quality perceptions, quality control, and its relationship with the community (Fixson & Marion, 2016). Hence, what makes crowdsourcing impactful, that is, what determines favorable consumer responses to crowdsourcing initiatives?

However, the literature is ambiguous on whether such an initiative is always beneficial for brands (Cappa et al., 2019) and whether it signals quality to consumers (Beck et al., 2022). For example, a study by Cao et al. (2023) demonstrates that stockholders often have mixed feelings about crowdsourcing initiatives. Notably, previous studies provide mixed findings on the effectiveness of crowdsourcing:: while most studies suggest that consumers react positively to crowdsourcing (e.g., Acar et al., 2021; Allen, Chandrasekaran, & Basuroy, 2018; Grimaldi, Vermicelli, & Cricelli, 2022;

Herter et al., 2023; Nishikawa et al., 2013, 2017; Gu et al., 2022; Huang, Vir Singh, & Srinivasan, 2014; Poetz & Schreier, 2012; Palacios et al., 2016; Wen and Atakan, 2023), yet, some research indicates that such a practice does not always translate into high perceived quality (e.g., Chang & Taylor, 2016; Fuchs et al., 2013). For example, Chen et al. (2022) found that individuals' responses to crowdsourcing depend on brand associations. This inconsistency underscores the necessity of exploring the factors that shape consumer responses to crowdsourcing initiatives.

This research examines the unique effect of relationship norms (Aggarwal, 2004; Olson et al., 2023; Shuqair et al., 2022) on consumers' quality perceptions of crowdsourced innovations. We expect that relationship norms influence reactions to crowdsourcing because consumers process information differently based on their relationship with the firm (Aggarwal & Law, 2005). Specifically, we posit that consumers' reactions to crowdsourced (vs. company-generated) products are shaped by relationship norms (Aggarwal, 2004; Ketkar et al., 2012). Communal relationships involve a genuine concern for others' needs (Aggarwal, 2004; Aggarwal & Larrick, 2012; Scott, Mende & Bolton, 2013). Accordingly, consumers under communal relationships are expected to react more positively to crowdsourced products, viewing them as part of a connected brand community. This phenomenon is because communal relationships emphasize reciprocity and consumer connection (Clarks & Mills, 1993; Bolton & Mattila, 2015; Yin et al., 2020), leading to increased perceived quality of crowdsourced innovations. In contrast, exchange norms focus on self-interest and the seller's competence (Scott et al., 2013). Consumers with an exchange relationship expect comparable benefits and prioritize the firm's ability cues (Bolton & Mattila, 2015), associating competence with commercial relationships (Aakar et al., 2010).

Consequently, under exchange norms, customers are anticipated to have higher quality perceptions for company-generated rather than crowdsourced innovations.

By doing so, we add to prior studies by exploring firms' innovation ability as an underlying mechanism for quality judgments in the new product development context. Prior research suggests that perceived ability (or competence) is linked to core product attributes valued by consumers, thus affecting their quality perceptions (Fournier & Alvarez, 2011). Previous research suggests that consumers may perceive users to lack innovation ability (Moreau & Herd, 2010; Ulrich, 2011); hence, they rely on the firm's expertise and knowledge (Fuchs et al., 2013). We thus posit that under exchange (vs. communal) norms, consumers place greater emphasis on the innovation ability of company-generated (vs. crowdsourced) products, because exchange firms are often associated with perceived competence (e.g., Conway, Pizzamiglio, & Mount, 1996; Yang & Aggrawal, 2019). Therefore, we expect that innovation ability is a driving force when forming perceived quality judgments of company-generated (vs. crowdsourced) innovations.

Finally, this research examines the effect of task complexity in product development & innovation (Allen et al., 2018; Molden & Clausen, 2021; Liu, Xia, Zhang, & Wang, 2016). Prior research suggests that tasks complexity affects reactions to participate in crowdsourcing (Chan, Song, Yao, 2015; Ghezzi et al., 2018; Sun, Fang, & Lim, 2012), Since complex tasks require higher levels of skills, and cognitive efforts (Martinez, 2017), we postulate that task complexity serves as a boundary condition for the effect of relationship norm. In particular, we predict that the beneficial impact of communal norms on crowdsourcing only holds when the product innovation lacks complexity (e.g., foods, clothing), thus enhancing perceived innovation ability. Such an

effect is mitigated with complex innovations (e.g., cars, smartphones), favoring company-generated innovation. Taken together, this research adds to the product development literature and practice by demonstrating how relationship norms and task complexity influence firms' perceived innovation ability and quality of crowdsourced (vs. company-generated) products**.**

Managerially, our results offer guidance for successful crowdsourcing campaigns. This aspect is particularly relevant considering developing crowdsourcing campaigns. To illustrate, recent examples indicate how crowdsourcing activities can fail, such as " Pepsi Refresh" campaign, wherein the brand failed to create an alignment between the initiative and Pepsi's core brand message (Viima, 2023), or even the recent unsuccessful crowdsourcing initiatives conducted by Mountain Dew or NASA (Dahlander & Piezunka, 2017).

2. Hypotheses development

2.1 Crowdsourcing and Quality Cues

Crowdsourcing is a recent concept that relies on open collaboration for new product development (Jeppesen & Lakhani, 2010; Panneerselvam & Joe Arun, 2022; Schlagwein & Bjørn-Andersen, 2014), helping organizations to innovate and increase sales (Howe, 2006, 2009; Nishikawa et al., 2017). Crowdsourcing initiatives often challenge the "crowd of customers" to provide product solutions that meet customers' expectations (Howe, 2006; Nishikawa et al., 2017; Palacios et al., 2016). The approach is an effective strategy for innovation (Estellés-Arolas & González-Ladrón -de-Guevara, 2012; Poetz & Schreier, 2012) that has been examined in the context of various marketing domains (Whitla, 2009), product development (Poetz & Schreier, 2012),

advertising (Thompson & Malaviya, 2013), and in education (Dollinger, Lodge, & Coates, 2018).

Crowdsourcing allows firms and businesses to gain access to external resources (Afuah & Tucci, 2012; Cappa et al., 2019), which in turn contributes to increasing innovation capacity (Acar, 2019). Crowdsourcing communities have various shapes and forms, this depends on the types of activities, such as new product development (e.g., Zahay, Hajli, & Sihi, 2018), to open-source software communities (Albors et al., 2008), to purely crowdsourcing businesses (e.g., Airbnb– Kohler, 2015).

Recent research has examined the key factors behind the effectiveness of crowdsourcing, such as the individual's ideation efforts (Bayus, 2013), the popularity of the task (Xu, Wu, & Wang, 2022), the brand image (e.g., luxury designers–Fuchs et al., 2013), consumer beliefs (Song, Jung, & Zhang, 2021), source credibility (Xu, Zhu, & Mou,2021), consumer enjoyment (Franke & Schreier, 2010) and quality of crowdsourcing innovations (Zhu, Li, & Andrews, 2017).

In practical terms, crowdsourcing is not only limited to creating new ideas or product designs but is also beneficial for small businesses and startups in raising capital through crowdfunding platforms (Camilleri & Bresciani, 2022). However, achieving favorable outcomes is not always straightforward. While established companies can leverage their existing knowledge and expertise to assimilate novel ideas, collaborating with unfamiliar partners in a crowdsourcing context can pose challenges (Ruiz, Brion, & Parmentier, 2020).

Bargoni et al. (2022) found that innovativeness affected crowdsourcing outcomes and fostered innovation. Indeed, there is a growing academic interest in understanding

the quality cues of crowdsourced products (e.g., Bargoni et al., 2022; Franke, Schreier, & Kaiser, 2010; Fuchs et al., 2013; Grimaldi, Vermicelli, & Cricelli,2022; Nishikawa, Schreier, & Ogawa, 2013). Prior research also shows that crowdsourcing can yield greater enjoyment, creativity, innovativeness, and higher quality perceptions about the product (Dahl, Fuchs, & Schreier, 2015; Franke & Schreier, 2010; Franke et al., 2010; Poetz & Schreier, 2012; Ransbotham & Kane, 2011; Ren, Chen, & Riedl, 2016; Wooten & Ulrich, 2017).

However, a review of prior findings on consumers' quality perceptions of crowdsourced (vs. company-generated innovations) shows mixed findings (e.g., Schreier, Fuchs, & Dahl, 2012; Dahl, Fuchs, & Schreier, 2015). While some consumers exhibit higher quality perceptions of company-designed products (e.g., Cautela, Simoni, & Moran, 2022; Schreier et al., 2012; Ulrich, 2011), the opposite effect is also found– preferences and higher perceived quality for crowdsourced designs (e.g., Dahl et al., 2015; Nishikawa et al., 2017; Poetz & Schreier, 2012; Wen and Atakan, 2023).

Thus, to reconcile such inconsistent findings, this investigation aims to advances our understanding of factors driving consumers' quality perceptions as well as the underlying mechanism for consumers' preference for crowdsourced (vs. company-generated) products. we propose that relationship norms play a moderating role in influencing consumers' quality perceptions based on the type of innovation.

Drawing on the theory of relationship norms (Aggarwal, 2004; Shuqair, Pinto, & Mattila, 2021; Yang & Aggarwal, 2019), we argue that consumers' quality perceptions of crowdsourced innovations vary across communal and exchange norms. Communal relationships involve individuals showing concern for others' needs (Clarks & Mills, 1993). Individuals under communal brand relationships view their interactions as more

social and personal, based on genuine and mutual feelings (e.g., Aggarwal & Larrick, 2012; Costello & Reczek, 2020). Hence, we anticipate that consumers in communal relationships may react more positively to crowdsourced (vs. company-generated) innovations. Simply put, we expect that when consumers establish communal bonds with companies, they will prefer products developed via crowdsourcing since communal relationships are based on reciprocity and consumers feel that they are connected to the brand's community of consumers (Clarks & Mills, 1979; Bolton & Mattila, 2015; Yin et al., 2020). Thus, since consumers in communal versus exchange relationships are expected to be more receptive to their brand partner's abilities (Bolton & Mattila, 2015), we predict that communal relationships increase the perceived quality of crowdsourced (company-generated) innovations.

Conversely, exchange norms make consumers focus on their self-interest and rely on the seller's competence (Aggarwal, 2004). Prior research suggests that individuals who establish exchange norms with brands are likely to focus on the perceived ability of the company and expect comparable benefits in return (Clarks & Mills, 1993). When consumers form an exchange relationship with the firm, they place greater emphasis on the firm's ability cues (Bolton & Mattila, 2015) because competence is associated with commercial relationships (Aakar et al., 2010). Therefore, under exchange norms, we expect that customers exhibit higher quality perceptions for company-generated (vs. crowdsourced) innovations.

2.2 The Underlying Mechanism of Innovation Ability

Innovation ability is often associated with competence-related attributes such as skill or efficiency (Fiske, Cuddy, & Glick, 2007; Hoegg & Lewis, 2011). In the

crowdsourcing context, innovation ability refers to a consumer's belief that a company can generate more innovative products (Brown & Dacin, 1997; Schreier et al., 2016). Furthermore, it also refers to the skills and expertise in achieving the tasks or designing the product (Ulrich, 2011).

Prior research suggests that consumers perceive user-generated ideas – such as crowdsourcing – as reflecting greater innovation (Schreier et al., 2012) because users have a superior ability to understand consumers' needs and wants (Dahl et al., 2015; Franke et al., 2010), hene leading to higher quality perceptions. Drawing from this literature, we expect that a firm's innovation ability (i.e., perceived competence to develop new products) is influenced by relationship norms. Thus, we posit that these norms are a salient aspect in responding to crowdsourced (vs. company-generated) innovations.

Consequently, under communal norms, individuals demonstrate genuine feelings and concerns toward others' needs (Clarks & Mills, 1993). Thus, the consumer–brand relationships are reciprocal (Aggarwal, 2004) and tend to be motivated by feelings of appreciation when evaluating others' abilities (You et al., 2021). Since crowdsourcing is influenced by social norms–largely based on social interaction (Brabham, 2012) –a sense of community belonging (Herter et al., 2022) is a critical feature in communal relationships (Wan et al., 2011). In this sense, crowdsourcing innovations gain relevance under communal norms when compared to exchange norms. Consequently, their perceptions of innovation quality will prompt consumers to react more positively to crowdsourced innovations compared to company-generated ones.

Conversely, consumers are likely to draw conclusions about the company's innovation ability when evaluating company-generated (vs. crowdsourced) innovations in exchange norms. Extant research suggests that competence and effectiveness signal high-quality product offerings (Aaker, Garbinsky, & Vohs, 2012) or are tied to the firm's power and ability to accomplish the task (Fiske et al., 2002). In addition, recent research indicates that consumers react more favorably to firms' competence cues – in this case, innovation ability – under exchange (vs. communal) relationships (Huang & Ha, 2020). Therefore, it is plausible to suggest that when consumers develop exchange relationships with the brand, their quality perceptions are shaped by innovation ability. Hence, we expect that under exchange (vs. communal) norms, quality perceptions of company-generated (vs. crowdsourced) products are driven via innovation ability. More formally, we hypothesize the following: —

H1. Relationship norms moderate crowdsourced (vs. company-generated) innovation effects on quality perceptions. Communal relationship norms will result in higher perceived quality of crowdsourcing (H1a), while exchange norms will generate higher perceived quality for company-generated products (H1b).

H2. Innovation ability mediates relationship norms effects on the relationship between crowdsourced (vs. company-generated) innovation and quality perceptions.

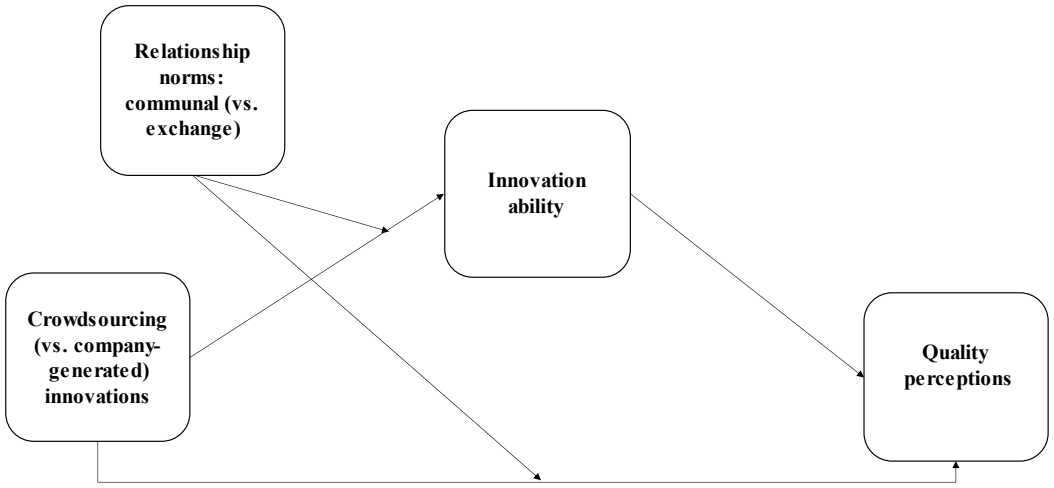

Figure 1. Conceptual framework

3. Overview of the Studies

To test our predictions, we employed a well-established method (experimental design) to test our cause-and-effect relationships (Kuhfeld, Tobias, & Garratt, 1994; Morales, Amir, & Lee, 2017). Experimental design is a popular method to examine responses to crowdsourcing (e.g., Mehta, Dahl, & Zhu, 2017) and relationship norms (e.g., Wan et al., 2011). Therefore, this approach was used to investigate whether relationship norms affect reactions to crowdsourcing. In this research, we used samples from Prolific. Prolific is viewed as more credible, transparent, and reliable source compared to other online panels such as Amazon Mechanical Turk (e.g., Palan & Schitter, 2018). Furthermore, we aimed for a minimum number of participants per

experimental condition in the online experiments, utilizing the GPower tool (power = 0.90) (Erdfelder et al., 1996; Viglia, Zaefarian, & Ulqinaku, 2021).

In three preregistered studies, we test our predictions across different contexts (food, clothing, cars) and procedures (recall method, scenarios, real brands, and behavior). Studies 1 and 2 test our basic foundation that relationship norms moderate the impact of crowdsourced (vs. company-generated) innovation on consumers' quality perceptions. In addition, Study 2 examines the underlying mechanism of innovation ability driving quality perceptions. Finally, Study 3 examines a boundary condition of task complexity. To address challenges linked with online panels, we expanded upon previous methodologies by filtering out responses with identical geolocations, gathering additional surveys until reaching the desired sample size (Kennedy et al., 2021; Moss & Litman, 2018; Wongkitrungrueng et al., 2020). These studies were preregistered on the AsPredicted platform: Study 1 (AsPredicted #92787), Study 2 (AsPredicted #95513), Pretest for Study 3 (AsPredicted #95634), and Study 3 (AsPredicted #95691).

3.1 Study 1

We propose that consumers perceive that crowdsourcing results in higher perceived ability when they have a communal bond with the company, whereas, under exchange norms, consumers perceive higher innovation ability for company-generated products.

Participants and Design

Four hundred ninety-three U.S. consumers recruited from Prolific participated in the study in exchange for a fee (57.8% male: M_{age} = 34.52, *SD* = 11.42). Study 1

employes a 2 (relationship norms: communal vs. exchange) × 2 (crowdsourcing: crowdsourced vs. company-generated) between-subjects design.

Procedure and Stimuli

First, we randomly assigned participants to our relationship norms conditions: communal (vs. exchange). We manipulated relationship norms through using a recall task. Participants were instructed to recall a friendly restaurant brand (communal norm condition) or one that provided good value for money (exchange norm condition) which they had extensively used and were highly satisfied with (Chen et al., 2020; You et al., 2021). Subsequently, in an open-ended format, participants were prompted to delineate their relationship with the brand and record the brand name.

Next, participants were told that new product development for the company they just recalled was either crowdsourced or run by company employees: Now, let's suppose this brand "X" (a code was used to show the brand name) to develop a new product using either (1) crowdsourcing "the consumer innovation" (consumers/users develop the product) x (2) company development team (the brand develops the product).

Measures

Participants evaluated innovation ability (i.e., perceived competence to generate new products) through four items ("*When I think of the creators of the new product, I think they are…* "*Competent*," "*Confident*," "*Capable*," and "*Efficient*"; α = .871; adapted from Fiske et al. 2002). As a manipulation check, participants reported if they had a communal relationship with the brand they recalled. Higher (vs. lower) scores indicate a communal (vs. exchange) relationship. In addition, crowdsourcing was

checked by a single item, where higher (vs. lower) scores reflect crowdsourcing (vs. company-generated innovation). All items were measured using a 9-point Likert scale (1 – strongly disagree; 9 – strongly agree).

Findings

Manipulation checks. A one-way ANOVA test shows that participants in the communal (vs. exchange) norm condition indicated a higher (vs. lower) agreement that they have a communal relationship with the restaurant that they just recalled (M_{communal} = 7.07, *SD* = 1.58 and M_{exchange}= 6.68, *SD* = 2.01; $F_{(1, 491)}$ = 5.57, $p < .05$). Thus, the results suggest that our relationship norms manipulation was successful.

Furthermore, findings from a one-way ANOVA revealed that participants in the crowdsourcing (vs. company-generated innovation) condition expressed greater agreement that the product developer was a consumer ($M_{\text{crowdsourcing}}$ = 7.41, *SD* = 1.52 and $M_{\text{company-generated}}$ = 7.08, *SD* = 1.99; $F_{(1, 491)}$ = 4.01, $p < .05$). Therefore, participants exposed to crowdsourcing innovations perceive that consumers developed the products, compared to company-generated ones.

Innovation ability The outcomes of a two-way ANOVA demonstrate an interaction effect between crowdsourcing and relationship norms on innovation ability ($F_{(1, 489)}$ = 11.23, $p < .001$). Specifically, participants in the exchange norm condition had higher innovation ability ratings in the company-generated vs. crowdsourced condition ($M_{\text{crowdsourcing}}$ = 7.40, *SD* = 1.40 and $M_{\text{company-generated}}$ = 7.84, *SD* = 0.88; $F_{(1, 489)}$ = 7.76, $p < .01$). Conversely, participants in the communal norm condition had higher innovation ability ratings in the crowdsourced (vs. company-generated) condition ($M_{\text{crowdsourcing}}$ = 7.68, *SD* = 1.20 and $M_{\text{company-generated}}$ = 7.36, *SD* = 1.27; $F_{(1, 489)}$ = 3.86, *p*

< .05). The main effects of relationship norms ($F_{(1, 489)} = 0.82$, *ns*) and crowdsourcing ($F_{(1, 489)} = 0.29$, *ns*) were insignificant.

3.2 Study 2

Study 2 investigates the role of innovation capability as underlying mechanism driving the interaction effect between crowdsourcing and relationship norms on consumers' quality perceptions. Additionally, Study 2 employs a scenario-based experiment relying on a fictional brand, to reduce any potential brand-related bias (e.g., Åkestam, Rosengren, & Dahlen, 2017).

Participants and Design

Three hundred thirty-four U.S. consumers (63.2% female; $M_{age} = 38.7$, $SD = 13.79$) were recruited from Prolific. Participants were randomly assigned into one of our four conditions: 2 (relationship norms: communal vs. exchange) × 2 (crowdsourcing: crowdsourced vs. company-generated) between-subjects design.

Procedure and Stimuli

Participants were randomly assigned to one of the relationship norms conditions. The communal norm condition informed that "Delight" is a company that places great value on building friendly relationships with its customers, whereas participants in the exchange norm condition were informed that "Delight" is a company that provides good value for money.

Next, we manipulated crowdsourcing by informing that the brand had created a new healthy cereal bar. Participants were randomly allocated to either a crowdsourcing or company-generated condition, where they learned about the "New Delight Mix Bar"

crafted by consumers in an online competition or by the company's product development team, respectively. In both conditions, participants received a concise overview of the product, including details about its flavor and nutritional composition (such as salt, preservatives, fat, and sugar content).

Measures

Participants informed quality perception through three items ("*The product is of high quality*," "*The product appears to be of very good quality*," and "*I consider that the product has higher quality*"; α = .956; adapted from Yoo et al., 2000). Perceived innovation ability was measured by three items ("*The brand was fully capable of developing it*", "*I'm confident about their competence to develop the product*", and "*Developing this product is well within the scope of their abilities*"; α = .941; Meuter et al., 2005 and Oliver & Bearden (1985). As a manipulation check for relationship norms, participants rated two items: "*The company values close friendship*" (communal norm) and "*The company offers good value for money*" (exchange norm). In addition, crowdsourcing was checked by two items: "*The product was developed by consumers*" (crowdsourcing) and "*The product was developed by the company development team*" (company-generated). Similarly to Study 1, all items were measured using 9-point Likert scales.

Findings

Manipulation Checks. The one-way ANOVA indicates a significant effect on participants' perceived relationship norms ($F_{(1, 333)} = 6.45$, $p < .05$), indicating that our manipulation was successful. Participants in the communal norm condition declared

higher agreement that the company values friendship than those in the exchange norm condition ($M_{communal}$ = 6.46, *SD* = 1.98 and $M_{exchange}$= 5.95, *SD* = 1.72).

In addition, the one-way ANOVA, findings indicate that participants in the crowdsourcing (vs. company-generated) condition indicated a higher level of agreement that the product was developed by consumers ($M_{crowdsourcing}$ = 6.77, *SD* = 2.25 and $M_{company\text{-}generated}$ = 4.23, *SD* = 2.64; $F_{(1, 333)}$ = 89.29, $p < .001$). Moreover, participants in the company-generated (vs. crowdsourcing) condition indicated a higher agreement that the cereal bar was developed by the company's development team ($M_{crowdsourcing}$ = 4.57, *SD* = 2.66 and $M_{company\text{-}generated}$ = 7.07, *SD* = 1.70; $F_{(1, 333)}$ = 105.07, $p < .001$). Therefore, our crowdsourcing manipulation was also successful.

Innovation ability. Consistent with Study 1, the results from a two-way ANOVA reveal an interaction effect between crowdsourcing and relationship norms on perceived innovation ability ($F_{(1, 330)}$ = 8.61, $p < .01$). Participants in the exchange norm condition rated perceived higher innovation ability higher in the company-generated (vs. crowdsourced) condition ($M_{crowdsourcing}$ = 6.80, *SD* = 1.35 and $M_{company\text{-}generated}$ = 7.25, *SD* = 1.48; $F_{(1, 330)}$ = 4.43, $p < .05$). Conversely, participants in the communal norm condition rated innovation ability higher in the crowdsourced (vs. company-generated) condition ($M_{crowdsourcing}$ = 7.15, *SD* = 1.18 and $M_{company\text{-}generated}$ = 6.72, *SD* = 1.42; $F_{(1, 330)}$ = 4.18, $p < .05$). The main effect was insignificant for both relationship norms ($F_{(1, 330)}$ = 0.39, *ns*) and crowdsourcing ($F_{(1, 330)}$ = 0.01, *ns*).

Downstream Effects on Perceived Quality. Additionally, we examined the mediating effect of innovation ability on consumers' quality perceptions using PROCESS Model 8 with 5,000 bootstrapped samples (Hayes, 2017). The bootstrap

analysis indicates that the indirect effect of crowdsourcing on quality perception through innovation ability was significant for participants in the exchange norm (*b* = .30; 95% CI: .01 to .59) and in the communal norm condition (*b* = -.29; 95% CI: -.54 to -.02). The index of moderated mediation was significant (*b* = -.58; 95% CI: -.97 to -.20). The direct effect of crowdsourcing on quality perception was not significant under exchange norms (*b* = .15; 95% CI: -.19 to .50) nor the communal norm condition (*b* = .09; 95% CI: -.26 to .43), indicating a full mediation of innovation ability.

3.3 Study 3

In Study 3, we test the effect of task complexity as a boundary condition of the crowdsourcing and relationship norms' effects on perceived quality. In particular, we expect the relationship norm effect to hold only for low-complexity tasks while such an effect is mitigated for high-complexity tasks.

Pilot Study

Prior to the main study, we ran a pilot study to identify products that differ in terms of task complexity (high vs. low). One hundred US participants (63.8% Female; M_{age}= 31.7, *SD* = 12.1) were recruited from Prolific. Participants were asked to evaluate the complexity of ten different products ("*smartphone*," "*car*," "*food*," "*clothes*," "*drinks*," "*luxury products*," "*cosmetics*," "*home appliances*," "*electronics*," "*and furniture*") on a 9-point scale (1 – Not at all complex; 9 – Extremely complex). Afterward, they assessed their own perceived ability to develop the same ten products on a 9-point scale (1 – Not at all able; 9 – Extremely able).

We chose the product categories of cars as high complexity and clothing as low complexity. Participants perceived cars (M = 7.93, SD = 1.54) as more complex than clothes (M = 4.58, SD = 1.92; $t_{(99)}$ = 14.14, p < .001). Additionally, cars were more complex than food (M = 4.08, SD = 1.81; $t_{(99)}$ = 16.51, p < .001), a context used in Study 2. Therefore, in the main study, we chose cars (high complexity) and clothes (low complexity) as products, eliminating the confound of perceived ability across these categories (cars M = 3.53, SD = 3.32; clothes M = 3.52, SD = 2.33; $t_{(99)}$ = .03, *ns*).

Participants and Design

Three hundred twenty U.S. participants (55.6% female; M_{age} = 46.54, SD = 15.70) were selected from Prolific. Study 3 employed a 2 (relationship norms: communal vs. exchange) × 3 (crowdsourcing: crowdsourcing vs. company-generated vs. control) x 2 (task complexity: high vs. low) between-subjects design.

Procedure and Stimuli

First, participants were randomly assigned to relationship norms conditions (communal vs. exchange). As in Study 1, relationship norms were manipulated in a recall task (adapted from You et al., 2021). This product category was used because besides producing cars (high complexity), it is also common to find clothes (low complexity) of major car brands in the market (e.g., Mercedes T-shirts, Porsche bags, Ferrari phone cases). Participants were asked to write down the brand name they considered for the task. Next, they were assigned to one of the three crowdsourcing conditions: consumers (crowdsourcing), company employees (company-generated), or control (no information about product origin was given). We added a control condition to provide a more parsimonious test of our predictions since, in the real world, some

consumers are indifferent to the source of product development (Fuchs et al., 2013). Finally, participants were randomly assigned to one of the task complexity conditions. Specifically, they were instructed to consider that the car brand they recalled decided to produce a new car (high complexity task) or a new t-shirt (low complexity task).

Measures

Quality perceptions were measured using the items from Study 2 ($\alpha = .971$; adapted from Yoo et al., 2000). The manipulation check for relationship norms was a single-item scale. In addition, crowdsourcing was checked by two items: "*The product was developed by consumers*" (crowdsourcing) and "*The product was developed by the company's development team*" (company-generated). Similar to our previous studies, all measures used 9-point Likert scales.

Findings

Manipulation Checks. As expected, manipulation checks worked as expected ($M_{comunnal} = 7.26$, $SD = 1.55$ and $M_{exchange} = 6.57$, $SD = 1.81$; $F_{(1, 318)} = 13.09$, $p < .001$). Results also suggest that participants in the crowdsourcing condition highly indicated that the product was created by consumers than those in the company-generated condition ($M_{crowdsourcing} = 6.36$, $SD = 2.05$; $M_{company\text{-}generated} = 3.44$, $SD = 2.33$; $M_{control} = 4.85$, $SD = 2.06$; $F_{(2, 317)} = 49.53$, $p < .001$). Moreover, participants perceived that the product was created by the company in the company-generated versus crowdsourced condition ($M_{crowdsourcing} = 5.43$, $SD = 2.28$; $M_{company\text{-}generated} = 7.67$, $SD = 1.63$; $M_{control} = 6.19$, $SD = 1.87$; $F_{(2, 317)} = 43.21$, $p < .001$).

Moderating Role of Relationship Norms. A three-way ANOVA with relationship norms, crowdsourcing, and task complexity on perceived quality was significant ($F_{(2, 308)} = 3.03$, $p < .05$). Consistent with our predictions, in the low complexity condition, consumers perceived quality to be higher for crowdsourced (vs. company-generated) products under communal (vs. exchange) norms ($F_{(2, 308)} = 8.19$, $p < .001$). Conversely, in the high complexity condition, consumers perceived a marginally higher quality for company-generated (vs. crowdsourced) products under exchange (vs. communal) norms ($F_{(2, 308)} = 2.60$, $p = .076$). All other interactions yielded non-significant results ($Fs < .50$, *ns*), indicating that, indeed, task complexity works as a boundary condition for our predicted crowdsourcing-relationship norms effects.

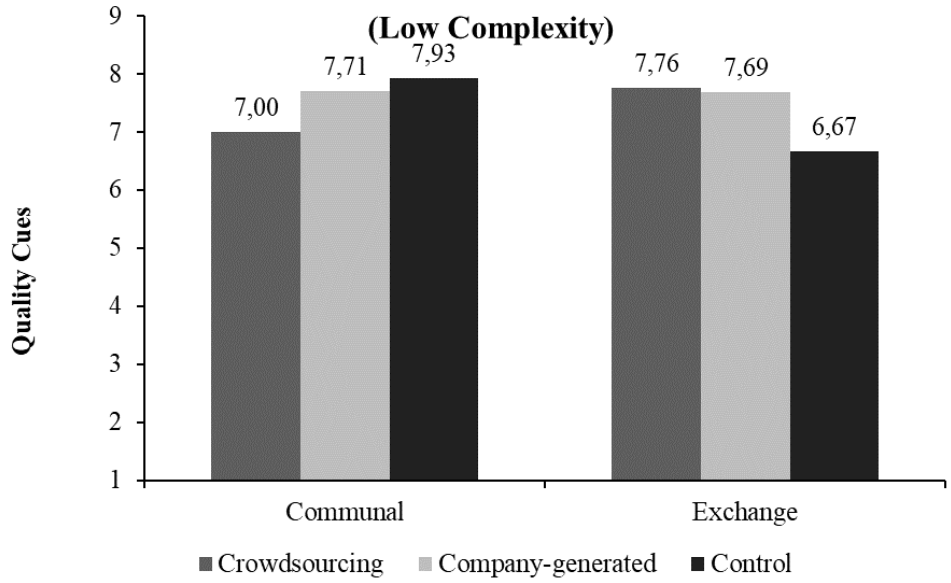

Figure 2A presents the three-way interaction results for low complexity.

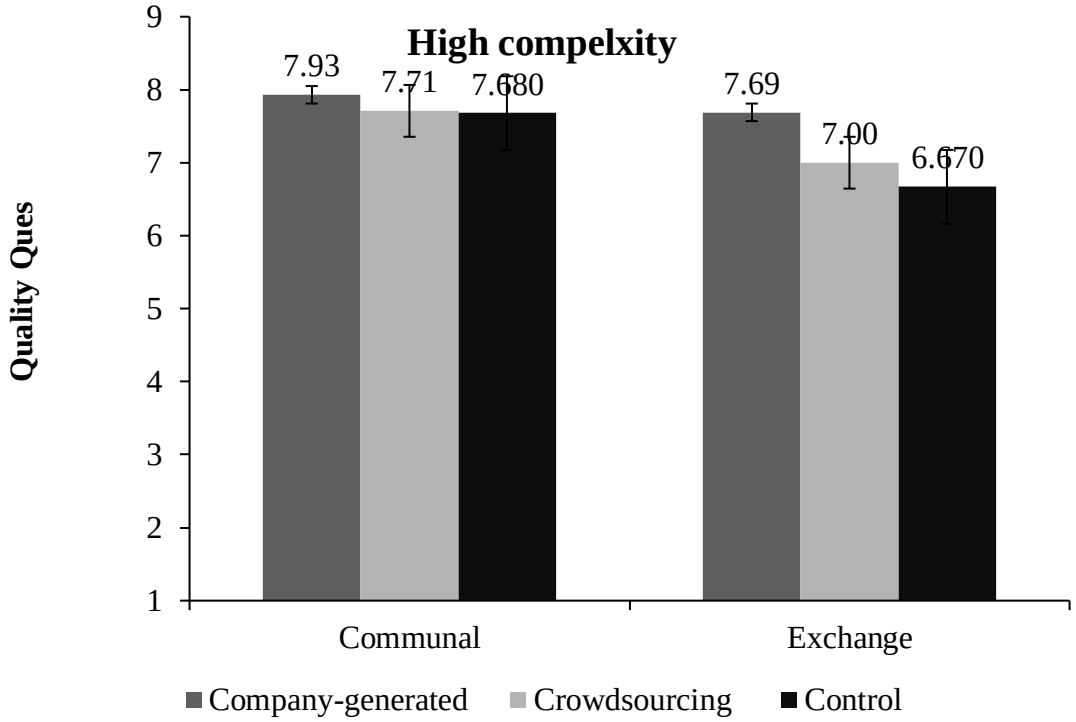

Figure 2B presents the three-way interaction results for high complexity.

Study 3 supports our prediction on the boundary condition of task complexity. The findings indicate that the beneficial effect of crowdsourcing (vs. company-generated) innovations on perceived quality is limited to low-complexity tasks, and consumers tend to favor company design for innovations of high complexity. By doing so, we provide a possible explanation for mixed findings on perceived quality in earlier crowdsourcing studies.

4. General Discussion

Crowdsourcing is a valuable source of product innovation (Brunneder et al., 2020; Landy et al., 2020). Drawing on relationship norms (e.g., Aggarwal, 2004; Olson et al., 2023), this research extends the crowdsourcing literature by demonstrating which

factors affect consumers' quality perceptions (e.g., Fuchs et al., 2013; Nishikawa et al., 2013; 2017).

Across three studies, we demonstrate that crowdsourced (vs. company-generated) innovations positively impact quality perception, and such effects are shaped by relationship norms communal (vs. exchange) and mediated by innovation ability. We further identify a boundary condition of task complexity. By doing so, we provide a more insights on the factors that shape consumers' quality perceptions of crowdsourced (vs. company-generated innovations).

4.1 Theoretical Contributions

This research aims to advances our understanding on quality perceptions of crowdsourcing. Although there is vast research on crowdsourcing, the literature remains silent in explaining how various factors influence consumers' responses to crowdsourcing (vs. company-generated innovation).

First, we contribute to prior research on consumers' quality judgments of crowdsourced (vs. company-generated) products (e.g., Gu et al., 2022). Prior research provides mixed findings on quality perceptions toward crowdsourcing. While some studies indicate that the crowdsourcing initiatives evoke more favorable quality reactions (e.g., Kazai, 2011; Poetz & Schreier, 2012), conversely, other studies indicate that the source of the design's signals quality perceptions (e.g., Fuchs et al., 2013). By uncovering a novel moderator for crowdsourcing effects, this paper shows that relationship norms shape consumers' responses to crowdsourced (vs. company-generated) innovations. We reconcile mixed findings to show that customers under communal norms react more positively to crowdsourced (vs. company-generated)

innovations. Notably, we find that for communal relationship norms, user design signals positive quality cues due to communal norms. Whereas, under exchange norms, crowdsourcing innovation sends an unfavorable signal in the marketplace. Indeed, such products fail to signal higher quality.

Second, we further explore the underlying mechanism of firms' innovation ability to explain crowdsourcing effects on perceived quality compared to company-generated products. Prior research indicates that consumers perceive crowdsourcing ideas as higher in innovation (Schreier et al., 2012; Dahl et al., 2015; Franke et al., 2010) due to the lay belief that users are better at understanding consumers' needs (Franke et al., 2010). However, by relying on relationship norms, we demonstrate that under exchange norms, perceived innovation ability underlies consumers' more favorable reactions toward company-generated (vs. crowdsourced) innovations. Such findings are consistent with recent research showing that competence cues are linked to exchange norms (Li, Chan, & Kim, 2019; Shuqair et al., 2022; Wang et al., 2016). In particular, when a relationship is perceived as higher in exchange, consumers become more focused on "you get what you paid for" relationships (Aggarwal, 2004). Thus, a firm's competence is likely to be the most important dimension when forming an impression about quality since it is critical to know whether the firm is able to deliver quality products. Thus, company-generated innovations are likely to gain importance.

Finally, we contribute to the body of work on the task or technical complexity of crowdsourcing designs (e.g., Allen et al., 2018; Molden & Clausen, 2021; Nakatsu, Grossman, & Iacovou, 2014; Song, Jung, & Zhang, 2021). Prior research shows that technical complexity drives crowdsourcing decisions (Allen et al., 2018). Consumers' preferences for crowdsourcing are higher for low (vs. high complexity) products (Song

et al., 2021) due to higher respect or trust in company designers (e.g., Schreier et al., 2012). Consistent with our innovation ability account, this research contributes by introducing the crowdsourcing-relationship-norms-interaction effect only holds for low (vs. high complexity) products. In the context of high-complexity products, the company's (vs. crowdsourcing) perceived ability is increased because, in such cases, consumers believe that only the company has the expertise or knowledge to develop such complex products (e.g., cars, smartphones).

4.2 Managerial Implications

Our findings provide valuable managerial implications, suggesting that companies need to consider relationship norms when designing crowdsourcing campaigns. Companies can focus on communal (e.g., "We love our consumers") or exchange norms cues ("Best prices") in their communication of new products. However, to make a positive impression on the quality of crowdsourced innovations, firms should rely on the dominant relationship orientation to boost their perceived innovation ability. For instance, under exchange norms, consumers might focus on perceived ability or competence when evaluating crowdsourced products. However, under communal norms, companies might focus the communal bonds or signaling warmth due to the importance of relational and social factors between consumers and the brand (Kervyn, Fiske, & Malone, 2022). As such, we encourage companies that are higher in communal norms to highlight communal bonds in their crowdsourcing campaigns. For example, various communally oriented brands such as Airbnb have successfully utilized crowdsourcing by designing a campaign that connects with their customers on a higher personal level (Speier, 2016). Furthermore, under exchange norms, companies should not neglect perceived competence when promoting company-

generated innovations. For instance, focusing on firms' innovation ability might be more beneficial for exchange-oriented companies.

Finally, our findings suggest that consumers prefer company-generated innovations when the product design is highly complex (reducing the perceived quality of crowdsourcing). In such cases, it could be quite efficient to highlight that both the company and consumers performed the new product development under communal norms and the company-development team under exchange norms.

In sum, understanding how different brand relationship norms (i.e., communal versus exchange) affect reactions to crowdsourced (vs. company-generated) innovations is essential in helping companies to maximize return on new product development.

5. Limitation and future research

Prior research on crowdsourcing provides mixed findings (e.g., Chang & Taylor, 2016; Fuchs et al., 2013). Research further suggests that not all crowdsourcing initiatives are successful or effective (Dahlander & Piezunka, 2017, 2014). By drawing insights on relationship norms (Aggarwal, 2004), and innovation ability (Moreau & Herd, 2010), this research resolves mixed findings. In particular, it adds to prior research on consumer quality judgments regarding crowdsourced products, it delves into the mechanism of firms' innovation ability to explain how crowdsourcing affects perceived quality compared to company-generated products. In sum, our findings demonstrate that under exchange norms, consumers tend to favor company-generated innovations because competence cues align with exchange norms, making competence a critical dimension for forming quality impressions.

Our results suggest that consumers' quality perceptions to crowdsourced (vs. company-generated) products are shaped by relationship norms. Future studies could explore how participation in crowdsourcing campaigns would affect the strength of the relationship with the company (Smith & Rose, 2020). For instance, would consumers under exchange relationships tend to develop a stronger sense of communal connection with the brand through participation in crowdsourcing initiatives.

We use a tripartite approach in testing our predictions, which has prevented us from investigating each of the three aspects from a deeper perspective than three distinct individual studies. Future research could also explore how the sense of community belonging would affect the perceived quality of crowdsourcing under communal (vs. exchange) norms. FThus, future research could explore the role of community belonging under communal (vs. exchange) norms.

Finally, we expect that these observed effects would vary across different industries and contexts. For example, we expect that communal relationship effect is reduced in high- (vs. low) tech industries or in collaborations between customers and employees (Chaordix, 2018).

6. Conclusion

In summary, this research extends to the crowdsourcing literature by emphasizing on the impact of relationship norms and task complexity. Our findings indicate that developing communal relationships enhances quality perceptions of crowdsourced products, attributing greater innovation competence to crowdsourcing when communal norms are salient. However, the positive effects of communal norms on perceived quality are contingent with the task complexity of product innovation.

These findings resolve mixed findings and inconsistencies in consumer perceptions of crowdsourcing initiatives.

References

Aaker, J. L., Garbinsky, E. N., & Vohs, K. D. (2012). Cultivating admiration in brands: Warmth, competence, and landing in the "golden quadrant". *Journal of Consumer Psychology, 22*(2), 191–194.

Acar, O. A. (2019). Motivations and solution appropriateness in crowdsourcing challenges for innovation. *Research Policy, 48*(8), 103716.

Acar, O. A., Dahl, D. W., Fuchs, C., & Schreier, M. (2021). The signal value of crowdfunded products. *Journal of Marketing Research, 58*(4), 644–661.

Åkestam, N., Rosengren, S., & Dahlen, M. (2017). Advertising "like a girl": Toward a better understanding of "femvertising" and its effects. *Psychology & Marketing, 34*(8), 795–806.

Afuah, A., & Tucci, C. L. (2012). Crowdsourcing as a solution to distant search. *Academy of Management Review, 37*(3), 355–375.

Aggarwal, P. (2004). The effects of brand relationship norms on consumer attitudes and behavior. *Journal of Consumer Research, 31*(1), 87–101.

Aggarwal, P., & Larrick, R. P. (2012). When consumers care about being treated fairly: The interaction of relationship norms and fairness norms. *Journal of Consumer Psychology, 22*(1), 114–127.

Aggarwal, P., & Law, S. (2005). Role of relationship norms in processing brand information. *Journal of Consumer Research, 32*(3), 453–464.

Albors, J., Ramos, J. C., & Hervas, J. L. (2008). New learning network paradigms: Communities of objectives, crowdsourcing, wikis and open source. *International Journal of Information Management*, *28*(3), 194–202.

Allen, B. J., Chandrasekaran, D., & Basuroy, S. (2018). Design crowdsourcing: The impact on new product performance of sourcing design solutions from the "crowd". *Journal of Marketing*, *82*(2), 106–123.

Bargoni, A., Ferraris, A., Bresciani, S., & Camilleri, M. A. (2022). Crowdfunding and innovation: a bibliometric review and future research agenda. *European Journal of Innovation Management*, (ahead-of-print).

Bayus, B. L. (2013). Crowdsourcing new product ideas over time: An analysis of the Dell IdeaStorm community. *Management Science*, *59*(1), 226–244.

Beck, S., Brasseur, T. M., Poetz, M., & Sauermann, H. (2022). Crowdsourcing research questions in science. *Research Policy*, *51*(4), 104491.

Brabham, D. C. (2012). Motivations for participation in a crowdsourcing application to improve public engagement in transit planning. *Journal of Applied Communication Research*, *40*(3), 307–328.

Bolton, L. E., & Mattila, A. S. (2015). How does corporate social responsibility affect consumer response to service failure in buyer–seller relationships?. *Journal of Retailing*, *91*(1), 140–153.

Brown, T. J., & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. *Journal of Marketing*, *61*(1), 68–84.

Brunneder, J., Acar, O. A., Deichmann, D., & Sarwal, T. (2020). A new model for crowdsourcing innovation. *Harvard Business Review*.

Business Insider (2013), "How Durex's Social Media Contest For Condoms Totally Backfired", *Business Insider*, (accessed August 1, 2020), [available at https://www.businessinsider.com/how-durexs-contest-totally-backfired-2013-6].

Business Insider (2019), "The crowdsourced delivery market continues to improve last mile supply chain economics in the e-commerce era", *Business Insider*, (accessed August 1, 2020), [available at https://www.businessinsider.com/crowdsourced-delivery-report].

Cad Crowd (2022). 18 companies that use crowdsourcing for new product design & prototype innovation. Available from https://www.cadcrowd.com/blog/18-companies-that-use-crowdsourcing-for-new-product-design-prototype-innovation/ accessed on 31/01/2023.

Camilleri, M. A., & Bresciani, S. (2022). Crowdfunding small businesses and startups: A systematic review, an appraisal of theoretical insights and future research directions. *European Journal of Innovation Management*, (ahead-of-print).

Cao, Z., Feng, H., & Wiles, M. A. (2024). When do marketing ideation crowdsourcing contests create shareholder value? The effect of contest design and marketing resource factors. *Journal of Marketing*, *88*(2), 99–120.

Cappa, F., Oriani, R., Pinelli, M., & De Massis, A. (2019). When does crowdsourcing benefit firm stock market performance?. *Research Policy*, 48(9), 103825.

Cautela, C., Simoni, M., & Moran, P. (2022). Microfoundations of dynamic design capabilities: An empirical analysis of "excellent" Italian design firms. *Journal of Product Innovation Management*, *39*(1), 3–23.

Chan, S. H., Song, Q., & Yao, L. J. (2015). The moderating roles of subjective (perceived) and objective task complexity in system use and performance. *Computers in Human Behavior*, 51, 393–402.

Chang, W., & Taylor, S. A. (2016). The effectiveness of customer participation in new product development: A meta-analysis. *Journal of Marketing*, *80*(1), 47–64.

Chaordix (2018), "6 key areas for customer co-creation and brand collaboration" , (accessed April 16, 2021), [available at https://blog.chaordix.com/6-key-areas-for-customer-co-creation-and-brand-collaboration]

Chen, Q., He, Y., Hu, M., & Kim, J. (2020). Navigating relationship norms: An exploration of how content strategies improve brand valuation over time. *Journal of Advertising*, *49*(4), 459–476.

Chen, C., Zhang, D., Lu, K., & Wang, C. L. (2022). User design as a double-edged sword: exploring perceived self-improvement and uncertainty in purchasing utilitarian products. *Journal of Product & Brand Management*, *31*(5), 744–760.

Clark, M. S., & Mills, J. (1993). The difference between communal and exchange relationships: What it is and is not. *Personality and Social Psychology Bulletin*, *19*(6), 684-691.

Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology*, *37*(1), 12–24.

Conway, M., Pizzamiglio, M. T., & Mount, L. (1996). Status, communality, and agency: implications for stereotypes of gender and other groups. *Journal of Personality and Social Psychology, 71*(1), 25–38.

Costello, J. P., & Reczek, R. W. (2020). Providers Versus Platforms: Marketing Communications in the Sharing Economy. *Journal of Marketing*, *84*(6), 22–38.

Dahl, D. W., Fuchs, C., & Schreier, M. (2015). Why and when consumers prefer products of user-driven firms: A social identification account. *Management Science*, *61*(8), 1978–1988.

Dahlander, L., & Piezunka, H. (2017). Why some crowdsourcing efforts work and others don‘t. *Harvard Business Review*.

Dahlander, L., & Piezunka, H. (2014). Open to suggestions: How organizations elicit suggestions through proactive and reactive attention. *Research Policy*, *43*(5), 812–827.

Dollinger, M., Lodge, J., & Coates, H. (2018). Co-creation in higher education: Towards a conceptual model. *Journal of Marketing for Higher Education*, *28*(2), 210–231.

Erdfelder, E., Faul, F., & Buchner, A. (1996). GPOWER: A general power analysis program. *Behavior Research Methods, Instruments, & Computers*, *28*, 1–11.

Estellés-Arolas, E., & González-Ladrón-de-Guevara, F. (2012). Towards an integrated crowdsourcing definition. *Journal of Information Science*, *38*(2), 189–200.

Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, *11*(2), 77–83.

Forbes (2020), "The power of crowdsourcing", *Forbes*, (accessed August 1, 2020), [available at https://www.forbes.com/sites/martenmickos/2020/06/23/the-power-of-crowdsourcing/].

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*(6), 878–902.

Fixson, S. K., & Marion, T. J. (2016). A case study of crowdsourcing gone wrong. *Harvard Business Review*.

Fournier, S., & Avery, J. (2011). The uninvited brand. *Business horizons*, *54*(3), 193–207.

Franke, N., & Schreier, M. (2010). Why customers value self-designed products: The importance of process effort and enjoyment. *Journal of Product Innovation Management*, 27(7), 1020–1031

Franke, N., Schreier, M., & Kaiser, U. (2010). The "I designed it myself" effect in mass customization. *Management Science, 56*(1), 125–140.

Fuchs, C., Prandelli, E., Schreier, M., & Dahl, D. W. (2013). All that is users might not be gold: How labeling products as user designed backfires in the context of luxury fashion brands. *Journal of Marketing, 77*(5), 75–91.

Fuchs, C., Prandelli, E., & Schreier, M. (2010). The psychological effects of empowerment strategies on consumers' product demand. *Journal of Marketing, 74*(1), 65–79.

Ghezzi, A., Gabelloni, D., Martini, A., & Natalicchio, A. (2018). Crowdsourcing: a review and suggestions for future research. *International Journal of Management Reviews, 20(2),* 343–363.

Grimaldi, M., Vermicelli, S., & Cricelli, L. (2022). Investigating the role of crowdsourcing in improving the quality of production processes: a systematic literature review. *The TQM Journal.*

Gu, Z., Bapna, R., Chan, J., & Gupta, A. (2022). Measuring the impact of crowdsourcing features on mobile app user engagement and retention: A randomized field experiment. *Management Science*, *68*(2), 1297–1329.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.

Hemsley-Brown, J. (2023). Antecedents and consequences of brand attachment: A literature review and research agenda. *International Journal of Consumer Studies*, *47*(2), 611–628.

Herter, M. M., Pinto, D. C., Pontin, P., & Nique, W. (2022). The Crowdsourcing Effect: How Crowdsourcing Shapes Customer Engagement: An Abstract. In *Academy of Marketing Science Annual Conference* (pp. 577–578). Springer, Cham.

Hoegg, J., & Lewis, M. V. (2011). The impact of candidate appearance and advertising strategies on election results. *Journal of Marketing Research*, *48*(5), 895–909.

Howe, J. (2006). The rise of crowdsourcing. *Wired Magazine*

Howe, J. (2009). Crowdsourcing: why the power of the crowd is driving the future of business. New York: Crown Business.

Huang, R., & Ha, S. (2020). The effects of warmth-oriented and competence-oriented service recovery messages on observers on online platforms. *Journal of Business Research, 121*, 616–627.

Huang, Y., Vir Singh, P., & Srinivasan, K. (2014). Crowdsourcing new product ideas under consumer learning. *Management Science, 60*(9), 2138–2159.

Jin, Y., Lee, H. C. B., Ba, S., & Stallaert, J. (2021). Winning by learning? Effect of knowledge sharing in crowdsourcing contests. *Information Systems Research, 32*(3), 836–859.

Kazai, G. (2011). In search of quality in crowdsourcing for search engine evaluation. In *Advances in Information Retrieval: 33rd European Conference on IR Research, ECIR 2011, Dublin, Ireland, April 18-21, 2011. Proceedings 33* (pp. 165-176). Springer Berlin Heidelberg.

Kennedy, C., Hatley, N., Lau, A., Mercer, A., Keeter, S., Ferno, J., & Asare-Marfo, D. (2021). Strategies for Detecting Insincere Respondents in Online Polling. *Public Opinion Quarterly*, 85(4), 1050–1075.

Kervyn, N., Fiske, S. T., & Malone, C. (2022). Social perception of brands: Warmth and competence define images of both brands and social groups. *Consumer Psychology Review*, *5*(1), 51–68.

Kohler, T. (2015). Crowdsourcing-based business models: How to create and capture value. *California Management Review, 57*(4), 63–84.

Kuhfeld, W. F., Tobias, R. D., & Garratt, M. (1994). Efficient experimental design with marketing research applications. *Journal of Marketing Research*, *31*(4), 545–557.

Landy, J. F., Jia, M. (L.), Ding, I. L., Viganola, D., Tierney, W., Dreber, A., Johannesson, M., Pfeiffer, T., Ebersole, C. R., Gronau, Q. F., Ly, A., van den Bergh, D., Marsman, M., Derks, K., Wagenmakers, E.-J., Proctor, A., Bartels, D. M., Bauman, C. W., Brady, W. J., . . . Uhlmann, E. L. (2020). Crowdsourcing hypothesis tests: Making transparent how design choices shape research results. *Psychological Bulletin, 146*(5), 451–479

Li, X., Chan, K. W., & Kim, S. (2019). Service with emoticons: How customers interpret employee use of emoticons in online service encounters. *Journal of Consumer Research, 45*(5), 973–987.

Martinez, M. G. (2017). Inspiring crowdsourcing communities to create novel solutions: Competition design and the mediating role of trust. *Technological Forecasting and Social Change, 117*, 296–304.

Mehta, R., Dahl, D. W., & Zhu, R. J. (2017). Social-recognition versus financial incentives? Exploring the effects of creativity-contingent external rewards on creative performance. *Journal of Consumer Research*, *44*(3), 536–553.

Meuter, M. L., Bitner, M. J., Ostrom, A. L., & Brown, S. W. (2005). Choosing among alternative service delivery modes: An investigation of customer trial of self-service technologies. *Journal of Marketing, 69*(2), 61–83.

Molden, L. H., & Clausen, T. H. (2021). Playing 3D chess, or how firms can thrive under complexity: The mediating role of innovation capabilities in the use of innovation input. *Journal of Business Research, 125*, 1–13.

Moss, A., & Litman, L. (2018). After the bot scare: Understanding what's been happening with data collection on MTurk and how to stop it. *Retrieved February, 4,* 2019.

Morales, A. C., Amir, O., & Lee, L. (2017). Keeping it real in experimental research—Understanding when, where, and how to enhance realism and measure consumer behavior. *Journal of Consumer Research*, 44(2), 465-476.

Moreau, C. P., & Herd, K. B. (2010). To each his own? How comparisons with others influence consumers' evaluations of their self-designed products. *Journal of Consumer Research*, 36(5), 806–819.

Nakatsu, R. T., Grossman, E. B., & Iacovou, C. L. (2014). A taxonomy of crowdsourcing based on task complexity. *Journal of Information Science*, *40*(6), 823–834

Nishikawa, H., Schreier, M., Fuchs, C., & Ogawa, S. (2017). The value of marketing crowdsourced new products as such: Evidence from two randomized field experiments. *Journal of Marketing Research*, *54*(4), 525–539.

Nishikawa, H., Schreier, M., & Ogawa, S. (2013). User-generated versus designer-generated products: A performance assessment at Muji. *International Journal of Research in Marketing*, *30*(2), 160–167.

Oliver, R. L., & Bearden, W. O. (1985). Crossover effects in the theory of reasoned action: A moderating influence attempt. *Journal of Consumer Research, 12*(3), 324–340.

Palacios, M., Martinez-Corral, A., Nisar, A., & Grijalvo, M. (2016). Crowdsourcing and organizational forms: Emerging trends and research implications. *Journal of Business Research*, *69*(5), 1834–1839.

Palan, S., & Schitter, C. (2018). Prolific. ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 22–27.

Panneerselvam, T., & Joe Arun, C. (2022). Bias-driven marketing that instigates pledging to a crowdfunding campaign: An experimental consideration of behavioral anomalies. *International Journal of Consumer Studies*, *46*(6), 2404-2428.

Poetz, M. K., & Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas?. *Journal of Product Innovation Management*, *29*(2), 245–256.

Ransbotham, S., & Kane, G. C. (2011). Membership turnover and collaboration success in online communities: Explaining rises and falls from grace in Wikipedia. *Mis Quarterly*, 613–627.

Ren, Y., Chen, J., & Riedl, J. (2016). The impact and evolution of group diversity in online open collaboration. *Management Science*, *62*(6), 1668–1686.

Ruiz, É., Brion, S., & Parmentier, G. (2020). Absorbing knowledge in the digital age: The key role of integration mechanisms in the context of crowdsourcing for innovation. *R&D Management*, *50*(1), 63-74.

Schlagwein, Daniel, Niels Bjørn-Andersen (2014), "Organizational learning with crowdsourcing: The revelatory case of LEGO", *Journal of the Association for Information Systems*, *15*(11), 754–778.

Schreier, M., Fuchs, C., & Dahl, D. W. (2012). The innovation effect of user design: Exploring consumers' innovation perceptions of firms selling products designed by users. *Journal of Marketing, 76*(5), 18–32.

Schreier, M., Nishikawa, H., Fuchs, C., & Ogawa, S. (2016). Crowdsourced Products Sell Better When They're Marketed That Way. *Harvard Business Review*.

Scott, M. L., Mende, M., & Bolton, L. E. (2013). Judging the book by its cover? How consumers decode conspicuous consumption cues in buyer–seller relationships. *Journal of Marketing Research, 50*(3), 334–347.

Song, X., Jung, J., & Zhang, Y. (2021). Consumers' preference for user-designed versus designer-designed products: The moderating role of power distance belief. *Journal of Marketing Research*, 58(1), 163–181.

Shuqair, S., Pinto, D. C., Cruz-Jesus, F., Mattila, A. S., da Fonseca Guerreiro, P., & So, K. K. F. (2022). Can customer relationships backfire? How relationship norms shape moral obligation in cancelation behavior. *Journal of Business Research, 151*, 463–472.

Smith, L. W., & Rose, R. L. (2020). Service with a smiley face: Emojional contagion in digitally mediated relationships. *International Journal of Research in Marketing, 37*(2), 301–319.

Stremersch, S., Camacho, N., Keko, E., & Wuyts, S. (2022). Grassroots innovation success: The role of self-determination and leadership style. *International Journal of Research in Marketing*, *39*(2), 396–414.

Speier, K., (2016). 4 examples of clever crowdsourcing campaigns. Available from https://www.mainstreethost.com/blog/four-examples-of-clever-crowdsourcing-campaigns/ accessed on 27/05/2022

Sun, Y., Fang, Y., & Lim, K. H. (2012). Understanding sustained participation in transactional virtual communities. *Decision Support Systems*, *53*(1), 12–22.

Thompson, D. V., & Malaviya, P. (2013). Consumer-generated ads: Does awareness of advertising co-creation help or hurt persuasion?. *Journal of Marketing*, *77*(3), 33–47.

Ulrich, K. T. (2011). *Design: Creation of artifacts in society*. Karl T. Ulrich.

Viima (2023). The pitfalls of crowdsourcing: how to overcome them to spur innovation. Available from https://www.viima.com/blog/crowdsourcing-pitfalls#:~:text=The%20success%20of%20your%20crowdsourcing,idea%20generation%2C%20or%20low%20quality accessed on 22/04/2024

Wan, L. C., Hui, M. K., & Wyer Jr, R. S. (2011). The role of relationship norms in responses to service failures. *Journal of Consumer Research*, *38*(2), 260–277.

Wang, Z., Mao, H., Li, Y. J., & Liu, F. (2017). Smile big or not? Effects of smile intensity on perceptions of warmth and competence. *Journal of Consumer Research*, *43*(5), 787–805.

Whitla, P. (2009). Crowdsourcing and its application in marketing activities. *Contemporary Management Research*, *5*(1),15–28.

Wongkitrungrueng, A., Hildebrand, D., Sen, S., & Nuttavuthisit, K. (2020). Is Salesperson Attractiveness a Boon or a Bane? The Moderating Role of Perceived Labor Cost-To-Price Ratio in Retail Bargaining. *Journal of Consumer Psychology*, *30*(3), 447–465.

Wooten, J. O., & Ulrich, K. T. (2017). Idea generation and the role of feedback: Evidence from field experiments with innovation tournaments. *Production and Operations Management*, *26*(1), 80–99.

Xu, Y., Zhu, J., & Mou, J. (2021). Factors influencing bid-winning performance in mixed crowdsourcing: The persuasive effect of credible information sources. *Technology in Society*, 65, 101539.

Yang, L. W., & Aggarwal, P. (2019). No small matter: How company size affects consumer expectations and evaluations. *Journal of Consumer Research*, *45*(6), 1369–1384.

Yin, B., Li, Y. J., & Singh, S. (2020). Coins Are Cold and Cards Are Caring: The Effect of Pregiving Incentives on Charity Perceptions, Relationship Norms, and Donation Behavior. *Journal of Marketing*, *84*(6), 57–73.

Yoo, B., Donthu, N., & Lee, S. (2000). An examination of selected marketing mix elements and brand equity. *Journal of The Academy of Marketing Science*, *28*(2), 195–211.

You, Y., He, Y., Chen, Q., & Hu, M. (2021). The interplay between brand relationship norms and ease of sharing on electronic word-of-mouth and willingness to pay. *Information & Management*, *58*(2), 103410.

Zahay, D., Hajli, N., & Sihi, D. (2018). Managerial perspectives on crowdsourcing in the new product development process. *Industrial Marketing Management*, *71*, 41-53.

Zhu, J. J., Li, S. Y., & Andrews, M. (2017). Ideator expertise and cocreator inputs in crowdsourcing-based new product development. *Journal of Product Innovation Management*, *34*(5), 598–616.