

# The psychological and behavioral consequences of customer empowerment in new product development: Situational framework, review, and research agenda

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## Abstract

In search of innovation and market success, firms have started to empower their customers in many ways, from customizing and self-producing their own products (*products made for one*) to selecting and designing products for the broader marketplace (*products made for many*). This power shift has important behavioral and psychological consequences for customers and, hence, has attracted considerable interest from academics and practitioners alike. However, the literature is scattered, provides inconsistent findings, and lacks both a comprehensive conceptualization and empirical overview. Specifically, extant literature neglects the situational nature of customer empowerment, equalizing inherently different customer empowerment activities while failing to consider the divergent effects on participating versus observing customers (i.e., customers who do not participate in the new product development process themselves). This limits advancement of the field, and impedes integration with the related fields of innovation, marketing, and consumer research. To facilitate a better understanding of the psychological and behavioral consequences of customer empowerment, we systematically review literature in the field and develop a conceptual framework that integrates different customer empowerment situations and their respective psychological (e.g., firm perceptions and feelings of empowerment) and behavioral (e.g., product preferences and willingness-to-pay) consequences. Using this framework, we structure previous research, highlight similarities and differences across customer empowerment situations, and set the stage for future research. By taking a customer perspective, this research advances our understanding of why some customer empowerment strategies are more successful than others (and under which circumstances). On a broader level, we show that adopting a behavioral and psychological perspective may be a promising way to study innovation.

## KEYWORDS

consumer behavior, customer empowerment, literature review, open innovation, psychology

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## 1 | INTRODUCTION

In today's markets, the role of customers has fundamentally changed. Customers are no longer passive recipients of firms' offerings; instead, they play an active role in their value creation (Acar & Puntoni, 2016; Ramani & Kumar, 2008). Hence, an increasing number of firms have started to "give their customers a voice" by empowering them to actively participate in the development and creation of new products (Fuchs et al., 2010, p. 66).

Firms empower customers in many ways. On the one hand, firms empower their customers to self-design unique products for themselves or close others (i.e., *products made for one*; Franke & Schreier, 2010). For example, in 2021 the German car manufacturer Porsche relaunched its Sonderwunsch (special request) program as part of its co-creation strategy, making it possible "to design individualized one-off cars—co-created by the customer" (Porsche Newsroom, 2023). Eduard Reichert, Head of Product and Quality Management at Porsche Classic, explains the customer's empowered role as follows: "Every customer essentially becomes a part of the company itself, taking the role of project manager for their own vehicle. They are like an employee and a Porsche owner all at once" (Porsche, 2023). Similarly, Nike has recently expanded its successful product customization program, Nike By You. In selected stores, Nike allows customers to design their own sneakers by choosing "from an assortment of exclusive graphics for instant customization" (Complex, 2023).

On the other hand, firms also empower their customers to select and design products for the broader market (i.e., *products made for many*; Song et al., 2021). One way to achieve this is through crowdsourcing, which involves a firm issuing an open call to an undefined, large group of people, in order to gather new ideas or find potential solutions for existing problems (Zhu et al., 2017). In 2015, Unilever, one of the world's largest consumer goods companies, launched *Foundry Ideas*, a digital crowdsourcing platform to drive innovation. Unilever's Senior Vice President of Global Marketing, Marc Mathieu, declares that the aim of this crowdsourcing platform is to "invite and harness capabilities and ideas from everywhere" and "to engage with anyone who has a novel idea" (Unilever, 2023). Another example is LEGO, the company has created one of the world's most recognizable online user communities with more than 1 million members. On their platform *LEGO Ideas*, customers can submit their own ideas for new LEGO sets and also vote for the ideas of other community members (LEGO, 2023).

This power shift in new product development (NPD) has important psychological and behavioral consequences

### Practitioner points

- Firms that understand the *psychology of customer empowerment* (i.e., the psychological and behavioral consequences for customers) may derive more value from their customer empowerment strategies.
- By considering the situational nature of customer empowerment, firms gain a more holistic understanding about how different customer empowerment activities influence different customer groups (i.e., participating and observing customers).
- Firms can use our framework to identify and design customer empowerment strategies that result in more positive customer reactions, such as higher willingness to pay, increased purchase likelihood, and stronger brand-customer relationships.

for customers. Whereas psychological consequences describe the impact of customer empowerment strategies on customers' attitudes, perceptions, and emotions (Fuchs et al., 2010), behavioral consequences are observable actions or intentions subsequent to customers' involvement with empowered products (Campbell & Winterich, 2018). Understanding these psychological and behavioral effects on customers matters, because they ultimately drive product sales and firm success (Nishikawa et al., 2017).

Innovation and marketing scholars have uncovered a plethora of psychological and behavioral consequences of customer empowerment in NPD at the customer level (please note that, for better readability, we use the term "customer empowerment" henceforth). However, the field is scattered, provides inconsistent findings, and lacks both a cohesive conceptualization and a comprehensive empirical overview. This makes it difficult to understand when customer empowerment creates (vs. reduces) value for customers and firms. For example, findings from Franke and Schreier (2010) show that customers develop stronger feelings of accomplishment when they self-design products and are, in turn, willing to pay significantly more for said products. In contrast, findings from Moreau et al. (2020) reveal that empowering customers to self-design products can backfire: that is, giving customers too much design freedom when self-designing products can decrease purchase likelihood.

In addition to the psychological and behavioral effects on customers who actively participate in the NPD process, research also shows that customer empowerment has consequences for observing customers (i.e., individuals who

do not participate in the NPD themselves, but know the product was co-created by other customers; see Paharia & Swaminathan, 2019). For example, observing customers identify more with user-driven firms (Dahl et al., 2015), and perceive such firms to have stronger innovation abilities (Schreier et al., 2012). However, literature also reveals critical boundary conditions where firms' customer empowerment activities may have negative effects. Song et al. (2021) show, for example, that presenting a product as "user-designed" (vs. company-designed) decreases product trust and results in lower product preference for customers with strong power-distance beliefs.

This variety of widespread, fragmented, and partially contradictory results limits our understanding of customer empowerment and inhibits advancement of the field. In particular, the following substantial gaps persist. First and foremost, the literature lacks a consistent conceptualization. Previous studies have explored various manifestations of the umbrella term "customer empowerment." These manifestations differ in their outcome (i.e., *product made for one* vs. *product made for many*) and stage of the NPD process (e.g., ideation vs. commercialization). Second, there is a lack of clarity regarding the distinction between consequences for customers who are empowered to design products for themselves (e.g., Franke & Schreier, 2010) and those who design products for the broader market (e.g., Fuchs et al., 2010). Existing research suggests there might be a "sharp contrast" between these two groups (Schreier et al., 2012, p. 20). Still, there has been a dearth of efforts to consolidate and synthesize the knowledge from these interconnected research streams, in order to create a conceptualization that integrates the psychological and behavioral consequences for both customer groups. In particular, the present literature primarily focuses on exploring the effects on participating customers, while largely neglecting the distinct psychological and behavioral consequences for the (potentially larger group of) observing customers (Song et al., 2021). By synthesizing the consequences for both groups, we bring much-needed clarity to this field and significantly improve our knowledge of the psychology of customer empowerment. Finally, extant literature does not provide a comprehensive overview of the (positive and negative) effects—as well as central boundary conditions and moderating factors—crucial to understanding when empowering customers may be beneficial (or not) from a customer perspective. Taking this customer perspective complements research on the firm perspective, and helps us gain a more holistic understanding of both the potential and limitations of customer empowerment. To address these deficiencies and further explore customer empowerment, we thus aim to provide answers to the following questions: How do different customer empowerment

strategies influence participating and observing customers? Specifically, how do they influence customer behavior and (firm as well as product) perceptions? When does customer empowerment create value for customers (and thus firms), and when does it backfire? How do the effects differ across different customer empowerment strategies and customer groups?

From a theoretical perspective, shedding light on the behavioral and psychological consequences for customers broadens our understanding of the value (as well as limitations) of customer empowerment. By drawing on situational consumer research (Belk, 1975; Lutz & Kakkar, 1975), we present a conceptual framework that integrates different customer empowerment situations and their respective psychological and behavioral consequences. Based on this framework, we identify and structure extant literature while setting the stage for future research. In sum, this research advances our understanding of why some customer empowerment strategies are more effective than others (and under which circumstances). On a broader level, we show that taking a behavioral and psychological perspective on an individual level can be a promising way to study innovation management. Moreover, this work provides concrete implications for practice. Firms can thus use our findings as a useful synopsis of the most relevant consequences for customers, and to identify appropriate customer empowerment strategies that impart real value for their customers. Overall, understanding when, how, and why empowering customers in NPD may hold valuable (psychological) potential for customers—beyond objectively better products—may increase firm performance and lead to a competitive advantage in the marketplace (Fuchs & Schreier, 2011).

This article focuses on customer empowerment in the context of (physical) products, as research has shown that psychological consequences stemming from person-object relationships are especially salient (Atakan et al., 2014). In contrast, customer empowerment in services tends to focus on the direct interactions between customers and service providers during the value creation process (Chang & Taylor, 2016). Moreover, we focus on the Business-to-Consumer (B2C) context, which is characterized by considerable autonomy of customers' decision-making in contrast to Business-to-Business (B2B) settings where such autonomy is less pronounced (Cortez & Johnston, 2017).

## 2 | DEFINING CUSTOMER EMPOWERMENT IN NEW PRODUCT DEVELOPMENT

To capture the active role of customers in NPD, and in relation to previous research, we refer to our study's focal

concept as customer empowerment (Fuchs & Schreier, 2011). On a general level, marketing and innovation literature views customer empowerment as the customer's involvement in the firm's NPD process (Fang, 2008). Accordingly, we define customer empowerment as the customer's active participation in any stage of a firm's NPD process. We capture customer empowerment as an umbrella term encompassing various practices, activities, and behaviors that can be understood as its "manifestation" (see Chang & Taylor, 2016). Customer empowerment therefore includes concepts such as co-creation, co-production, and self-customization (Valenzuela et al. 2009).

In line with our definition, customer empowerment can occur during all stages of the NPD process, including ideation, product development, commercialization and post-launch (Hoyer et al., 2010). Firms have a long tradition of empowering customers in the ideation stage of the NPD process (Chang & Taylor, 2016). For many years, firms such as Starbucks, Procter & Gamble, and McDonald's have successfully empowered their customers in the ideation stage by letting them submit new product ideas or select their favorite products to be marketed. In the product development stage firms empower customers to provide valuable feedback, or directly customize production or product design according to their preferences. However, customer empowerment extends beyond the early phases of the NPD process. In the commercialization stage customers can help companies position a product, or share their early usage experiences with a company (Chang & Taylor, 2016). Customer empowerment can continue to manifest even after a product has been launched in the market. In the post-launch phase, companies can empower customers in several ways. For instance, companies such

as IKEA empower customers to self-assemble their products, which can lead to greater liking of those products compared to objectively identical products with no active customer involvement (Norton et al., 2012). Figure 1 provides an overview of different customer empowerment manifestations across the stages of the NPD process.

It is important to note that we deliberately use the term "customers" to refer to the empowered individuals who take part in a firm's NPD process. Based on the notion of customers as "agents of value transformation" (Nambisan, 2002, p. 394), and due to the aforementioned differences in the nature of the transactive relationships between customers and firms, we argue that current (and potential) customers can assume different roles during the various stages of the NPD process. These roles are concerned with either the input or output of the NPD process. In the ideation stage, for example, customers can take on the *role of co-developers* who contribute different inputs, such as their creativity and knowledge. Hence, they serve as valuable resources that lead to promising new product ideas (Poetz & Schreier, 2012). In contrast, during the later stages of the NPD process, customers are more engaged with output. For example, customers can take on the *role of users and consumers* who buy, consume, and test products, thereby providing valuable feedback for companies (Nambisan, 2002).

### 3 | THE SITUATIONAL NATURE OF CUSTOMER EMPOWERMENT

In this section, we aim to conceptualize customer empowerment such that it allows us to structure the

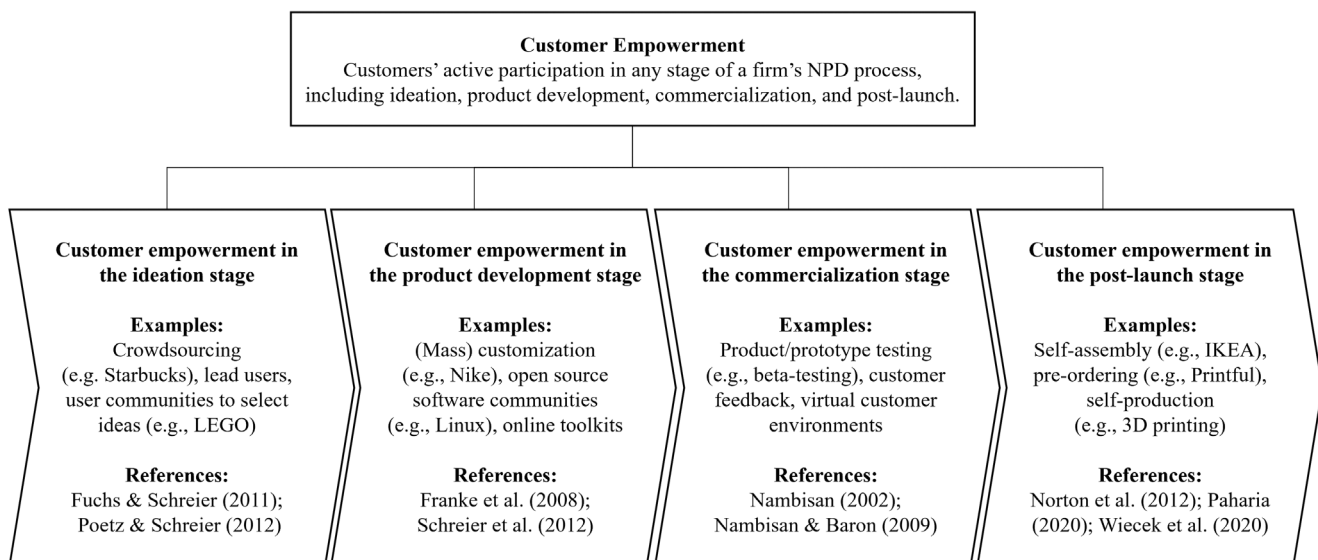


FIGURE 1 Definition and examples of customer empowerment in new product development.

behavioral and psychological consequences for customers. We draw on situational consumer research (Belk, 1975; Lutz & Kakkar, 1975) to highlight the situational nature of the psychological and behavioral consequences of customer empowerment. This is important because customers experience products and firms differently based on their specific situational setting (Fennell, 1978). Research has shown that situational factors significantly influence product perceptions and customer behavior (Srivastava et al., 1984). In the context of customer empowerment, this means that different customer empowerment situations (e.g., designing products for the whole market versus customizing a product for oneself) may lead to different psychological and behavioral outcomes. Therefore, to understand the different psychological and behavioral effects of customer empowerment, we need to consider that “it depends upon the situation” (Belk, 1975, p. 156). In line with previous research, we thus take the view that the “situation relevant for the understanding of consumer behavior is the psychological situation, which may be defined as an individual’s internal responses to, or interpretations of, all factors particular to a time and place of observation which are not stable intra-individual characteristics or stable environmental characteristics, and which have a demonstrable and systematic effect on the individual’s psychological processes and/or his overt behavior” (Lutz & Kakkar, 1975, p. 441).

We conceptualize the situational nature of customer empowerment as per two dimensions. The first

dimension describes two fundamental customer empowerment strategies related to the outcome of the customer empowerment activity (i.e., *product made for one* vs. *product made for many*; see Fuchs & Schreier, 2011). In the second dimension, we distinguish between two basic customer groups, depending on their involvement in customer empowerment activities (i.e., *participating customers* vs. *observing customers*; see Song et al., 2021). Based on these two dimensions, we construct four distinct situations that enable us to structure the psychological and behavioral consequences of customer empowerment (see Figure 2). We use these theoretically anchored and practically relevant situations to classify existing research, identify gaps, and derive avenues for future research.

The first dimension describes the outcome of the customer empowerment activity. Firms empower customers to select, design, or create a product either for one specific individual (i.e., for themselves or another individual; Franke et al., 2009) or many individuals (i.e., the broader marketplace; Fuchs & Schreier, 2011). Thus, customer empowerment in NPD may result in either (1) a *product made for one* or (2) a *product made for many*. Research indicates that these two types of customer empowerment differ considerably from each other (Schreier et al., 2012).

*Product made for one.* On the one hand, customers create products for themselves or (close) others (Franke & Piller, 2004), but not the broader market. Mass customization toolkits (i.e., a set of user-friendly design tools that allow for experimentation and offer immediate

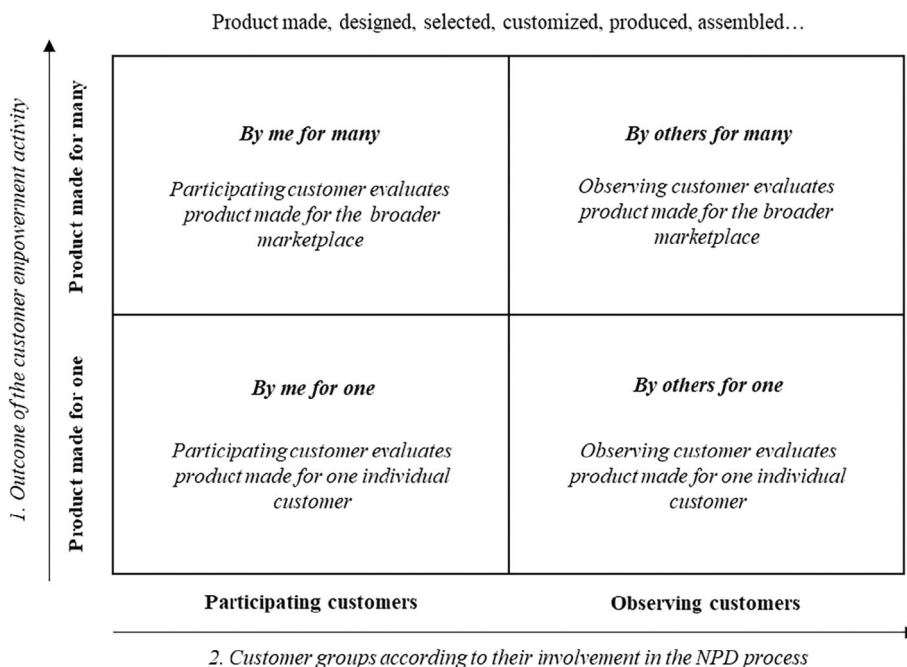


FIGURE 2 The situational nature of customer empowerment.

simulated feedback on the outcome of design ideas [Franke et al., 2008]) are a typical example of this category. The company Spreadshirt, for instance, empowers its customers to self-design their t-shirts online; customers can upload their own images and designs based on individual preference (Spreadshirt, 2022). Another well-known example is Nike By You, where customers can self-design their own sneakers and fashion items to suit their specific design preferences (Nike By You, 2023).

*Product made for many.* On the other hand, customers select and design products for the broader market (Fuchs et al., 2010). In this case, customers do not create a product specifically for one individual, but instead help create products for many (potential) customers in the main market. The company Threadless, for example, markets user-designed products on a large scale to a wide range of customers (Schreier et al., 2012). Similarly, the Swedish furniture retailer IKEA launched “Co-create IKEA”—a digital platform which empowers customers to co-create develop their own product ideas that will eventually be available for purchase in IKEA’s online shop (IKEA, 2023).

The second dimension distinguishes between two basic customer groups, depending on their active involvement in the NPD process: (1) *participating customers*; and (2) *observing* (i.e., *nonparticipating customers*).

*Participating customers.* Participating customers actively engage in a firm’s NPD process (Fuchs et al., 2010). As heretofore mentioned, customers may participate in different stages of the NPD process. For example, participating customers could be part of a crowdsourcing community that actively contributes by selecting new product ideas, or they could be customers who self-design their own products.

*Observing customers.* Observing customers do *not* actively participate in a firm’s NPD process but *are aware* that a product is the result of the customer empowerment activities of others (Song et al., 2021). Nowadays, many companies actively present their products as “user-designed” (i.e., customer-empowered) on their websites and packaging. Thus, even observing customers are increasingly aware of a firm’s customer empowerment activities.

In sum, combining these two dimensions leads to four situations, each describing a specific setting in which psychological and behavioral consequences of customer empowerment occur.

The situation “By me for one” describes the psychological and behavioral consequences when participating customers create a product for one individual customer (i.e., themselves or another individual, such as a close friend). This situational setting is particularly common in the context of mass customization (i.e., self-designing a

product for oneself or as a gift for another person). Research suggests that customers perceive and respond to self-designed products differently compared to standard products (e.g., Franke et al., 2010). This setting also applies to situations where customers self-assemble or self-produce products. The Swedish home furnishing company IKEA, for example, allows its customers to self-assemble their new furniture at home; this active participation in the final assembly of the product has important psychological and behavioral effects on customers (Norton et al., 2012).

The situation “By me for many” describes the psychological and behavioral consequences for customers actively involved in co-creating for the broader marketplace (i.e., the mass market). This setting is particularly common in the context of crowdsourcing. Traditionally, professional designers are responsible for generating new product ideas. However, in recent years firms have started to outsource idea generation to users (“the crowd”). Nowadays, regular customers are actively involved in developing and selecting new product ideas for the entire market (Song et al., 2021). For example, Muji, Unilever, and BMW actively empower their customers to participate in the idea generation and selection process, with the aim to bring new products to the fore. Extant literature has revealed several psychological and behavioral consequences for these empowered customers.

The situation “By others for many” describes the psychological and behavioral consequences for observing customers presented with customer-empowered products. Many companies systematically empower their customers to generate creative product ideas and designs. As previously mentioned, LEGO’s crowdsourcing platform *LEGO Ideas* enables customers to submit their own designs for new LEGO sets, and to select the best ideas from the user community. Importantly, LEGO not only rewards these user creators by giving them a 1% royalty of the product’s net sales, but also credits them by labeling said product as “user-designed” and integrating the name of the user creator into the set components (LEGO, 2022). Similar to LEGO, many other user-driven companies actively publicize the people who design the products; thus, even nonparticipating customers increasingly observe and experience user-designed products. Extant literature has identified multiple (positive and negative) psychological and behavioral effects on such customers (e.g., Schreier et al., 2012).

The situation “By others for one” describes the psychological and behavioral consequences for observing customers presented with a customer-empowered product made for one individual customer. Specifically, this setting describes situations wherein a customer is made aware of another person’s customized or self-designed

product. For example, imagine running into a close friend who is wearing a new pair of Nike sneakers: while talking to this friend, you discover that they personally customized those sneakers. How would you feel after becoming aware of your friend's new, self-designed shoes? Nowadays, such customization efforts and convergence with the self-designed products of others are not uncommon. For example, Nike offers its customers the opportunity to digitally share their self-designed shoes with friends (e.g., via social media). Research has shown that exposure to products customized by other people has important psychological and behavioral consequences for customers (e.g., D'Angelo et al., 2019).

## 4 | METHODOLOGY

We followed Tranfield et al.'s (2003) systematic review process to conduct a comprehensive synthesis of the academic literature on the psychological and behavioral consequences of customer empowerment. This approach provides transparency throughout the entire process and enables other researchers to replicate and update the literature review. For our literature review, we used Scopus, the largest citation database of peer-reviewed literature (see, e.g., Randhawa et al., 2016).

To identify relevant articles, we used two subsets of Boolean search terms. First, to search for "customer empowerment," we used the list of keywords from Gemser and Perks (2015) as our foundation and added several additional keywords (based on Chang & Taylor, 2016; Cui & Wu, 2018). As indicated by Gemser and Perks (2015, p. 660), the concept of customer empowerment "has shifted substantially [...] over the last decade, and it is still in flux." Therefore, we included 13 additional keywords to ensure a comprehensive overview. Our keywords included general terms referring to customer empowerment

(e.g., customer participation, user empowerment, and co-creation) as well as specific behaviors and manifestations of customer empowerment (e.g., crowdsourcing, idea competition, and lead users). Table 1 gives an overview of these keywords. Second, to integrate the focus on (new) product development, we used the following keywords: *product*, *goods*, and *offering*. Searching for these keywords (we included both subsets simultaneously) in the Scopus database (within the title, keywords, or abstract) resulted in 42,208 articles.

While our first screening of the literature showed that most articles fall into the innovation or marketing field, we also found that some relevant work comes from other fields (e.g., from the fields of management and information systems). Accordingly, to identify the most relevant as well as high-quality articles, we included articles published in either the top 50 technology and innovation management journals (Thongpapanl, 2012), the top 50 marketing journals (Baumgartner & Pieters, 2003), or the Financial Times top 50 journals (Wijekoon et al., 2021). Moreover, we followed previous research on customer empowerment and selected the year 2001 as the point of departure for the review (Gemser & Perks, 2015). This resulted in 942 articles from 59 different journals.

Next, both authors separately read the abstracts and portions of the main text of the remaining 942 articles. We excluded duplicates (4 articles) and articles that did not focus on NPD and customer empowerment (327 articles). This resulted in a remaining sample of 611 articles. From there, we discussed the abstracts in detail and employed four important exclusion criteria to further refine the data set. As previously mentioned, our focus is on the NPD process and the psychological and behavioral consequences for B2C customers in relation to (physical) products. Consequently, we excluded articles with a focus on (a) nonpsychological and nonbehavioral outcomes

TABLE 1 Literature review keywords for customer empowerment.

Keywords for customer empowerment			
Brand communities <sup>a</sup>	Customer empowerment	Idea competition <sup>a</sup>	User communities
Co-creation	Customer engagement <sup>a</sup>	Lead users	User design <sup>a</sup>
Co-development <sup>a</sup>	Customer integration	Mass customization	User empowerment <sup>a</sup>
Co-production <sup>a</sup>	Customer involvement	Multistakeholder collaboration	User innovations
Collaborative product development	Customer participation	Open innovation	User involvement
Consumer design	Customization <sup>a</sup>	Self-assembly <sup>a</sup>	User participation <sup>a</sup>
Crowdsourcing	Customized products	Self-design <sup>a</sup>	User toolkits <sup>a</sup>
Customer co-creation	Early customer input	Self made <sup>a</sup>	
Customer co-innovation	External sources of innovation	Self-production <sup>a</sup>	

<sup>a</sup>Additional key words based on Chang and Taylor (2016) and Cui and Wu (2018).

(180 articles; e.g., firm and innovation performance as dependent variables, see Fang, 2008), (b) antecedents of customer empowerment (235 articles; e.g., motivational factors, see Cui & Fang, 2016), (c) customer empowerment in services (100 articles; i.e., service marketing literature, see Heidenreich et al., 2015), and (d) B2B industries (126 articles; see Morgan et al., 2019). Please note that more than one exclusion criteria might apply for one and the same article. Both authors examined the articles separately and applied the exclusion criteria. We discussed the articles we disagreed on in further detail, and then made a joint decision whether to include/exclude those articles (intercoder reliability: 95.1%). This resulted in a final sample of 66 articles published in 20 journals. Figure 3 visualizes our data collection process.

We extracted and summarized the information from these articles in an Excel spreadsheet organized into descriptive, thematic, and key finding categories. We analyzed each study with regard to general article data (title, authors, journal, and year of publication), methodology (type of methodology, psychological outcome variables, behavioral outcome variables, moderating variables, and effect directions), thematic background, and key findings.

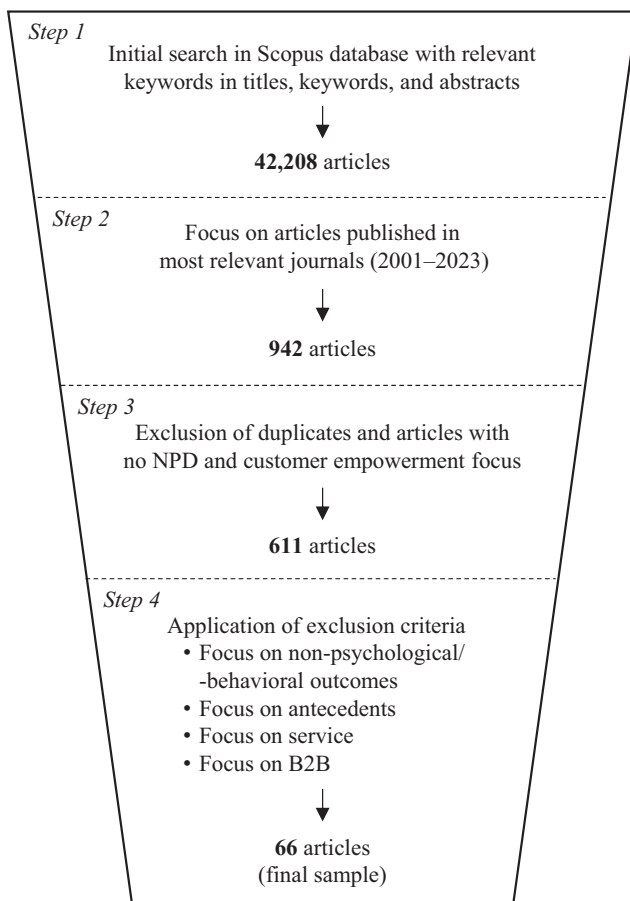


FIGURE 3 Data collection process.

Moreover, we classified the articles according to our conceptual framework spanning the psychological and behavioral consequences of customers in four different customer empowerment situations. To provide additional insight and a clearer structure, we differentiated between customer-related, product-related, firm-related, and task-related psychological consequences and moderating factors. All articles from the final sample can be found in Table A1 (see Appendix) and are denoted by an asterisk in the reference list.

The articles were published between 2003 and 2023. Figure 4 visualizes the steadily growing body of knowledge. Most articles were published in the *Journal of Marketing* (11), *Journal of Marketing Research* (10), *Journal of Business Research* (9), and *Journal of Product Innovation Management* (6).

## 5 | THE PSYCHOLOGICAL AND BEHAVIORAL CONSEQUENCES OF CUSTOMER EMPOWERMENT

### 5.1 | By me for one: Participating customers × product made for one

A total of 52 articles can be assigned to this situation. Most of the identified studies focus on (mass) customization in the early stages of the NPD process, wherein customers customize a product for themselves or (as a gift) for another person. However, this situation also encompasses customers' active participation at the end of the NPD process (e.g., self-assembly of the product). Figure 5 gives an overview of the identified effects in this customer empowerment situation.

#### 5.1.1 | Behavioral consequences

Our literature review shows that customers generally react more positively toward customized (vs. standard) products. In particular, customers are more likely to recommend (Klesse et al., 2019) and purchase self-designed

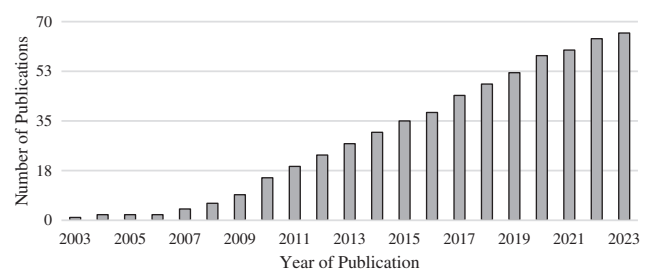


FIGURE 4 Accumulated number of publications over time.



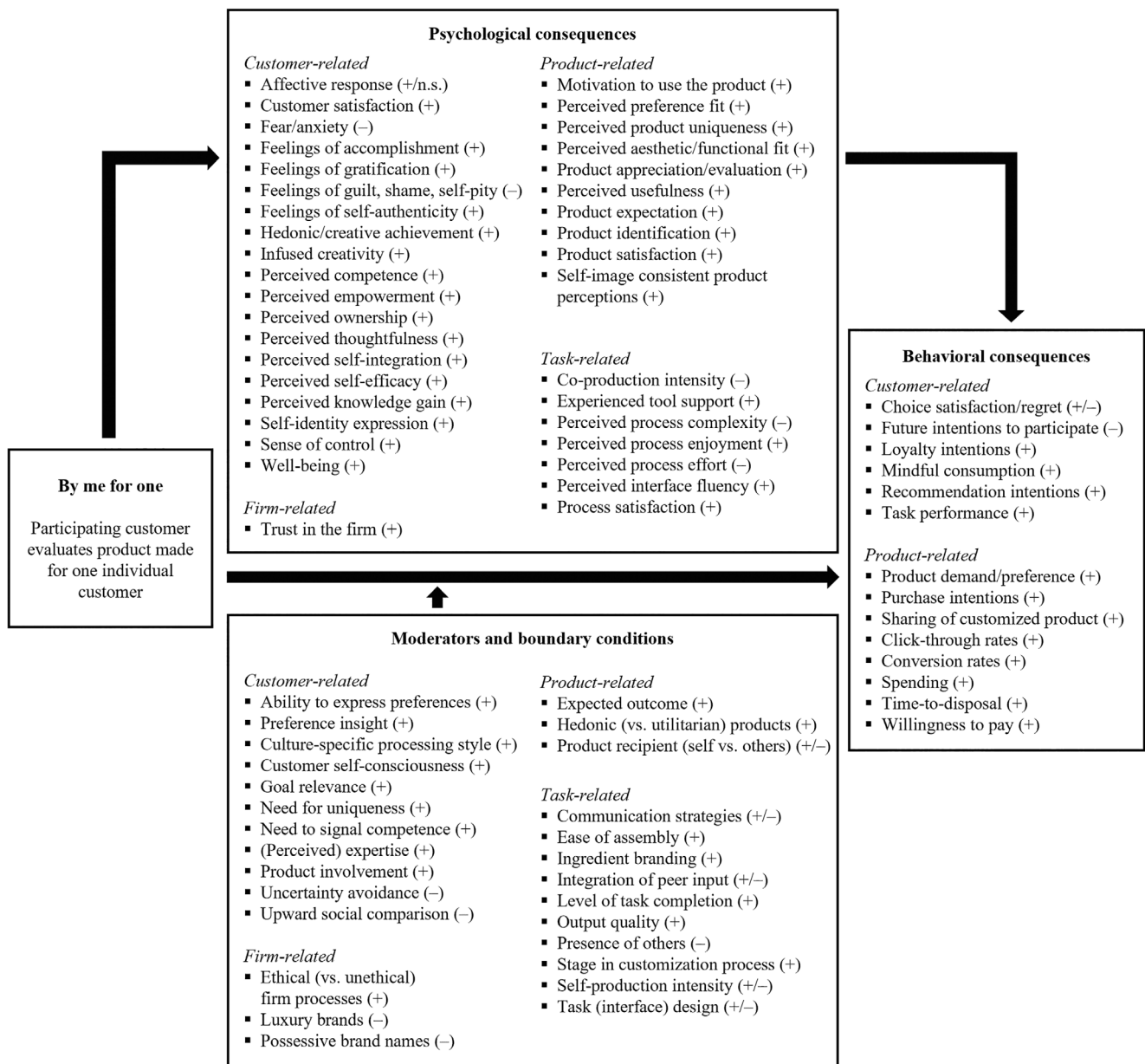


FIGURE 5 Psychological and behavioral consequences (“By me for one”).

products (e.g., Franke et al., 2009; Moreau et al., 2020; Valenzuela et al., 2009). Moreover, they are willing to pay significantly more for them (e.g., Franke & Schreier, 2008; Randall et al., 2007) and are more loyal to the underlying brand (Yoo & Park, 2016). Interestingly, customized products can even increase customers' task performance (Kaiser et al., 2017) and anticipated time-to-disposal (Alptekinoglu et al., 2023). Overall, customers react more positively toward self-produced and self-assembled products. Self-producing results in increased loyalty intentions, willingness to pay, purchase intentions, and product demand along with more positive word-of-mouth and task performance (Bendapudi & Leone, 2003; Köcher & Wilcox, 2022; Mochon et al., 2012). It seems that even a “minimal level of

interaction is sufficient for triggering positive effects” (Wiecek et al., 2020, p. 807). Paharia (2020), for example, found that customers with some control over the production process (e.g., ordering products on demand) develop higher purchase intentions for products with positive, ethical production methods (e.g., recycled materials) than when they have no role in production at all (i.e., buying what is already in inventory).

### 5.1.2 | Moderating factors and boundary conditions

The positive effects on customers are not universal: our literature review identifies several factors that attenuate

or even reverse these effects. In the context of customization, the positive effects of customized products on willingness to pay, purchase intentions, and product attitudes are attenuated for customers with high uncertainty avoidance (de Bellis et al., 2015), low preference insights, low ability to express their preferences (Franke et al., 2009), and low product involvement (Kaplan et al., 2007). Moreover, findings from Franke et al. (2010) show that the positive effect of customization on willingness to pay disappears when the outcome of the process is perceived as unattractive, and when customers feel they have only marginally contributed. Moreover, some studies show moderating factors on a brand level. Khamitov and Puzakova (2022) show that customers react negatively to customized products from brands with possessive names. Moreau et al. (2020) further demonstrate that giving customers high (vs. low) design freedom levels when customizing products from luxury (vs. mainstream) brands decreases (increases) their purchase intentions. For luxury products, this effect is attenuated for high (vs. low) brand logo prominence and strengthened for high (vs. low) brand signature prominence.

Several articles examine task-related moderators, revealing insights into how co-creation processes should be designed to positively influence customers. On a general level, research shows that keeping the co-creation process simple (i.e., less complex) leads to more positive results for customers (Safi, 2022; Wilcox & Song, 2011). For example, customizing products via starting solutions (vs. attribute-by-attribute) decreases perceived complexity of the customization task and mentally stimulates customers, leading to increased product satisfaction and the purchase of more feature-rich (and thus higher-priced) products (Hildebrand et al., 2014). Further, integrating (vs. segregating) the customization decision and assembly process increases perceived value for customers, as they feel creatively engaged (Buechel & Janiszewski, 2014). Moreover, customization tasks should be designed in a customer-congruent way (de Bellis et al., 2019; Schlager et al., 2018). For example, matching the customization interface to customers' culture-specific information processing style increases product satisfaction and purchase likelihood (de Bellis et al., 2019).

Furthermore, several studies highlight how the presence and awareness of others influences customers (Hildebrand & Schlager, 2019; Sugathan & Ranjan, 2020). Moreau et al. (2011) found that customers' willingness to pay for self-designed products was higher when said product was intended as a gift for someone rather than themselves. Similarly, findings from Yin et al. (2020) show that customers (creators and recipients) perceive products customized for close others (vs. themselves) to have higher levels of uniqueness, due to higher levels of perceived thoughtfulness. Moreau and Herd (2010) found

that when customers compare their own self-designed products with products designed by professionals (vs. other customers), customers give the self-designed products lower evaluations. Finally, findings from Franke et al. (2008) show that customers who integrate peer customer input (vs. not) when generating and evaluating ideas for products report higher willingness to pay, purchase intentions, and preference fit perceptions.

In the context of self-production, customers are less satisfied with the firm when the outcome is worse than (or as) expected (Bendapudi & Leone, 2003); high levels of self-production intensity reduce customer satisfaction as well (Haumann et al., 2015). Moreover, the positive effects of self-printing depend on the product category: whereas self-printing improved customers' product evaluations for hedonic products, it had no such effects for utilitarian ones (Wiecek et al., 2020). Finally, Paharia (2020) shows that the positive effect of having control over the production process reverses for unethical processes (e.g., underpaid labor), ultimately resulting in lower purchase intentions.

### 5.1.3 | Customer-related psychological consequences

Customers enjoy customizing their products; they develop feelings of accomplishment and derive self-efficacy from the process (e.g., Franke et al., 2010; Habicht & Thallmaier, 2017; Jiang et al., 2015). Moreover, customers derive hedonic and creative value from their customization efforts (Merle et al., 2010), and are more mindful and appreciative of the outcome—which leads to personal well-being (Brunneder & Dholakia, 2018; Choi et al., 2022). Through their active participation, customers also imbue the product with their own personality. For example, Atakan et al. (2014) found that self-designing products increases identification with the product, which results in more positive product evaluations. Self-producing and self-assembling products has several positive psychological effects on customers as well (Stevens et al., 2017). Customers value self-assembled products because they satisfy a psychological need to signal competence to themselves and others (Mochon et al., 2012). Moreover, self-printing of products increases customers' perceived ownership of said products, thereby improving subsequent product evaluations (Wiecek et al., 2020). Additionally, having responsibility for production increases feelings of guilt (gratification), thus mediating purchase intentions for unethical (ethical) production processes (Paharia, 2020). Similarly, co-creation failure can lead to negative effects, including feelings of guilt, shame, and self-pity (Sugathan et al., 2017).

### 5.1.4 | Product-related psychological consequences

Customers value their self-designed products due to increased preference fit perceptions of the product (Franke et al., 2008, 2009, 2010; Franke & Schreier, 2010; Habicht & Thallmaier, 2017). Put differently, customers perceive that their customized products are better aligned with their preference system compared to standard products (Franke & Schreier, 2010). Moreover, customized products reflect customers' uniqueness and personality (Merle et al., 2010; Troye & Supphellen, 2012). Research shows that customers pay more for customized products because of higher perceived uniqueness, greater esthetic and functional fit (Franke & Schreier, 2008), and because such products allow customers to express their personal identities (Kaiser et al., 2017). Pursuant to this, customizing (vs. not) leads customers to perceive the product in line with their own self-image (Klesse et al., 2019).

### 5.1.5 | Firm-related psychological consequences

Interestingly, very few studies specifically refer to firm-related consequences of customer empowerment. Customer empowerment may enhance the relationship between customers and empowering companies (Hoyer et al., 2010); this in turn can have positive long-term consequences, as customers put more trust in such companies (Brodie et al., 2013; Füller et al., 2009; Nardi et al., 2020; Vivek et al., 2012).

### 5.1.6 | Task-related psychological consequences

Finally, our literature review reveals both positive and negative task-related psychological consequences. While (perceived) process intensity, complexity, and effort negatively influence customers, perceived process enjoyment, interface fluency, and tool support lead to positive consequences for customers (de Bellis et al., 2019; Franke & Schreier, 2010; Füller et al., 2009; Haumann et al., 2015).

### 5.1.7 | Discussion and research opportunities

Research has extensively examined how customizing, self-producing, and self-assembling products influences customers. Interestingly, most of the psychological effects occur on the customer and product level. Thus, while

co-creating products for oneself may lead to positive self-perceptions (e.g., feelings of accomplishment and competence) and positive product perceptions (e.g., perceived usefulness and product uniqueness), there does not seem to be an equivalent effect on the firm level. The positive behavioral effects on customers (e.g., higher purchase intentions) seem to be mainly driven by an improved customer-product (vs. customer-firm) relationship.

Previous work has identified multiple psychological mechanisms that help us understand why customers are more likely to purchase self-designed and self-produced products. Interestingly, most research stops there, and neglects to examine the psychological and behavioral effects of using and consuming customized, self-designed, or self-produced products. Kaiser et al. (2017) showed that task performance may increase when customers use self-designed products; these findings suggest that customers may use and consume such products differently. Therefore, one important direction for future research would be to examine customers' actual consumption and usage of self-designed products. How do customers feel when consuming or using customized, self-designed, and self-produced products? Do customers use self-designed products more often or longer? Finding answers to these questions could be especially interesting from a sustainability perspective; specifically, empowering customers to self-design and self-produce their products could increase product usage and encourage more sustainable consumption behavior (Sun et al., 2021). Although current research suggests that customization may decrease the resale value of products (Fuchs & Schreier, 2023), customers may be less likely to sell or share their "no-longer-in-use" self-designed products due to their strong personal attachments to such products. Similarly, findings from Trudel et al. (2016) show that a product linked to a customer's identity is less likely to be trashed, and more likely to be recycled. Examining whether these findings also apply to self-designed or self-produced products is worth investigating.

Imagine that a customer purchases a new closet at IKEA. She asks one of her friends to help her assemble the new product. While assembling the closet, the two friends argue about the best way to complete the task. In the end, neither of them can fully enjoy the assembled closet. Similarly, think of a couple customizing a photo-book together online, featuring their last vacation. While they enjoy going through memories together, there is also potential for conflict. They disagree about which photos to include in the album, and which design to use. These exemplary scenarios lead to an important question: How does customizing, designing, and producing products together with others influence customers, and how does this differ from solo empowerment activities? To the best

of our knowledge, previous research has exclusively focused on the psychological consequences of solo customer empowerment activities. However, as illustrated in the above scenarios, customers frequently engage in customer empowerment activities together. Consumer research shows that a lack of clarity concerning a partner's interests can reduce enjoyment of shared activities relative to solo activities (Wu et al., 2021). However, sharing experiences can also increase enjoyment (e.g., Caprariello & Reis, 2013). Similarly, co-creating products with others may lead to different positive and negative psychological consequences than creating products alone. Important questions in this context include: When do customers prefer to design/produce products alone, and when do they prefer to do so with others? How should firms design “shared” customer empowerment experiences in order to increase customer satisfaction?

While previous research has focused on customers self-designing physical products, there is a dearth of studies examining the psychological effects on customers in an environment where digital and physical products are increasingly merging, and previously separate user experiences converge (Yoo et al., 2012). Nowadays, customers are empowered to customize their digital music playlists, news feeds, and app configurations. By introducing the Stem Player, artist Kanye West allows his fans to customize any song from his album, *Donda*, during playback. Listeners can, for example, control and isolate specific parts of a song, or loop and add effects. Moreover, with the advent of information-based currencies and digital collectibles such as nonfungible tokens (NFTs), consumers are now empowered to self-design their very own NFT collections. In addition, they may have the option of creating a digital representation of their self-designed products as NFTs. However, research has provided no insight thus far into the psychological effects of customizing digital products, or the interplay between physical products and new forms of digital ownership. Customizing digital products may differ considerably from customizing their physical counterparts. For example, recent research shows that consumers value digital products less than physical ones (Atasoy & Morewedge, 2018), and may perceive a lesser degree of psychological ownership for digital products (Morewedge et al., 2021). Therefore, examining the psychological differences between customizing digital and physical products would be a promising field for future research. Furthermore, in today's digitized world, customers frequently share their customization experiences with others (e.g., by messaging a friend or sharing their self-designed products on social media). Recent research suggests that sharing one's customization experience increases feelings of pride in a customized

product (López et al., 2020). More research is necessary to develop a deeper understanding of the downstream consequences of sharing customization experiences with others in the digital sphere.

## 5.2 | By me for many: Participating customers × product made for many

In our literature review, we identified eight articles related to the psychological and behavioral consequences for customers who participate in creating products for the broader market (see Figure 6 for an overview of the identified effects). The articles mainly focus on the ideation stage.

### 5.2.1 | Behavioral consequences

Participating customers derive much intrinsic and extrinsic value from their active involvement in the NPD process, leading to different behavioral effects (Fedorenko et al., 2017; Vivek et al., 2012). Fuchs et al. (2010) show that customers who are empowered to select the products to be marketed by a firm express a stronger demand for the underlying products, compared to customers without such empowerment. Moreover, customers perceive the cocreated products to be more fun to use, are willing to take better care of them, and are more likely to defend the products verbally in public if necessary. Further, Nardi et al.'s (2020) meta-analysis shows that increased customer participation in NPD leads to higher brand satisfaction and loyalty. However, customers who first submit a product idea and are consequently rejected experience a face threat, leading to a potential decrease in future idea sharing with the underlying company (Fombelle et al., 2016).

### 5.2.2 | Moderating factors and boundary conditions

The positive behavioral effects are attenuated if the outcome of the joint decision-making process does not reflect customers' preferences, and if customers do not feel competent to make sound decisions (Fuchs et al., 2010). While Nardi et al. (2020) demonstrate a generally positive impact of customer empowerment on brand satisfaction and loyalty, their analysis also identifies an interesting cultural boundary condition of this relationship: in cultures with low levels of individualism, the effect of customer participation on brand satisfaction is stronger compared to cultures with higher levels of

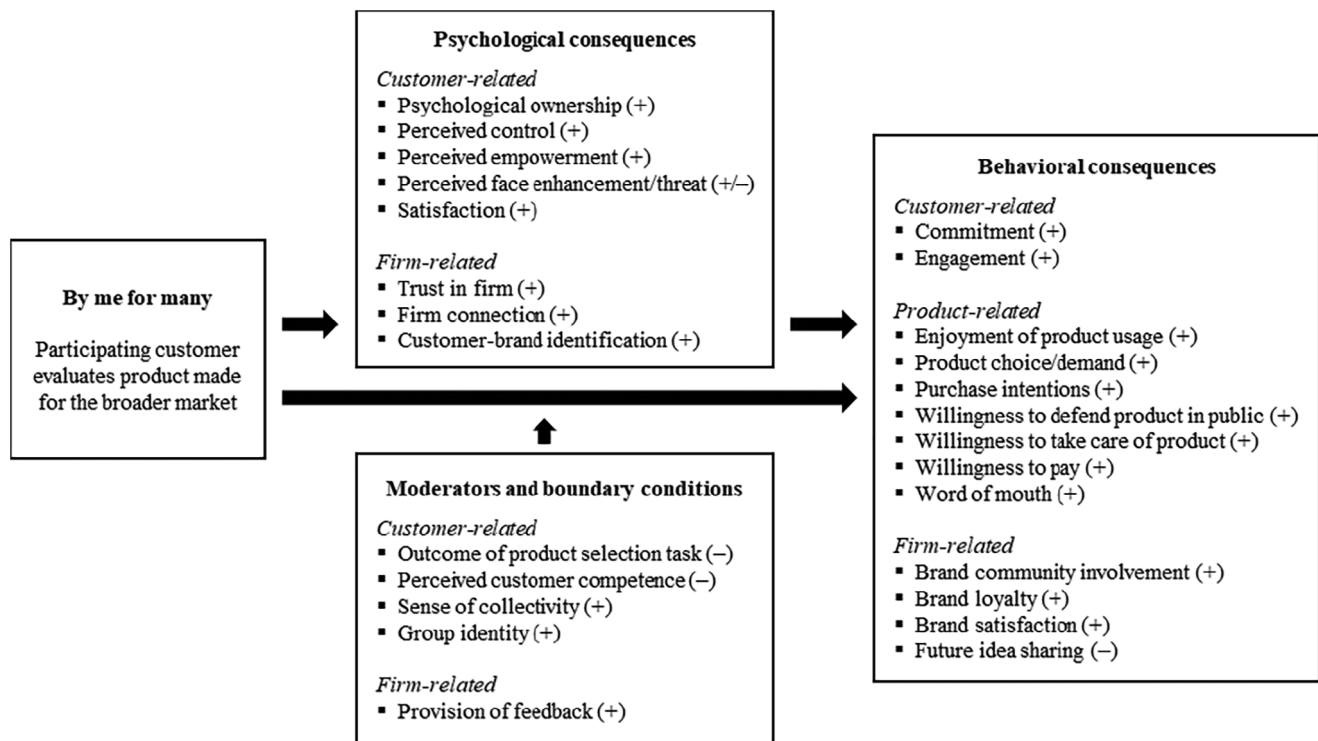


FIGURE 6 Psychological and behavioral consequences (“By me for many”).

individualism. Finally, Fombelle et al. (2016) show that the negative consequences of rejecting ideas can be mitigated when companies actively counteract them, for example, by creating a group identity or providing an excuse.

### 5.2.3 | Customer-related psychological consequences

Only one study explicitly examined customer-related psychological consequences on the customer-level: Fuchs et al. (2010) find that their identified “empowerment-product demand” effect can be attributed to empowered customers developing a sense of psychological ownership for the product they helped create. Moreover, such customers perceive that they have higher levels of control over the company's production and innovation process (Schweitzer & Mai, 2022).

### 5.2.4 | Firm-related psychological consequences

Empowered customers are more likely to trust and develop stronger connections with empowering firms (Fedorenko et al., 2017). Nardi et al. (2020) argue that placing greater trust in an organization shows that

customers project their positive experiences with the cocreation process onto the underlying companies. Further, Vivek et al. (2012) suggest that customer engagement increases trust in the underlying company because customers infer that the company cares about them and their interests.

### 5.2.5 | Discussion and research opportunities

Technological developments (e.g., online communities, online toolkits, and 3D printing) and societal trends (e.g., consumer activism, democratization, and calls to reduce inequality in the marketplace) have increased the relevance of empowering customers to develop products for the broader market. However, thus far only a limited amount of literature has investigated the psychological and behavioral consequences for participating customers who help create products for the broader marketplace. Interestingly, our literature review reveals that in such situations, the psychological consequences mainly occur on the customer and firm levels, but not the product level.

However, we still know very little about the customer-related psychological consequences of customer empowerment. How do customers feel when creating new products for the entire market? Do customers who

create for the broader marketplace (vs. themselves) perceive their innovation efforts and outcomes differently? Which psychological consequences come into effect for contributors who create new products that are subsequently used by many others? How do these “part-time” designers (e.g., users on crowdsourcing platforms) perceive their own creations, which can be purchased by other customers? How do customers feel when seeing products they created on store shelves, or being used by other customers—and how can firms benefit from this? For example, recent research shows that individuals selling their own products interpret sales as a positive signal from the market, which is in itself a source of self-validation, thus increasing their happiness (Schnurr et al., 2022). Similarly, empowered customers are likely to feel validated and proud, and may strongly self-identify with the respective firm. How do these feelings influence subsequent customer decision-making and (long-term) behavior? How can companies leverage the potential of a strong connection with their participating customers to increase market success? Research provides little insight into the negative psychological and behavioral consequences experienced by customers who are empowered to select and design products for a broader market. Generally, firms select only a small subset of submitted product ideas. If a firm rejects a customer’s idea, it could negatively affect that customer relationship. Customers may feel disappointed if a firm does not choose their new product ideas, and thus be less likely to participate in future crowdsourcing activities (Fombelle et al., 2016; Piezunka & Dahlander, 2019). Moreover, these disappointed customers may speak negatively to their peers about the firm, post bad reviews online, and even stop purchasing the firm’s products. There might also be negative psychological effects for customers whose ideas are implemented successfully. Customers may develop an unhealthy sense of pride and brag about their success. Such customers may also feel pressured to perform just as well in the future, which could negatively influence their personal well-being and relationships with respective firms. Another form of empowerment that has garnered increasing interest recently is consumer activism. Consumer activism aims to influence companies to change the way they produce and sell products (Neureiter & Bhattacharya, 2021). If companies fail to meet their obligations in the eyes of their customers, negative consequences can arise—such as the formation of anti-brand communities and customer boycotts (Hollenbeck & Zinkhan, 2006). It would be intriguing to explore how customer empowerment and consumer activism (which is often politically motivated) could be aligned. Moreover, future research is necessary to elucidate how consumer activism can motivate firms to

develop new (more sustainable) products and how this, subsequently, may influence consumer perceptions of such firms and their products. In addition, recent research has started to acknowledge the significant influence of artificial intelligence (AI) on various aspects of innovation management, such as ideation and idea evaluation (Bouschery et al., 2023; Gama & Magistretti, 2023). In crowdsourcing, for example, AI-enabled systems may support crowd workers in evaluating ideas (Freisinger et al., 2023). This increased integration of AI in customer empowerment may potentially lead to negative psychological and behavioral outcomes for customers. For example, customers’ heavy reliance on AI during the ideation process might diminish their feelings of psychological ownership or accomplishment. Future research is necessary to better understand when the use of new technologies in customer empowerment, such as AI, provide (vs. reduce) value for customers.

Finally, in addition to the short-term effects on customers, actively contributing to a firm’s market offerings may also lead to multiple long-term effects. For example, customers may develop a strong emotional bond and long-term connection with a firm after successfully developing a product for that firm (Nardi et al., 2020). Customers may actively market their self-designed products to others. Going one step further, customers may even intentionally serve as brand ambassadors who speak positively about the firm and recommend its products (in general) to others (e.g., in social media communities). Additionally, such customers may continuously buy new products from the underlying firm (even from other product categories).

### 5.3 | By others for many: Observing customers × product made for many

Based on our literature review, we identified 12 articles that focused on the psychological and behavioral consequences for observing customers who experience or learn about customer empowered products for the broader market (see Figure 7 for an overview of the identified effects).

#### 5.3.1 | Behavioral consequences

Most research has identified positive behavioral consequences of labeling a product as “user-designed” for observing customers. Research shows positive effects stemming from user-design empowerment on observing customers’ product preferences (Dahl et al., 2015; Paharia & Swaminathan, 2019), purchase intentions,

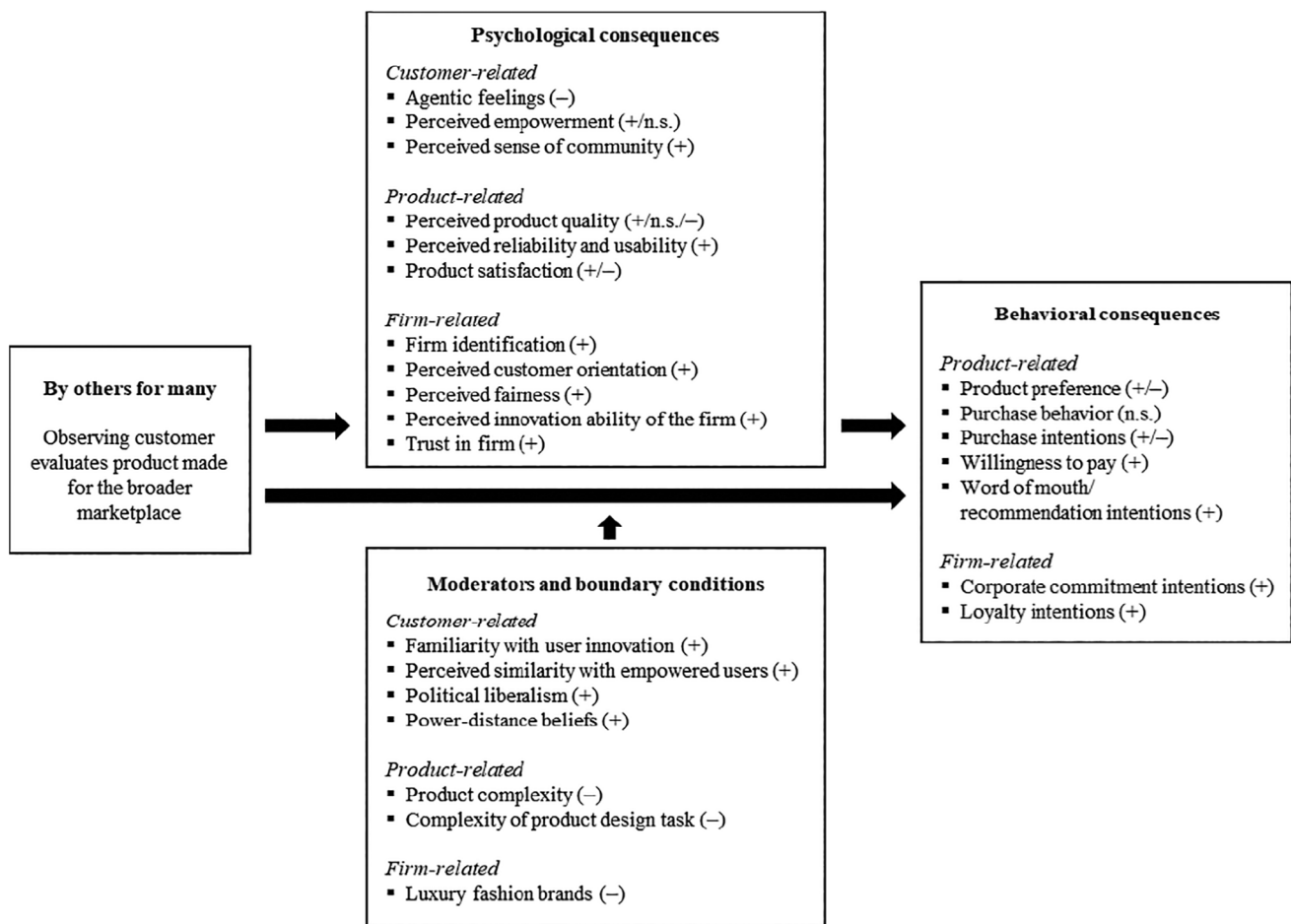


FIGURE 7 Psychological and behavioral consequences (“By others for many”).

loyalty intentions (Fuchs & Schreier, 2011), willingness to pay, and willingness to recommend the firm to others (Gebauer et al., 2013; Schreier et al., 2012). In accordance with this, Nishikawa et al. (2013, 2017) and Allen et al. (2018) find that customers prefer user-ideated products over designer-ideated products. However, Song et al. (2021) find no significant main effect of “user-designed” labels on observing customers’ actual purchase behavior.

### 5.3.2 | Moderating factors and boundary conditions

Moreover, research indicates several moderating factors and boundary conditions for these behavioral effects. Fuchs et al. (2013) show that demand for luxury products decreases when the product is labeled as user- (vs. company-) designed. They point out two underlying mechanisms for this backfiring user-design effect: lower product quality perceptions and reduced agentic feelings for user-designed products. However, these negative effects are attenuated if the users are (1) legitimized by the firm, (2) described as artists, or (3) celebrities.

Moreover, for highly complex products, design tasks, and customers with low user innovation familiarity, the positive behavioral effects disappear (Schreier et al., 2012). Finally, literature highlights that customers’ power-distance beliefs are another important moderating factor (Paharia & Swaminathan, 2019; Song et al., 2021). While low power-distance belief customers prefer user-designed products over designer-designed products, customers with high power-distance beliefs prefer designer-designed products over user-designed products. Paharia and Swaminathan (2019) further indicate that customers’ political orientation serves as a proxy for power-distance beliefs, which also moderates the positive user-design effect. In particular, the findings show that liberals prefer user-designed products, whereas conservatives show no difference in product preferences.

### 5.3.3 | Customer-related psychological consequences

Several articles identify psychological effects on the customer level. Although not actively participating in the

NPD, observing customers feel more psychologically empowered by user-driven (vs. designer-driven) firms (Dahl et al., 2015; Schweitzer & Mai, 2022). Paharia and Swaminathan (2019) find that these positive feelings of empowerment only occur for customers with low power-distance beliefs. Moreover, findings from Gebauer et al. (2013) highlight customers' fairness perceptions and perceived sense of community as two important psychological consequences in online innovation communities.

### 5.3.4 | Product-related psychological consequences

Research shows that customers perceive user-designed (vs. company-designed) products to be of higher quality (Nishikawa et al., 2017). Importantly, Paharia and Swaminathan (2019) find that this positive quality inference only occurs for customers with low power-distance beliefs, and not for customers with high power-distance beliefs.

### 5.3.5 | Firm-related psychological consequences

Research has identified several psychological effects on the firm level. Customers perceive firms that foster customer empowerment in their NPD process as having a significantly higher customer orientation (Fuchs & Schreier, 2011) and innovation ability (Schreier et al., 2012). Moreover, customers are more likely to trust (Song et al., 2021) and identify (Dahl et al., 2015) with firms that empower their customers.

### 5.3.6 | Discussion and research opportunities

Heretofore, most research in this area has focused on the positive effects of firms' customer empowerment activities on customers, thereby advocating for the many benefits of customer empowerment. However, there may also be a "dark side" to customer empowerment. Products selected and designed by other users may evoke unfavorable associations, and thus elicit undesired outcomes for firms. While literature indicates that labeling products as "user-designed" can backfire in the context of luxury brands (Fuchs et al., 2013) and customers with high power-distance beliefs (Song et al., 2021), our understanding of negative psychological and behavioral consequences for observing customers is still very limited. Therefore, future studies could investigate and uncover

important boundary conditions of customer empowerment strategies. Such boundary conditions may reside within the organizational context (firm level), the individual customer's characteristics (customer level), the specific product category (product level), or the broader environment (context level). At the firm level, future research could examine whether customer empowerment leads to negative customer responses to specific firm characteristics (e.g., firm size, industry type, and brand personality). At the customer level, future research could investigate which customer traits might account for the unwanted consequences of firms' customer empowerment activities. For example, how do customers from different cultural backgrounds react to customer empowerment? On the product level, further research could, for instance, study whether customer empowerment labels might backfire for specific product designs (e.g., typical vs. atypical design), product categories (e.g., sustainable vs. nonsustainable products), and product characteristics (e.g., utilitarian vs. hedonic). Finally, on the context level, future research could examine whether customers prefer user-designed products when purchasing them as gifts for others (vs. themselves).

Further, our literature review revealed that most research examines the psychological effects on observing customers at the purchase stage, while neglecting other stages of the customer journey. Literature conceptualizes the customer journey in three overall stages: pre-purchase, purchase, and post-purchase (Lemon & Verhoef, 2016). The pre-purchase stage includes the entire experience before the purchase (e.g., need recognition, search, and consideration). In this context, future research could consider how learning that a firm empowers its customers influences other customers before buying a product. Imagine, for example, a customer who reads an article about a firm's crowdsourcing platform, thereby learning how the firm uses ideas from its user community. How may this influence his inferences about the firm? How may this influence his expectations regarding the firm's offerings, or affect his future search behavior when buying products for himself or others?

The post-purchase stage encompasses customer interactions with the firm and its environment following the actual purchase (e.g., consumption, usage, repurchase, decisions to return products, and word of mouth). The post-purchase stage is critical for firms; this is when customers determine their future loyalty to a product (through repurchase and further engagement). However, research provides no insight into consumer behavior in the post-purchase stage. Do customers use and consume user-designed products differently? Are they less likely to return such products (e.g., due to lower expectations)?



## 5.4 | By others for one: Observing customers × product made for one

Based on our literature review, we identified five articles that focused on the psychological and behavioral consequences for observing customers presented with a customer-empowered product made by another individual (please see Figure 8 for an overview of the identified effects).

### 5.4.1 | Behavioral consequences

Seeing the self-designed products of others has behavioral consequences for observing customers. D'Angelo et al. (2019) show that when encountering a customized product created by another person, customers infer that the other person sought to express uniqueness. The authors demonstrate that customers subsequently express their own uniqueness through their customization choices. Interestingly, this heightened motivation to express uniqueness leads customers to choose fewer best-selling options, increases their willingness to pay for unique options, and may even lead them to sacrifice their own preferences. In addition, findings from Moreau and Herd (2010) indicate that when comparing self-designed products with “off-the-rack” ones designed by professionals (i.e., upward comparison), customers give their self-designed products lower evaluations than when comparing their self-designed products with those of other customers (i.e., equivalent comparison). Moreover, while customers are willing to pay significantly more for their

own self-designed products, they are not willing to pay more for the self-designed products of others (Franke & Piller, 2004; Fuchs & Schreier, 2023).

### 5.4.2 | Moderating factors and boundary conditions

Findings from D'Angelo et al. (2019) show that customers' motivation to express uniqueness is stronger when inferences are made regarding a close (vs. distant) other individual. Moreau and Herd (2010) show that the negative effect of comparing self-designed products with products designed by professionals is attenuated when customers are prompted to process defensively, or granted the opportunity to repair their threatened self-regard by purposefully engaging in a related task. Moreover, Fuchs and Schreier (2023) show that the uniqueness-hurts-resale effect is moderated by seller type: whereas professional sellers demonstrate a negative effect, the effect is reversed for individual sellers. Furthermore, the uniqueness-hurts-resale effect is attenuated for common (vs. unique) product designs.

### 5.4.3 | Customer-related psychological consequences

D'Angelo et al. (2019) demonstrate that when encountering a customized product created by another person, observing customers are motivated to express uniqueness. Besides that, Fuchs and Schreier (2023) show that the

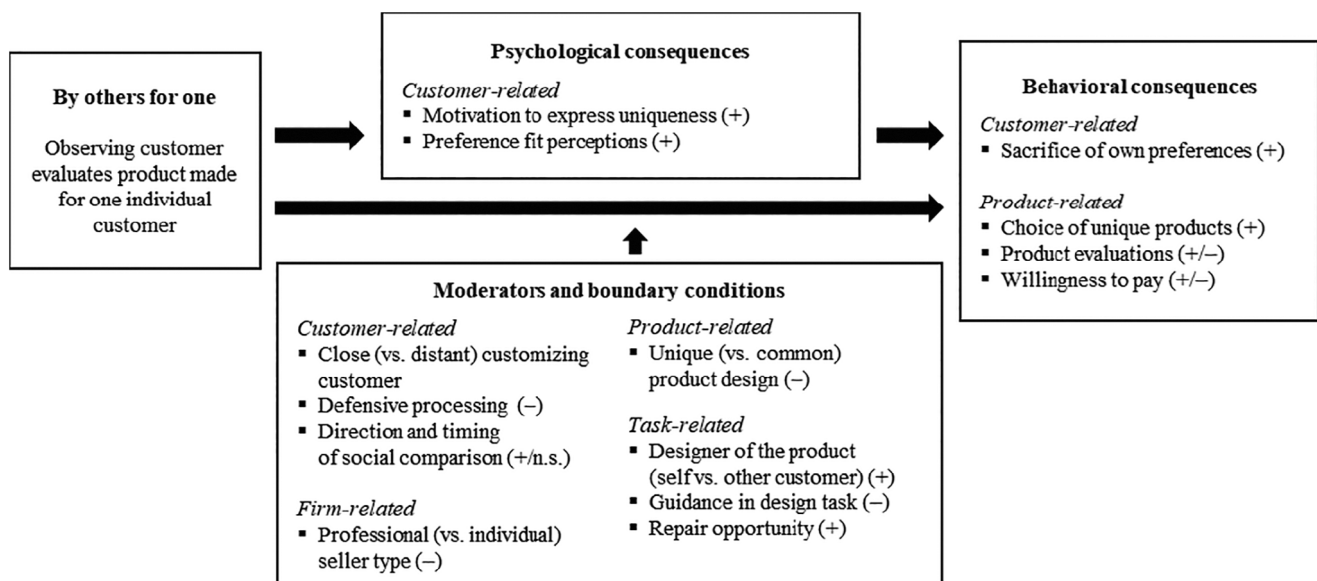


FIGURE 8 Psychological and behavioral consequences (“By others for one”).

more unique a customized product design, the lower secondhand-market customers' preference fit perceptions.

#### 5.4.4 | Product-related psychological consequences

Customers perceive products customized for close others (vs. themselves) to be more unique. This effect is mediated by creator thoughtfulness in product design. Moreover, gift recipients perceive the gifts to be more unique than do their creators, and these perceptions increase feelings of appreciation (Yin et al., 2020).

#### 5.4.5 | Discussion and research opportunities

Future researchers might consider delving into how customers feel when they encounter others with customized products. Previous research shows that when exposed to a customized product created by another person, customers assume this other person was motivated to express uniqueness (D'Angelo et al., 2019). In fact, consumer research and social comparison theory show that customers regularly compare themselves to others (Moreau & Herd, 2010). Therefore, seeing another individual with a customized product may lead to different psychological effects, such as feeling less unique, feeling envious, and feeling the need to find other ways to express oneself. For example, on social media, customers regularly share pictures of their customized products with others. Observing others on social media, however, can lead to social comparisons, which in turn can evoke feelings of envy. Therefore, we encourage researchers to explore the underlying psychological mechanisms when customers engage with the customized products of others. How do customers perceive the customized products of others? Which concrete psychological consequences occur when they see such products? How do they feel when they compare themselves with others who display their customized products offline or online?

We see great potential for research to strengthen our understanding of how the customization activities of others influence customers' decision-making and behavior. In particular, there is a pressing need to examine if (and when) exposure to another person's customized product may influence customers' likelihood to engage in customization activities themselves. Could a spillover effect be possible? In addition, it would be interesting to consider how seeing another person's customized product influences customers' purchase decisions. Are customers

more likely to purchase products that highlight uniqueness and allow self-expression? How does this affect spending behavior? Table 2 summarizes the research opportunities for each customer empowerment situation.

## 6 | REFLECTIONS ACROSS SITUATIONS: SIMILARITIES AND DIFFERENCES

Across all four customer empowerment situations, our literature review identified predominantly positive effects on customers; in fact, only 15 articles out of our entire sample revealed negative consequences for customers (see Table A1 in the Appendix). Most studies (92.4%) found that customers react more positively toward customer-empowered products, and are more likely to purchase them. Interestingly, these behavioral consequences do not depend on whether customers participated in the customer empowerment activities or not, or whether the product is intended for them personally or the broader market. Hence, a promising direction for future research might be to focus on the negative consequences for customers, in order to gain a more realistic picture of customer empowerment. Additionally, while most of the extant literature focuses on the early stages of the NPD process (56 articles) and less research attention has been paid to the later stages (13 articles), it seems that positive consequences for customers may occur across stages: 92.8% of articles at the beginning (and 92.3% of articles at the later) stages reveal positive effects. Interestingly, findings from Alptekinoglu et al. (2023, "By me for many") suggest different results; namely, the positive effects should be stronger at the later (vs. earlier) stages of the NPD process. However, even when focusing solely on the "By me for many" customer empowerment situation, our literature review provides no evidence that the positive effects on customers occur predominantly in the later stages.

Moreover, we identified certain universal boundary conditions that apply across different customer empowerment situations. For luxury brands, to give an example, empowering customers may have detrimental consequences by negatively influencing both observing customers (Fuchs et al., 2013) as well as participating customers (Moreau et al., 2020). This finding highlights the risk that customer empowerment can create for luxury brands. One reason for this could be that luxury brands—compared to their more mainstream counterparts—signify higher exclusivity. Regular customers (compared to luxury product designers) are perceived to have low levels of expertise (Fuchs et al., 2013), decreasing demand for customer-empowered luxury

TABLE 2 Future research directions.

Situation	Future research directions and exemplary research questions
By me for one	<p><i>Psychological and behavioral consequences across the product life cycle:</i></p> <ul style="list-style-type: none"> <li>• How do consuming and using self-designed products differ from using standard products? Do customers use self-designed products more often or longer?</li> <li>• What are the positive (e.g., higher willingness to repair) and negative (e.g., overconsumption) psychological effects on consumers when using and consuming self-made products?</li> </ul> <p><i>Customizing, designing, and producing products with others:</i></p> <ul style="list-style-type: none"> <li>• How does customizing, designing, and producing products together with others influence customers, and how does this differ from solo empowerment activities?</li> <li>• When do customers prefer to design/produce products alone, and when do they prefer to do so with others? How does customers' decision-making differ when co-creating with others?</li> <li>• How should firms design "shared" empowerment experiences to increase customer satisfaction?</li> </ul> <p><i>Customizing and self-designing in an increasingly digitized world:</i></p> <ul style="list-style-type: none"> <li>• What are the psychological differences between customizing digital and physical products?</li> <li>• How do psychological consequences for products with both digital and physical elements differ compared to mere physical products (e.g., perceived ownership)?</li> <li>• What are the consequences of sharing one's customization experiences (e.g., on social media)?</li> <li>• How does customizing and designing with the help of artificial intelligence (AI) influence customer behavior and perceptions?</li> </ul>
By me for many	<p><i>Positive and negative effects on empowered customers:</i></p> <ul style="list-style-type: none"> <li>• How do consumers feel when creating new products for the entire market? How do these feelings influence subsequent customer decision-making and (long-term) behavior?</li> <li>• Which psychological consequences occur for customers who create new products that are subsequently used by many others?</li> <li>• What are potentially negative reactions and emotions of empowered customers?</li> </ul> <p><i>Managing and leveraging empowered customers for (long term) success:</i></p> <ul style="list-style-type: none"> <li>• How can companies leverage the potential of a strong connection with their participating customers to increase market success? How can firms generate positive long-term effects from them?</li> <li>• How does participating in a firm's market offering influence the relationship between participating customers and the brand in the long term? Which positive and negative psychological long-term effects may occur at the customer level?</li> <li>• How do broader movements (e.g., consumer activism) influence a firm's NPD and how does this, subsequently, influence consumer perceptions of such firms and their products?</li> </ul>
By others for many	<p><i>The dark side of customer empowerment:</i></p> <ul style="list-style-type: none"> <li>• When do consumers prefer standard products to user-designed products?</li> <li>• What are the boundary conditions at the firm level (e.g., firm size, industry type, and brand personality), the individual consumer level (e.g., cultural background, personality traits), the product level (e.g., product design, product categories), or the context level (e.g., purchasing for oneself vs. for another person) of the positive effects of customer empowerment?</li> </ul> <p><i>The psychological consequences for observing consumers along the customer journey:</i></p> <ul style="list-style-type: none"> <li>• How are consumers influenced by a firm's customer empowerment activities in pre-purchase situations (e.g., how does this influence their search behavior)?</li> <li>• How do firms' customer empowerment activities influence consumers in the post-purchase stage? Do consumers use and consume user-designed products differently? Are they less likely to return such products (e.g., due to lower expectations)? Are consumers more loyal to customer-empowering firms?</li> </ul>
By others for one	<p><i>The psychological effects of others' customized products on consumers:</i></p> <ul style="list-style-type: none"> <li>• How will consumers perceive the customized products of others?</li> <li>• How do observing customers feel when they compare themselves with others who display their customized products offline or online? Which positive (e.g., admiration) and negative (e.g., envy) emotions occur? Which inferences do customers make about the personality and traits of the participating customer (e.g., perceived creativity, competence, and warmth)?</li> <li>• How does this influence observing customers relationship with the underlying brand?</li> </ul> <p><i>Downstream effects of seeing others' customized products:</i></p> <ul style="list-style-type: none"> <li>• How does seeing another person's customized product influence one's own customization effort and activities? How does it influence customers' future information search activities (e.g., search effort)?</li> <li>• How do the customized products of others influence consumers' purchase decisions and product choices (e.g., preference for more unique products)? How does it affect consumer spending?</li> </ul>

products. Similarly, customer empowerment activities seem ineffectual when (product or task) complexity is high. For participating customers, high levels of task complexity generally result in negative customer reactions (Hildebrand et al., 2014). Interestingly, even for observing customers, high levels of complexity (e.g., high-tech products) lead to negative outcomes (Schreier et al., 2012).

Besides these similarities, our literature review reveals important differences across customer empowerment situations and highlights an imbalance regarding past research attention. Most literature focuses on participating customers who cocreate products for one individual customer (52 articles). In particular, a large segment of our sample (more than 31%) highlights the significant attention research has placed on the subject of (mass) customization. This is not surprising, given that many scholars tout mass customization as a way for firms to gain a competitive advantage in today's marketplace (de Bellis et al., 2019). However, less research has examined the psychological and behavioral effects of mass customization on observing customers (17 articles). Interestingly, the amount of research in this area has increased in recent years, highlighting the heightened awareness and relevance for theory and practice (58.8% of these 17 articles were published after 2015).

Customer empowerment leads to different psychological consequences for participating and observing customers. One of the main reasons for these identified differences may be the fact that active engagement in the NPD process offers customers specific (psychological) benefits. For example, Moreau et al. (2020, "By others for many") indicate that "the customization process yields a genuinely exclusive product that will be sold solely to them." Specifically, being actively involved in product creation leads to certain product perceptions, which set self-created products apart from off-the-shelf products. These effects occur at different stages of the NPD process, from self-designing to self-assembling and self-producing products. Cognitive psychology literature (see, e.g., Inzlicht et al., 2018) helps us understand why these effects occur, and why there is such an abundance of research in this area. While individuals generally try to avoid effort, they also derive value from it. Thus, although self-designing, self-assembling, and self-producing products requires effort, it also holds value for customers. Specifically, our literature review shows that participating customers primarily experience positive task-related and product-related psychological consequences (effects found in 69.4% of articles focusing on participating customers). This is in line with cognitive psychology literature: effort feels rewarding while it is exerted (i.e., during the process; task-related), and effort

is valued in retrospect (i.e., the outcome; product-related). Put differently, for participating customers the psychological effects primarily occur on a product and task level, potentially resulting in more positive behavioral responses. In contrast, for observing customers (i.e., customers who did not invest their own effort) most of the psychological consequences occur on a firm level (29.4%). Hence, for such customers, the positive behavioral effects seem to be the result of their indirect and distant perceptions of the underlying company. For example, observing customers are more likely to purchase products from user-driven firms because they perceive them as more innovative (Schreier et al., 2012). These relationships can be explained by consumer inference literature (Kardes et al., 2004), which asserts that consumers make inferences about products based on the limited information available (about said company). Thus, observing customers first build inferences on a firm level that subsequently spillover to the product level, ultimately resulting in more positive customer reactions (e.g., purchase intentions).

Finally, creating products for one individual customer seemingly leads to similar psychological consequences, as opposed to creating products for many customers. Interestingly, for both customer empowerment types the psychological effects primarily occur on a product and customer level. This is surprising, as previous research suggests there might be strong differences between both strategies (Schreier et al., 2012). However, examining the moderating factors reveals important differences: with regards to *products made for one*, most moderating factors occur on the task and product level, whereas with *products made for many* the moderating factors occur exclusively on the customer and firm level. One reason for this could be that creating products for one individual customer is more "narrowed focused" (leading to product- and task-related moderators), compared to creating products for the broader market (leading to customer- and firm-related moderators).

## 7 | THEORETICAL CONTRIBUTIONS, PRACTICAL IMPLICATIONS, AND LIMITATIONS

This work took a customer perspective and focused on the psychological and behavioral consequences of customer empowerment in NPD. Based on customer empowerment literature (Fuchs & Schreier, 2011) and situational consumer research (Belk, 1975), we present a conceptual framework that integrates different customer empowerment situations. Our framework sheds light on the situational nature of customer empowerment, and

covers four distinct customer empowerment situations with their respective psychological and behavioral consequences for customers. In doing so, this work contributes to theory and provides important implications for practice.

## 7.1 | Theoretical contributions

By systematically reviewing and synthesizing literature regarding the behavioral and psychological consequences of customer empowerment, our work contributes to customer empowerment literature and sets the stage for future research in the field. Based on situational consumer research, we present a conceptual framework that considers varying customer empowerment situations. We show that customer empowerment may lead to different, situation-specific behavioral and psychological consequences for customers. Our framework reveals that customer empowerment not only has consequences for participating customers, but for observing customers as well. In addition, we show that cocreating products for one individual customer may lead to different psychological consequences than cocreating products for the broader market. Our research thus informs future research to consider the situational nature of customer empowerment when studying the phenomenon from a customer perspective.

More broadly, we demonstrate that taking a behavioral and psychological perspective on an individual level may be a promising theoretical lens with which to study innovation management. While innovation research has recognized the importance of understanding the human side of innovation, it has primarily focused on “people that are carrying out innovative endeavors in organizations” (Weiss et al., 2022, p. 283). Our research goes one step further and illustrates that in the context of open innovation, it is not only important to understand people within the organization (i.e., employees) but also those outside the organization (i.e., customers). For example, recent research demonstrates that university–industry collaborations might not only result in objectively better products, but also hold valuable marketing potential for customers (Maier et al., 2024). Interestingly, however, literature at the intersection between innovation management and consumer research is scattered and poorly integrated. While research in the field of innovation management has traditionally focused on the macro level of analysis (i.e., organization, industry, or country level), studying strategic drivers and consequences of innovation, consumer research has predominantly focused on the micro level (i.e., individuals). By focusing on customer empowerment, our research provides an

exemplary case: connecting these literature streams and integrating their perspectives advances our understanding of both fields. In this sense, we hope our work will inspire future research at the intersection of innovation management and consumer research.

## 7.2 | Practical implications

By providing insights into the psychology of customer empowerment, this work has important implications for practice. We advise innovation and marketing managers that customer empowerment should not only be considered from an aggregated firm perspective, but also from an individual customer perspective. Firms that already engage their customers in NPD can use our findings to understand how their current customer empowerment strategies may influence their customers. Looking at customer empowerment from a psychological and behavioral perspective may help firms better grasp why some customer empowerment strategies and business models work more effectively than others, and under which circumstances (Foss & Saebi, 2017). Furthermore, firms that already leverage customer empowerment in their NPD—as well as firms that intend to integrate it into their innovation strategy in the future—can likewise use our overview to identify appropriate customer empowerment strategies that may generate positive customer reactions, such as higher willingness to pay, increased purchase likelihood, and brand trust. Importantly, our findings also inform innovation and marketing managers as to when empowering customers can backfire and produce negative consequences for them. Hence, when designing customer empowerment strategies, innovation managers should ask themselves which specific behavioral and psychological effects said strategies might have on customers. Being aware of such subjective and intangible psychological factors—which have clear downstream consequences on objectively measurable key performance metrics—could determine the trajectory of a company's open innovation success.

Innovation and marketing managers can also use our insights to understand the situational nature of customer empowerment. On the one hand, firms should be aware that their customer empowerment activities may not only influence participating customers, but observing customers as well. On the other hand, firms should realize that different customer empowerment types (i.e., empowering customers to cocreate *products made for one* vs. *products made for many*) lead to different behavioral and psychological effects. By combining these two dimensions, we provide firms with a useful framework (and synopsis) of the most relevant consequences

for different customer groups across different customer empowerment strategies. Innovation and marketing managers can use our framework to better discern (1) when to *integrate* customers in the NPD process and (2) when to *communicate* these empowerment activities to the market. For example, our literature review provides ample evidence that the expression of one's own personality and enjoyment of the customization task are important factors that explain customers' willingness to pay for customized products. Innovation managers can use these insights to improve their customization processes in order to increase firm and customer value.

### 7.3 | Limitations and future research

The current research has several limitations that provide opportunities for future research. First, we have focused solely on the behavioral and psychological consequences of customer empowerment in NPD, and excluded articles from the service literature. While this focus appears legitimate (Cui & Wu, 2018), it reduces the generalizability of the findings. Future research could structure and synthesize the behavioral and psychological consequences of customer empowerment in the service realm, and examine how these differ from customer empowerment in NPD. Moreover, we did not explore the relationship between the antecedents and consequences of customer empowerment, as our proposed framework aimed to cover the effects on both participating and observing customers. However, investigating the antecedents of customer empowerment and their subsequent psychological and behavioral effects, particularly among participating customers, would be another valuable area for future research.

Second, this research emphasizes the customer perspective on customer empowerment, as opposed to the firm perspective; thus, we shed light on only one side of the coin when it comes to understanding the consequences of customer empowerment. Extant literature, however, demonstrates that customer empowerment in NPD has important consequences on a firm level as well (Chang & Taylor, 2016); future research should strive to combine these two perspectives. For example, it would be interesting to see how customer-related and firm-related consequences interact (in positive and negative ways) with each other.

Third, our framework presents one way to structure the psychological and behavioral consequences of customer empowerment. While we theoretically based our framework on situational consumer research and customer empowerment literature, there might be other potentially interesting ways to conceptualize customer empowerment. For example, Acar and Puntoni (2016)

conceptualized customer empowerment along different customer engagement levels. Future research could use different conceptualizations to provide additional insights into the psychology of customer empowerment.

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The authors declare no conflicts of interest.

### ETHICS STATEMENT

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APPENDIX A

TABLE A1 Literature overview of the psychological and behavioral consequences of customer empowerment.

Authors (Year)	Situation			Used customer empowerment terminology	Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many	By others for one	By others for many						Customer	Firm	Product	Task	Positive	Negative
Acar and Puntoni (2016) <sup>a</sup>	x		x	Customer empowerment	Ideation, product development, commercialization	Product demand, recommendation intentions	Initial idea quality (purchase intent)	Customer satisfaction, product perceptions, firm perceptions	x	x	x		x	
Allen et al. (2018)		x		Design crowdsourcing	Ideation	New product performance	Initial idea quality (purchase intent)	Perceived reliability and usability		x			x	
Alptekinoglu et al. (2023)	x			Mass customization	Product development	WTP, time to product disposal, product attitude, purchase intention	Stage in the production cycle	Product satisfaction		x			x	
Atakan et al. (2014)	x			Self-production and self-design	Product development, post-launch		Involvement level (low vs. high)	Identification with the product, affective commitment, product evaluation		x			x	x
Bendapudi and Leone (2003)	x			Co-production	Product development		Outcome of the co-production task, participation choice	Firm satisfaction		x			x	x
Brodie et al. (2013) <sup>a</sup>	x	x		Consumer engagement	Product development	Loyalty, satisfaction, commitment		Perceived empowerment, firm connection, emotional bonding, trust		x			x	
Brunner and Dholakia (2018)	x			Product self-creation	Post-launch	Mindful consumption	Customer self-consciousness	Well-being, product appreciation		x			x	
Buechel and Janiszewski (2014)	x			Customized assembly	Post-launch	Product value (WTP)	Ease of assembly	Infused creativity		x			x	x
Choi et al. (2022)	x			Customization	Product development		Luxury (vs. mainstream) brand	Well-being, feelings of self-authenticity		x			x	
D'Angelo et al. (2019)	x		x	Customization	Product development	Product choice/choice similarity, WTP	Social distance of example source	Motivation to express uniqueness		x			x	x
Dahl et al. (2015)		x		User-designed products	Product development	Product preference	Perceived similarity, community openness	Perceived empowerment, firm identification		x			x	x

(Continues)

TABLE A1 (Continued)

Authors (Year)	Situation		Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many one	By others for many others					Used customer empowerment terminology	Customer	Firm	Product	Task	Positive Effect
de Bellis et al. (2015)	x		Product development	Product purchase; social sharing of customized product, configuration duration	High (vs. low) uncertainty avoidance				x		x	
de Bellis et al. (2019)	x		Product development	Conversion rate, purchase likelihood, WTP, click-through rates	Culture-specific processing style	Product satisfaction, interface fluency		x		x		x
Fedorenko et al. (2017) <sup>a</sup>	x		Ideation	Long-term relationship, commitment		Consumer-brand identification		x			x	
Fombelle et al. (2016)	x		Ideation	Future idea sharing		Perceived face enhancement, perceived face threat				x		x
Franke and Hader (2014)	x		Product development	WTP	Prior level of preference insight	Preference insight		x			x	
Franke and Piller (2004)	x	x	Product development	WTP	Designer of the self-designed product (oneself vs. another consumer)						x	
Franke and Schreier (2008)	x		Product development	WTP	Consumer need for uniqueness	Perceived uniqueness; aesthetic and functional fit				x		
Franke and Schreier (2010)	x		Product development	WTP	Preference fit	Perceived process enjoyment, perceived process effort				x		
Franke et al. (2008)	x		Product development	WTP, purchase intention	Peer customer input	Preference fit				x		
Franke et al. (2009)	x		Product development	WTP, purchase intention, product attitude	Consumer preference insight, ability to express preferences, product involvement	Preference fit				x		
Franke et al. (2010)	x		Product development	WTP	Preference fit, perceived contribution to the self-design process	Feelings of accomplishment				x		

TABLE A1 (Continued)

Authors (Year)	Situation			Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many	By others for one	By others for many					Customer	Firm	Product	Task	Positive	Negative
Fuchs and Schreier (2011)	x	x	x	Ideation, product development	Corporate attitude, purchase intention, loyalty intention, WOM, commitment	Seller type (professional vs. Individual seller)	Perceived customer orientation	x					x
Fuchs and Schreier (2023)	x		x	Product development	WTP, WTA	Seller type (professional vs. Individual seller)	Preference fit	x					x
Fuchs et al. (2013)	x		x	Product development	Product preference	Social distance in user design, status relevance of product category	Perceived design quality, agentic feelings	x		x			x
Fuchs et al. (2010)	x		x	Ideation	WTP, purchase intentions	Outcome of the product selection task, perceived competence	Psychological ownership	x			x		x
Füller et al. (2009)	x		x	Product development	Future intentions to participate	Product involvement; task involvement, lead user characteristics, level of individual creativity	Perceived empowerment, perceived enjoyment, experienced tool support, experienced enjoyment	x		x	x		x
Gebauer et al. (2013)		x	x	Ideation	WOM, WTP		Product satisfaction, perceived fairness, sense of community	x		x			x
Habicht and Thallmaier (2017)	x		x	Product development	Purchase intention, recommendation intention		Creative achievement value, hedonic value, perceived preference fit	x		x			x
Haumann et al. (2015)	x		x	Post-launch		Value-enhancing communication strategies	Co-production intensity, process satisfaction, (satisfaction with the co-produced product)	(x)		x			x
Hildebrand and Schlager (2019)	x		x	Product development	Product evaluation (conventional choice index), choice regret	Majority versus minority preferences	Focus on others, fear of negative evaluation from others	x		x			x

(Continues)

TABLE A1 (Continued)

Authors (Year)	Situation			Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many	By others for one	By others for many					Customer	Firm	Product	Task	Positive	Negative
Hildebrand et al. (2014)	x			Product development	Choice satisfaction, feature richness of customized product, shoppers' transaction data		Complexity of customization process, mental simulation of product use	x		x		x	
Hoyer et al. (2010) <sup>a</sup>	x	x		Consumer cocreation	Engagement	All stages	Satisfaction	x				x	
Jiang et al. (2015)	x			Product development	Likelihood of product return, price sensitivity		Perceived knowledge gain	x		x		x	x
Kaiser et al. (2017)	x			Product development	Product performance, identity affirmation		Self-identity expression, motivation to use the product	x		x		x	x
Kaplan et al. (2007)	x			Product development	Intention to adopt a mass-customized product		Perceived ease of use, perceived usefulness			x		x	x
Khamitov and Puzakova (2022)	x			Product development	Purchase intention	Co-creation context						x	x
Klesse et al. (2019)	x			Product development	Self-image-consistent product perception, recommendation intentions		Product category, goal outcome desirability, performance feedback, identity imbued in product			x		x	x
Köcher and Wilcox (2022)	x			Post-launch	Task performance		Self-efficacy					x	
Merle et al. (2010)	x			Product development			Perceived product value, perceived experience value			x		x	x
Mochon et al. (2012)	x			Post-launch	WTP		Feelings of competence			x		x	x
Moreau and Herd (2010)	x	x		Product development	Product evaluation, WTP		Need to signal perceived competence threat					x	x
				Product development	Product evaluation, WTP		Direction and timing of social comparison, customization guidance, defensive processing					x	x

TABLE A1 (Continued)

Authors (Year)	Situation			Effect level			Effect direction							
	By me for many one	By others for many one	By others for many	Used customer empowerment terminology	Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Customer	Firm	Product	Task	Positive Effect	Negative Effect
Moreau et al. (2020)	x			Customization	Product development	Purchase intent	Luxury (vs. mainstream) brand, design freedom, brand logo prominence, brand signature prominence						x	x
Moreau et al. (2011)	x			Customization	Product development	WTP	Intended recipient of the product, presence of a strong brand, perceived design skill	Anxiety, product expectation, product satisfaction	x		x		x	x
Nardi et al. (2020)	x			Customer participation	All stages	Brand loyalty, brand performance	Cultural sense of collectivity	Firm trust, brand satisfaction		x			x	x
Nishikawa et al. (2017)		x		Crowdsourcing	Ideation	Number of units sold, product preference		Perceived product quality			x		x	
Nishikawa et al. (2013)		x		User design	Ideation	Real purchase behavior (unit sales, sales revenue, gross margin)							x	
Norton et al. (2012)	x			"IKEA effect"	Post-launch	WTP	Level of task completion, consumers' DIY level		x		x		x	x
Paharia (2020)	x			Consumer-influenced production	Post-launch	Purchase intent, click-through rates, real product choice	Ethical aspects of production, diffusion of responsibility, broad responsibility	Feelings of guilt, feelings of gratification		x			x	x
Paharia and Swaminathan (2019)		x		User design	Ideation	Google Trends, CTR, brand preference	Power distance beliefs, political orientation (as proxy)	Feelings of empowerment, product quality perceptions		x		x	x	x
Randall et al. (2007)	x			User design	Product development	WTP	Customer expertise	Perceived fit, perceived comfort			x		x	x
Safi (2022)	x			Self-assembly	Post-launch	Recommendation intentions, perceived value for money (part of overall quality)		Perceived ease of assembly, product satisfaction			x		x	

(Continues)

TABLE A1 (Continued)

Authors (Year)	Situation			Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many	By others for one	By others for many					Customer	Firm	Product	Task	Positive Effect	Negative Effect
Schlager et al. (2018)	x			Product development	Product evaluations	Public (vs. private) customization system, analytic versus holistic thinking style, perceived closeness to input providers	Conformity to peer input	x		x		x	
Schreier et al. (2012)		x		Ideation	Purchase intention, WTP, WOM	Familiarity with user innovation, product complexity	Perceived innovation ability of the firm		x			x	
Schweitzer and Mai (2022)		x		Product development	Product choice, reduced impact of destructive behaviors by others	Design freedom	Perceived empowerment					x	
Song et al. (2021)		x		Ideation	Product preference, purchase behavior, purchase intention	Power distance beliefs, product complexity	Firm identification, perceived trust		x			x	
Stevens et al. (2017)		x		Product development		Types of control (cognitive, behavioral, and decisional), co-production intensity	Affective responses					x	
Sugathan and Ranjan (2020)		x		Product development	Intentions to participate in co-production in the future, intentions to increase effort in the future	Social presence of others			x			x	
Sugathan et al. (2017)		x		Product development		Degree of co-creation	Self-directed emotions (guilt, shame, self-pity), sadness, nature of the causal failure attributions					x	x
Troye and Supphellen (2012)		x		Post-launch	Outcome evaluation, input evaluation, taste perceptions	Self-production goal relevance, output quality	Perceived self-integration		x			x	
Valenzuela et al. (2009)		x		Product development	WTP, choice difficulty, purchase likelihood	Attribute trade-off salience	Choice satisfaction with the product			x		x	



TABLE A1 (Continued)

Authors (Year)	Situation				Stage in the NPD process	Behavioral consequences	Boundary conditions and moderating factors	Psychological consequences	Effect level			Effect direction		
	By me for many	By others for one	By others for many	Used customer empowerment terminology					Customer	Firm	Product	Task	Positive	Negative
Vivek et al. (2012) <sup>a</sup>	x		x	Customer engagement	Ideation	Affective commitment, word of mouth, loyalty, and brand community involvement		Trust in the firm		x			x	
Wiecek et al. (2020)	x			Co-creation	Post-launch	WOM, loyalty intentions	Product type (utilitarian vs. hedonic), ingredient branding	Product liking, product satisfaction, perceived ownership	x		x			x
Wilcox and Song (2011)	x			Self-customization	Product development	Spending (preference for high-price features), customization decisions	Discrepancy between actual and expected difficulty	Discrepant fluency			x			x
Yin et al. (2020)	x		x	Mass customization	Product development	WOM, loyalty intentions	Intended recipient (self vs. close others)	Perceived thoughtfulness in design (for creators), perceived product uniqueness, feelings of appreciation (for recipients)			x			x
Yoo and Park (2016)	x			Mass customization	Product development	Brand loyalty	Past customer loyalty, need for uniqueness	Product satisfaction			x			x

Abbreviations: CTR, click-through rates; DIY, do it yourself; NPD, new product development; WOM, word of mouth; WTA, willingness to accept; WTP, willingness to pay. <sup>a</sup>Conceptual/theoretical paper.