



Competing through innovation: Let the customer judge!

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ABSTRACT

Although customers are the final judges of innovations, their opinions on firms' innovations are rarely listened to. In this article, we developed a novel model for examining the antecedents and consequences of perceived firm innovativeness. We argue that when customers cognitively register changes in the value creation introduced by a firm, they perceive the firm as more innovative and, consequently, more attractive than its competitors. Using two waves of data from nationally representative samples (1,293 and 1,583 responses), we developed measures for examining changes in value creation that firms introduce and customers can perceive. We tested our theory by applying structural equation modeling to data from a nationally representative sample (5,812 responses). We found that firms that introduced changes affecting value proposition, value actualization, and interaction space were perceived as more innovative and more attractive than their competitors. Surprisingly, changes in relationship experience are negatively associated with perceived innovativeness and contribute to lower relative attractiveness in the market. One explanation is that firms introduce relationship innovations to safeguard future cash flows, which customers do not necessarily see as innovative.

1. Introduction

Since its earliest conceptualization, innovation has been considered the source of new value creation (Schumpeter, 1934). Initially characterized by firms' activities (Porter, 1985), value creation has evolved into the customer-centric notion defined as “the customer's process of extracting value from the usage of resources” (Grönroos & Gummerus, 2014, p. 209). However, much of the academic literature still views innovation as defined within the organizational domain in which managers have the strongest voice (Mendoza-Silva, 2020; Saunila, 2020). For example, in the Community Innovation Survey, which has served as an important data source for many researchers (e.g., Battisti & Stoneman, 2010; Laursen & Salter, 2006), managers assess whether what their firms have launched is a significant improvement. Managerial perceptions and reports also constitute the basis for our current understanding of innovation performance and its links to market performance (Gök & Peker, 2017; Mendoza-Silva, 2020). In some studies, managers even evaluate the extent to which their firms deliver “exactly what customers want” or what “exceeds customers' expectations” (Ngo & O'Cass, 2013, p. 1,139).

Such a firm-centric view inevitably leads to a focus on what is observable and possible to report for managers, such as changes in technical or functional characteristics, whereas customers' experiences of innovations remain underexplored (Andreassen, Lervik-Olsen, & Kurtmollaiev, 2017; Gustafsson, Snyder, & Witell, 2020; Christensen, Hall, Dillon, & Duncan, 2016). More importantly, the firm-centric view is inconsistent with contemporary value creation theories (e.g., Grönroos & Voima, 2013; Vargo & Lusch, 2004), because it over-emphasizes firms' activities constituting the provider sphere that is by definition closed to the customer and where no real value is created (Grönroos, 2017). Firms' innovation efforts that occur in the provider sphere are instead congruous with the notion of invention, and inventions become innovations only when they are commercialized and put into practice (Gustafsson et al., 2020; Schumpeter, 1934); that is, when they enter the joint sphere encompassing direct interactions between the firm and the customer (Grönroos, 2017; Grönroos & Ravald, 2011). Currently, the understanding of customers' innovation-related perceptions is limited to satisfaction with and loyalty to firms that customers perceive as innovative, whereas large-scale, generalizable research on customers' perceptions of firms' innovation efforts is lacking

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(Ghanbarpour & Gustafsson, 2022; Kunz, Schmitt, & Meyer, 2011). This situation is unfortunate given that customers are the actual recipients and evaluators of innovations, and innovations often directly influence customers' lives and well-being (Anderson et al., 2013). Furthermore, customers are key to firms' future revenue and cash flows (Tsai & Yang, 2013). Therefore, gaining a better understanding of customers' perceptions of firms' innovativeness can both enrich existing theoretical knowledge and provide strategic information to decision makers in firms.

In line with calls for novel approaches to studying innovations (Gustafsson et al., 2020; Ostrom, Parasuraman, Bowen, Lia, & Voss, 2015), we developed a customer-based framework to analyze firms' innovation efforts and investigated the antecedents and consequences of perceived firm innovativeness. Our point of departure was twofold: 1) customers—not managers or experts—are the users and thus the best judges of innovations (Gustafsson et al., 2020), and 2) the primary means of influencing the customer's perceptions of the firm's innovations and innovativeness is introducing changes in the joint sphere through the commercialization of new solutions (Grönroos, 2017; Grönroos & Voima, 2013). Consequently, we theorized that firms' innovation efforts taking place in the provider sphere are implemented through changes in the joint sphere, where they affect customers' perceptions and experiences. We also hypothesized that firms that are perceived as more innovative by their customers are perceived as more attractive than their competitors. We built a theoretically derived measurement instrument, tested it on two waves of data from nationally representative samples (1,293 and 1,583 responses), and, finally, used a nationally representative sample of customers (5,812 responses) to test our model.

This study makes several contributions to the innovation and marketing literature. Arguing that customers tend to form perceptions based on their overall experiences with firms rather than specific characteristics of concrete products, this study is the first to investigate the antecedents of perceived firm innovativeness from the value creation perspective based on service logic (Grönroos, 2011; Grönroos & Voima, 2013). We also provide a new theoretically derived and empirically validated instrument for measuring customers' perceptions of firms' innovations from a value-creation perspective. Moreover, the study offers novel insights into the consequences of perceived firm innovativeness other than the traditional satisfaction–loyalty link. Taking up the idea that customers' assessments of a focal firm should be seen in relation to other market players (Keiningham, Aksoy, & Williams, 2015), this study is the first to show that customers' perceptions of firm innovativeness guide their comparisons of competing firms. Finally, the study provides strategic insights into the central role of the customer-based measure of innovativeness in resource allocation, which firms can use in combination with existing and well established customer-based performance measures, such as customer satisfaction (e.g., Fornell, Johnson, Anderson, Cha, & Bryant, 1996).

2. Theoretical framework

2.1. Firm-centric and customer-centric views of innovativeness

The academic literature on firm innovativeness presents two distinct views on how to conceptualize and study firm innovativeness: an inside-out, firm-centric view and an outside-in, customer-centric view (Ghanbarpour & Gustafsson, 2022). Although both views see firm innovativeness as reflecting the frequency and extent of innovation-related activities, their analytic foci differ considerably, as shown in Table 1.

The firm-centric view builds on management theories and favors effort intensity (e.g., R&D expenditure, R&D manpower, patent applications, number of patents, product introductions, and share of new products). Its main focus is on how various characteristics of firm processes affect innovation and performance (Table 2). However, cumulative evidence suggests that these characteristics may have a low impact

Table 1

Firm-centric and customer-centric views of innovation and innovativeness.

	Firm-centric view	Customer-centric view
Basic philosophy	Innovation is defined within the provider sphere; success in innovation is determined by organizational factors	Innovation is defined within the joint sphere; success in innovation is determined by customers' experiences and perceptions
Interpretation of innovation	A discrete novel solution (e.g., new product/service, process, and business model)	A change in how customers and firms co-create value (e.g., a new way of fulfilling a "job-to-be-done")
Interpretation of innovativeness	A firm's ability to develop and introduce new products and services	A firm's ability to continuously address consumers' needs and preferences in a novel way
Research focus	The influence of various organizational characteristics on innovativeness and performance (antecedents of firm innovativeness)	The influence of firm innovativeness on customers' attitudinal and behavioral responses (consequences of firm innovativeness)
Measurement of innovativeness	The frequency of launching novel solutions by the firm and/or their radicalness	The customers' overall perception of the firm as creative and market driving
Main data source	Managers (e.g., <i>Community Innovation Survey</i> ; Danneels & Kleinschmidt, 2001; Laursen & Salter, 2006; Rubera & Kirca, 2012; Rubera & Kirca, 2017) and experts (e.g., Chandy & Tellis, 2000; Sorescu, Chandy, & Prabhu, 2003)	Customers (e.g., Ghanbarpour & Gustafsson, 2022; Kunz et al., 2011; Hubert et al., 2017; Sirdeshmukh et al., 2018; Pappu & Quester, 2016)

on new product performance levels (Henard & Szymanski, 2001). As customers are the users and final "judges" of innovations, many marketing researchers have recognized the importance of including the customer perspective on innovation and innovativeness (e.g., Barone & Jewell, 2013; Hubert et al., 2017; Lowe & Alpert, 2015; Shams, Alpert, & Brown, 2015). The fundamental idea is that in the space between what firms do (e.g., launching a new product) and what firms receive (e.g., financial results), there are often the neglected factors of what customers think (e.g., perception of innovativeness) and what customers do (e.g., purchase behavior) (Gupta & Zeithaml, 2006). Correspondingly, the customer-centric view emphasizes customers' subjective assessments of firms' innovation outputs in relation to customers' own needs and expectations (Table 2).

Although the existing literature on the customer-centric view undoubtedly enriches the understanding of innovativeness, it remains confined to the traditional satisfaction–loyalty link, which overlooks the fact that in the market with competing players, customers' perceptions of a specific firm relative to the firm's competitors is a more important indicator of success than customer satisfaction (Keiningham et al., 2015). More importantly, studies within the customer-centric view tend to neglect the antecedents of perceived firm innovativeness (Table 2) and do not capture theoretical developments in value-creation research. Instead, the existing literature builds on traditional approaches relying on the assumption that customers perceive and evaluate innovations as context-independent distinct outputs at the attribute or product level (Gustafsson et al., 2020). For example, this assumption is central to such common approaches as asking customers to evaluate the degree of product newness or Rogers' (1962) product attributes of relative advantage, compatibility, complexity, trialability, and observability (Danneels & Kleinschmidt, 2001; Shams et al., 2015). Such approaches essentially imply that customers evaluate innovations based on clear perceptions of all existing and new elements in a company's product portfolio (e.g., Hubert et al., 2017; Sweeney & Soutar, 2001; Zolfagharian & Paswan, 2008). However, as a growing body of research has suggested, this assumption is rather simplistic because customers tend to form perceptions of value based on their overall experiences with

Table 2
Antecedents and consequences of firm innovativeness in previous research.

Study	View	Key concept	Definition	Antecedents	Consequences
Lawson and Samson (2001)	Firm-centric	Innovation capability	The ability to continuously transform knowledge and ideas into new products, processes, and systems for the benefit of the firm and its stakeholders	Vision and strategy, competence base, organizational intelligence, creativity and idea management, organizational structure and systems, culture and climate, technology management	Innovation performance, firm performance
Calantone, Cavusgil, and Zhao (2002)	Firm-centric	Firm innovativeness	The rate of innovation adoption by the firm and the firm's willingness to change	Learning orientation	Firm performance
Deshpande and Farley (2004)	Firm-centric	Organizational innovativeness	Being first to market, avoiding late entry and stable markets, and being at the cutting edge of technology	–	Firm performance
Hult, Hurley, and Knight (2004)	Firm-centric	Innovativeness	The firm's capacity to engage in innovation—that is, the introduction of new processes, products, or ideas in the organization	Market orientation, entrepreneurial orientation, learning orientation	Business performance
Tajeddini, Trueman, and Larsen (2006)	Firm-centric	Innovativeness	The willingness and ability to adopt, imitate, or implement new technologies, processes, and ideas and commercialize them to offer new, unique products and services before most competitors	Customer orientation, competition orientation, interfunctional coordination	Performance
Henard and Dacin (2010)	Customer-centric	Reputation for product innovation	A constituent-specific perception of a firm's track record of product innovations, degree of creativity, and potential for continued innovative activity in the future	–	Customer involvement, excitement toward the firm, overall firm image, propensity to pay price premiums, loyalty to the firm, tolerance for occasional failure
Kunz et al. (2011)	Customer-centric	Perceived firm innovativeness	A consumer's perception of an enduring firm capability that results in novel, creative, and impactful ideas and solutions for the market	–	Functional competence, positive affect, cognitive satisfaction, emotional satisfaction, customer loyalty
Rubera and Kirca (2012)	Firm-centric	Firm innovativeness	A firm's receptivity and inclination to adopt new ideas that lead to the development and launch of new products	–	Market position, financial position, firm value
Dotzel et al. (2013)	Firm-centric	Service innovativeness	The organizational capability or propensity to introduce innovations	Effort intensity, organizational slack, financial leverage, firm size and age, market size and growth	Customer satisfaction, firm value, firm risk
Ngo and O'Cass (2013)	Firm-centric	Innovation capability	The application of knowledge and skills embedded within the routines and processes of the firm to perform innovation activities	–	Customer participation, service quality, firm performance
Tsai and Yang (2013)	Firm-centric	Firm innovativeness	A firm's willingness to adopt new ideas.	–	Business performance
Dibrell, Fairclough, and Davis (2015)	Firm-centric	Firm innovativeness	The creation of innovative products, services, or processes	External and internal entrainment	–
Lai, Lin, and Wang (2015)	Firm-centric	Corporate innovation capability	–	Organizational strategy and structure, R&D talent and technology, environmental uncertainty, stakeholders	Corporate sustainability
Lin (2015)	Customer-centric	Perceived retailer innovativeness	A customer's perception of a firm's ability to provide new products, services, and promotions.	–	Satisfaction, reputation, purchase intentions
Alexiev, Volberda, and van den Bosch (2016)	Firm-centric	Firm innovativeness	The capacity to introduce new products and services	Environmental turbulence, market heterogeneity, competitive intensity, interorganizational collaboration	–
Foroudi, Jin, Gupta, Melewar, and Foroudi (2016)	Customer-centric	Innovation capability	The ability of a company offering a product or a service to create a strong position in a high-potential market	–	Reputation, loyalty
Lin (2016)	Customer-centric	Perceived retailer innovativeness	A convenience retailer's ability to innovate.	–	Perceived value, patronage intentions
Pappu and Quester (2016)	Customer-centric	Brand innovativeness	The degree to which consumers perceive a brand to be innovative	–	Perceived quality, brand loyalty
Yeh (2016)	Customer-centric	Service innovation	A firm's receptivity and inclination to adopt novel ideas that lead to developing and launching new products	–	Customer advocacy, customer participation, relationship quality, customer-perceived value
Filser et al. (2018)	Firm-centric	Firm innovativeness	A firm's ability or capacity to innovate	Family functionality, socioemotional wealth	–
Hubert et al. (2017)	Customer-centric	Perceived brand innovativeness	Consumers' subjective assessments of a brand as being innovative	Perceived flagship product innovativeness, perceived typicality	Intention to buy, willingness to pay
Wang and Dass (2017)	Firm-centric	Innovation capability	–	Top management innovativeness, firm resources, industry competition	Firm performance

(continued on next page)

Table 2 (continued)

Study	View	Key concept	Definition	Antecedents	Consequences
Bairrada et al. (2018)	Customer-centric	Brand innovativeness	A firm's ability to generate, accept, and implement new ideas, processes, products, or services Consumers' perceptions of a brand as innovative due to its systematic approach to the generation of creative solutions to market opportunities, such as introducing new designs, product attributes and marketing approaches	–	Brand uniqueness, brand prestige, perceived value, brand love, brand loyalty, word of mouth, willingness to pay a price premium
Sirdeshmukh et al. (2018)	Customer-centric	Search engine reputation for innovation	A consumer's overall evaluation of a provider's creativity and novelty	Search engine value, aesthetic performance	Loyalty intention, user commitment
Strohmeier, Tonoyan, & Jennings (2018)	Firm-centric	Firm innovativeness	The number of different domains in which a firm has developed something new and the frequency and novelty of its offerings	Entrepreneur's gender	–
Alegre and Pasamar (2018)	Firm-centric	Firms innovativeness	A firm's capacity to engage in innovation—that is, introduction of new products, new processes, or new marketing or organizational methods	–	–
Kim et al. (2018)	Customer-centric	Perceived restaurant innovativeness	A business's broad activities that show capability and willingness to consider and institute "unique" and "meaningfully different" ideas, services, and promotions from customers' perspectives when selected from alternative activities	–	Customer satisfaction
Lin (2019)	Customer-centric	Perceived retailer service innovativeness	The degree to which a consumer perceives a retailer's ability to offer service innovations	–	Perceived service advantage, customer emotional satisfaction, customer attitude, patronage intentions
Stock, Groß, and Xin (2019)	Firm-centric	Product program newness	The extent to which a firm's product program differs from the existing alternatives	Top executives' selfism, hypercore self-evaluation, overconfidence, and innovative work behavior	–
Ozdemir, Kandemir, Eng, and Gupta (2020)	Firm-centric	Firm innovativeness	Firms' capability of introducing new products in the market	Legal bonds, technological turbulence, vertical stakeholder integration, operational linkages	New product performance, firm performance
Wrede and Dauth (2020)	Firm-centric	Firms innovativeness	A firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes	Top management team internalization, CEO age	–
Ghanbarpour and Gustafsson (2022)	Customer-centric	Perceived firm innovativeness	A firm's ability to continuously address consumers' needs and preferences	–	Customer satisfaction, financial performance

companies rather than specific characteristics of concrete products (e.g., Gustafsson et al., 2020; Höflinger, Nagel, & Sandner, 2018; Kim, Tang, & Bosselman, 2018; Lemon & Verhoef, 2016; Lin, 2015). As customer experience consists of cognitive, emotional, behavioral, sensorial, and social responses to interactions with the firm and its offerings (Lemon & Verhoef, 2016), shaping these interactions provides possibilities for the firm to influence the customer's value creation process (Grönroos, 2011; Grönroos & Voima, 2013) and hence the customer's perceptions of the firm's innovativeness and relative attractiveness in the market.

2.2. Theoretical model and hypotheses

In our study, we follow the customer-centric view that builds on the value creation literature, where innovation is conceptualized as a customer-perceived change in how customers and firms co-create value (Michel et al., 2008a, 2008b), with value being the customer's overall assessment of "consequences arising from a solution that facilitate or hinder achievement of the customer's goals" (Macdonald, Kleinaltenkamp, & Wilson, 2016, p. 96). Customer-perceived value can be either positive or negative (Echeverri & Skålén, 2011), and it emerges in the value creation process that comprises three spheres: 1) the provider sphere (closed to customers), where firms produce resources to be used by customers; 2) the customer sphere (closed to firms), where customers

use resources and create actual value for themselves; and 3) the joint sphere (the intersection of the provider and the customer spheres), where firms and customers co-create value, that is, together create value in interactions (Grönroos & Voima, 2013). With respect to innovation, the provider sphere functions as an arena for developing new solutions of potential value, whereas the customer sphere covers the customer's use of new solutions independently of the firm (Grönroos, 2017). As innovations by definition imply changes in the joint sphere, the introduction of such changes becomes the firm's means of directly and actively influencing the customer's value creation (Grönroos, 2017; Grönroos & Gummerus, 2014).

The value creation literature suggests that firms can introduce changes in the joint sphere by (1) proposing new value to customers, (2) changing the way in which customers actualize value, (3) (re)configuring relationships with customers, and (4) (re)designing the physical/virtual space of interaction (Grönroos & Voima, 2013; Gummesson, 2007; Holmqvist, Visconti, Grönroos, Guais, & Kessous, 2020; Michel, Brown, & Gallan, 2008b; Payne & Frow, 2014; Payne, Storbacka, Frow, & Knox, 2009). These four dimensions of the joint sphere (i.e., value proposition, value actualization, relationship experience, and interaction space) address the *what*, *how*, *who*, and *where* of the joint sphere and resonate well with specific dimensions that have been identified in particular contexts. For example, in the retail industry, customers

perceive differences between product-related innovations (e.g., new product assortment), service-related innovations (e.g., new self-service technology), promotion-related innovations (e.g., new promotions), and experience-related innovations (e.g., new shopping atmosphere) (Lin, 2015; Omar, Kassim, Shah Alam, & Zainol, 2021). In the restaurant industry, the corresponding dimensions include menu innovativeness (e.g., new menu items), technology-based service innovativeness (e.g., online ordering tools), promotional innovativeness (e.g., a new rewards program), and experiential innovativeness (e.g., a new physical design) (Kim et al., 2018; Teng & Chen, 2021).

In this study, we hypothesize that customers’ perceptions of changes along the four dimensions of the joint sphere affect their perceptions of firms’ innovativeness. Furthermore, we hypothesize that perceived changes in the joint sphere and perceived firm innovativeness affect customers’ perceptions of firms’ relative attractiveness. Fig. 1 depicts our overall research model, while the following subsections present in detail the theoretical reasoning behind the hypothesized links.

Importantly, we do not make any assumptions about change valence in the joint sphere for two reasons. First, the fundamental innovation characteristics are the novelty and extent of the change, not its positive or negative outcomes (e.g., Schumpeter, 1934). Second, defining innovation as a positive change would exclude changes that customers dislike and introduce customer satisfaction as a confounding notion into the concept of innovation. Although innovations are often seen as improvements from the managerial perspective (assuming that managers do not purposefully introduce negative outcomes or failures), this may not be the case from the customer perspective. Furthermore, it is not reasonable to expect that even when customers “uniformly” recognize a change in the joint sphere, they should also share a uniform opinion of the change’s valence.

2.2.1. Effects of perceived changes in the joint sphere on perceived firm innovativeness

Changes in value proposition. From a firm perspective, value proposition is the promise of the benefits of value that customers will receive (Payne & Frow, 2014). Being presented in the joint sphere by a firm, a value proposition reflects the potential of a transaction, but it is up to the customer to determine whether a specific value proposition corresponds to their needs and results in the value they expect (Vargo & Lusch, 2004). Accordingly, from the customer perspective, value proposition is a subjective assessment of a firm’s offer to address one’s specific wants and needs (Rintamäki, Kuusela, & Mitronen, 2007). This implies that customers assess the consequences of interacting with a company relative to their goals (Macdonald et al., 2016) or to the fundamental issues they need to resolve in a given situation (Christensen et al., 2016).

Companies often innovate to create or enhance their value propositions by improving the characteristics or performance of their offerings (Aaker, 2007). When a firm introduces changes at the product or attribute level, this may affect customers’ perceptions of the firm’s value proposition (Varadarajan, 2018). As value proposition is the main reason behind customer–firm interactions, it is likely that when customers perceive changes in a firm’s value proposition, they adjust their perception of the firm’s innovativeness. We expect that firms that introduce new solutions (e.g., expanding the range of services and launching new products) or significantly modify their existing solutions (e.g., adding new functions) to the extent that customers notice significant changes in the firms’ value propositions will be perceived as more innovative.

H1. Perceived changes in value proposition are positively associated with customers’ perceptions of firms’ innovativeness.

Changes in value actualization. As a symbol of prospective benefits, a value proposition “exists” only as a potential to be actualized (Gummesson, 2007). This actualization implies the deployment, or integration, of resources to create value. From the firm perspective, value

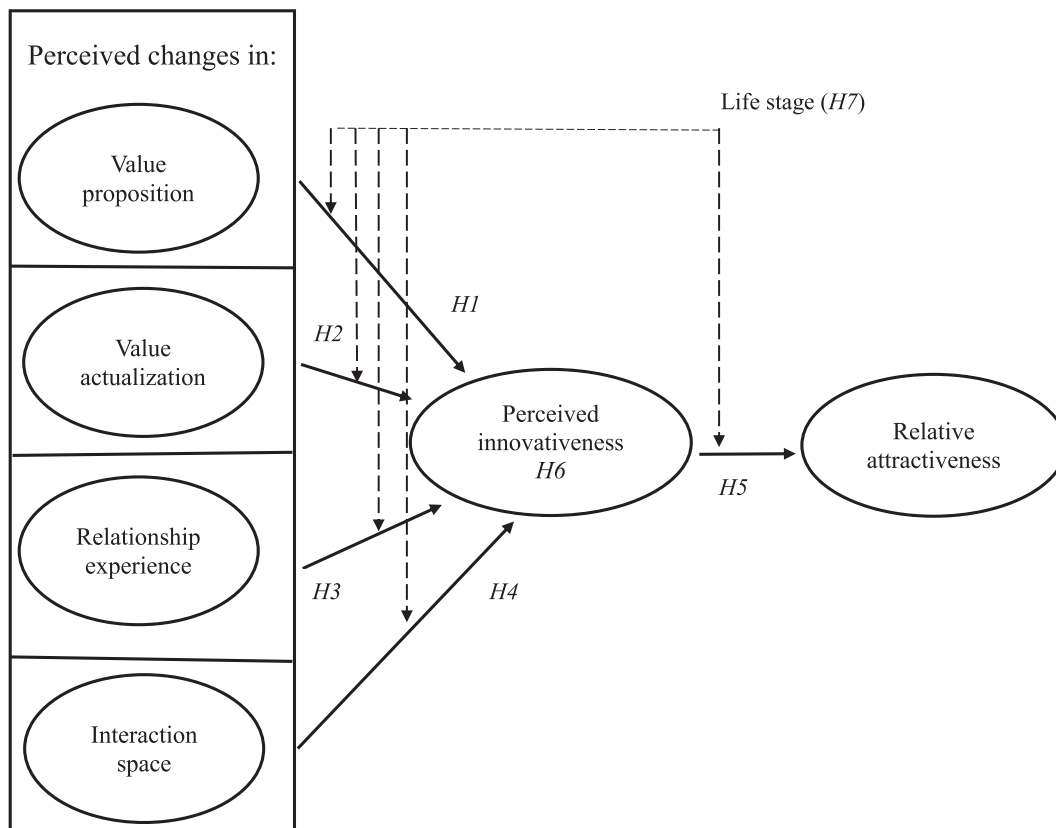


Fig. 1. Antecedents and consequences of perceived firm innovativeness.

actualization primarily occurs through firm processes, such as production, logistics, marketing and sales, and customer service (e.g., Porter, 1985). From the customer perspective, however, value is actualized in the customer usage process through resource integration (Gummesson, 2007; Payne, Storbacka, & Frow, 2008; Vargo & Lusch, 2004).

When a firm introduces changes affecting the resource integration process in the joint sphere, this may have a considerable impact on customers' judgments, competencies, and activities (Dotzel, Shankar, & Berry, 2013; Macdonald et al., 2016; Varadarajan, 2018). For example, changes in service operations due to the introduction of novel mechanisms of service delivery, such as self-service, often influence customers' perceptions of ease, convenience, and efficiency (Meuter, Bitner, Ostrom, & Brown, 2005; Wirtz & Lovelock, 2016). Conversely, customers tend to perceive firms that adhere to outdated processes as being inflexible and having inertia (Macdonald et al., 2016). Therefore, we theorize that firms that modify their resources and processes to the extent that customers notice significant changes in value actualization will be perceived as more innovative.

H2. Perceived changes in value actualization are positively associated with customers' perceptions of firms' innovativeness.

Changes in relationship experience. The main prerequisite for value creation in the joint sphere is that a firm and a customer engage in a relationship (Walter, Ritter, & Gemünden, 2001). From a firm perspective, relationships with customers manifest themselves in building customer loyalty to increase shareholder value (Payne & Frow, 2005; Rust, Lemon, & Zeithaml, 2004). From the customer perspective, however, relationships with firms emerge from experiences of how firms establish, maintain, and enhance interactions with customers (Fournier, 1998; Grönroos, 2004).

Many firms take an active, formal approach to initiating and fostering customer relationships by introducing changes to relationship management and marketing practices (Jarratt, 2008; Morgan & Hunt, 1994; Reinartz, Krafft, & Hoyer, 2004). Such changes may take the form of various marketing and communication programs, notably financial relationship marketing programs (e.g., discounts and free products), social relationship marketing programs (e.g., special treatment, entertainment, and personalized information), and structural relationship marketing programs (e.g., dedicated personnel and customization) (Palmatier, Gopalakrishna, & Houston, 2006). For customers, these changes tend to be emotionally and cognitively engaging, thus influencing their opinions of firms and willingness to actively participate in interactions (Dotzel et al., 2013; Payne et al., 2009). We theorize that firms that innovate in their customer relationship practices to the extent that customers notice changes in relationship experiences will be perceived as more innovative.

H3. Perceived changes in relationship experience are positively associated with customers' perceptions of firms' innovativeness.

Changes in interaction space. From the firm's perspective, the joint sphere requires a company to design a space where firms can interact with customers and directly facilitate their value creation (Grönroos & Voima, 2013; Holmqvist et al., 2020). Historically, interaction space has been equated with the physical environment, where firms could embed various tangible cues in their products (Bloch, 1995) and facilities' exterior and interior (Bitner, 1992). With growing digitalization, interaction space has expanded to include cyberspace (Koernig, 2003), as well as different combinations of physical and virtual environments (van Krevelen & Poelman, 2010).

From the customer perspective, interaction space is the source of various stimuli (e.g., form, graphics, layout, style, and ambient conditions) that affect customers' emotions, cognitions, and behaviors (e.g., Bitner, 1992; Holmqvist et al., 2020; Pullman & Gross, 2004). Although most studies investigate various cues in a given interaction space, there is increasing recognition of the importance of new or modified interaction spaces in explaining the functional, cognitive, emotional, and social aspects of new offerings and in exciting customers (Eisenman, 2013). This implies that a firm can influence its customers' existing

schemas and shape their interpretations of the firm and its products through specific design choices for an interaction space (Dion & Borraz, 2017; Rindova & Petkova, 2007). Therefore, we theorize that firms modifying aspects of their interaction spaces so that customers notice significant changes in physical or digital environments will be perceived as more innovative.

H4. Perceived changes in interaction space are positively associated with customers' perceptions of firms' innovativeness.

2.2.2. Effect of perceived firm innovativeness on a firm's relative attractiveness

For customers, higher degrees of innovativeness often elicit stronger beliefs about the excitement, utility, and hedonic benefits that a firm can offer through its new products and services (Lowe & Alpert, 2015). Empirical evidence also indicates that category leader and product leader brands tend to belong to more innovative firms (Beverland, Napoli, & Farrelly, 2010), suggesting that perceived innovativeness may serve as a major source of competitive advantage and define a firm's market position. As Aaker (2007) argued, a reputation for being innovative is desirable because it signals the firm's energy, success, and leadership—characteristics that customers are typically attracted to and respect. Innovativeness may also contribute to perceptions of uniqueness and prestige (Bairrada, Coelho, & Coelho, 2018), and regular demonstrations of innovativeness can help maintain and enhance brand equity (Barone & Jewell, 2013). Essentially, by continuously introducing new offerings or improving existing ones, firms influence customers' perceptions of real and future alternatives and, as a result, become more attractive than their competitors in customers' eyes (Andreassen & Lervik, 1999). Conversely, when a firm's competitors introduce innovations that are popular in the market, the firm becomes less attractive and its value decreases (Dotzel et al., 2013). Following this line of reasoning, we theorize that firms perceived as more innovative will also be perceived as more attractive than their competitors.

H5. Perceived firm innovativeness is positively associated with customers' perceptions of firms' relative attractiveness.

2.2.3. The mediating effect of perceived innovativeness

By developing and introducing new solutions, firms often aim to differentiate themselves from competitors and become customers' preferred choice (Ngo & O'Cass, 2013). Changes in value propositions can be an effective way of pursuing a competitive strategy, as they can help differentiate brands or even result in the creation of new sub-categories, triggering customers' wants and needs (Aaker, 2007). Changes in value actualization can help create unique processes, shape interactions (Wirtz & Lovelock, 2016), and control access to the joint sphere, influencing customers' habits and preventing customer-switching behavior (Hartigh, Ortt, Van de Kaa, & Stolwijk, 2016). Changes in relationship experience can attract and retain customers by, for example, stimulating their feelings of trust, community, getting preferential treatment, or being special (Rust et al., 2004). Changes in interaction space provide immediate cues for differentiating firms, assist in brand recognition, and help create unique settings that are particularly attractive for customers (Bitner, 1992). However, extant literature (e.g., Barone & Jewell, 2013; Henard & Dacin, 2010; Kunz et al., 2011; Lin, 2019) strongly suggest that perceived firm innovativeness mediates the effect of innovations on firms' relative attractiveness, as it functions as a form of customer-based brand equity that increases following new launches and buffers the effects of occasional failures on customers' preference for the firm.

H6. Perceived firm innovativeness mediates the effect of perceived changes in the joint sphere on firms' relative attractiveness.

2.2.4. Moderating effects of customers' life stages

Existing research focusing on customers' attitudes toward innovation indicates that customers' age may influence the relationship between perceived firm innovativeness and relative attractiveness (e.g., Arts,

Frambach, & Bijmolt, 2011; Meuter et al., 2005;). However, evidence remains inconclusive, as studies have demonstrated both negative (Lambert-Pandraud & Laurent, 2010; Laukkanen, 2016) and positive (Peine, van Cooten, & Neven, 2017; Steenkamp & Burgess, 2002) effects of age in innovation contexts. Seeking to provide a socioeconomic rather than biological explanation, Andreassen, Lervik-Olsen, and Calabretta (2015) suggested that customers' life stages may be more salient than age in moderating customers' perceptions of innovation. They found three distinct life stages that reflect different needs, preferences, and frames of reference, defining customers' perceptions of the value creation process. The first life stage, "Young, free, and simple," describes young people who study or work and live by themselves or with their partner, typically without children. Their behavior is characterized by prioritizing quantity of life in the form of diverse activities and variety seeking in private, professional, and social arenas (Lambert-Pandraud & Laurent, 2010). Therefore, changes in value proposition may be the strongest factor in determining customers' consideration set and selection of providers in this life stage. The second life stage, "Chaos in my life," describes middle-aged people with dynamic professional and family life, typically with children. To be able to cope with the daily workload and family routines, these customers prefer efficiency and effectiveness in value creation (Andreassen et al., 2015). In this life stage, the strongest factor in determining firm innovativeness and attractiveness may be changes in value actualization. Finally, the life stage "Got my life back" describes elderly adults who tend to have a more stable and predictable lifestyle, with relatively more time, higher disposable income, and less price sensitivity. Their consumption of services and goods is dominated by preferences for quality of life and more stable relationships with companies (Helm & Landschulze, 2013). In this life stage, changes in relationship experience may be the strongest factor in determining firm innovativeness and attractiveness.

H7. Consumers' life stage moderates the relationships between perceived changes in the joint sphere, perceived firm innovativeness, and relative attractiveness.

3. Methods

3.1. Empirical context and data

As our ambition was to test the theoretical model in various contexts, we balanced our sampling strategy in terms of depth and breadth, ensuring the representativeness of both respondents and companies across time and markets. We collected our data in Norway in three phases—the pre-study, the pilot study, and the main study—beginning with surveys in the last quarter of 2015 and the first quarter of 2016, followed by a "rolling" survey that collected data throughout 2016. Norway has an advanced, open economy and a modern social democratic society with citizens who are well integrated internationally. The country is characterized by high demand for innovation, in large part due to high levels of income and purchasing power, which provide the population with the flexibility to try out new offerings while pushing firms to introduce new solutions to increase efficiency and decrease high labor costs (Organization for Economic Co-operation and Development, 2017).

We conducted all our data collection through Ipsos, one of the world's leading data collection agencies, whose respondent pool is well established and one of the largest in Norway. Our respondents formed a nationally representative sample of the Norwegian population aged 18 years or older. As all our constructs were experience-based, our respondents had to be customers of the companies that they were evaluating in the questionnaires. Therefore, each respondent first received a list of companies and had to indicate which companies they used. Based on their answers, they received the questionnaire from a maximum of three companies randomly selected from the list of the companies that they used. In all phases, we sampled approximately 100 respondents per company. Response quality was ensured by the collecting agency's

internal procedures and routines; standard procedural remedies for common method bias, namely funneling, separating predictors and criteria, randomizing item order within thematic blocks, explaining the importance of providing conscientious answers, and ensuring a common understanding of the terms (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003); and additional screening for careless respondents (Meade & Craig, 2012).

For the pre-study, we selected four industries of immediate relevance to customers. In total, 1,293 customers participated in a survey that covered 11 companies with the highest market shares in retail (four companies), banking (three companies), telecommunications (three companies), and postal services (one company). For the pilot study phase, 1,583 respondents participated in a survey that covered 11 companies with the highest market shares in retail (four companies, the same as in the pre-study), telecommunications (three companies, the same as in the pre-study), and e-commerce (four companies).

For the main study, 5,812 respondents participated in a survey that covered 57 companies from 19 industries (including all companies from the previous phases, except for one substitution in banking for market penetration reasons). For feasibility reasons, we did not cover all existing companies in the country. When selecting companies, we relied on the following criteria: (1) companies had to represent industries with the highest proportion of household spending (according to Statistics Norway), jointly accounting for a minimum of 70 % of all household consumption, and (2) companies had to account for a minimum of 70 % of the respective markets in each of the selected industries. Although our approach did not address small entrepreneurial firms, it allowed us to cover companies with the most influence on the market and hence on customers' everyday lives. The final list included banks (three), filling station chains (three), car dealer chains (four), grocery chains (four), pharmacy chains (three), newspapers (four), taxi companies (three), airlines (three), insurance companies (four), hotels (three), furniture chains (four), a home appliance retail chain (one), e-commerce firms (three), public transportation companies (five), clothing retail chains (four), an alcoholic beverage retail chain (one), a postal service (one), a public welfare agency (one), and telecommunications companies (three).

Table 3 provides an overview of the survey respondents' characteristics.

3.2. Variables and measures

Perceived changes in the joint sphere. To operationalize the four dimensions of the joint sphere, we used a multistep procedure. First, we developed an initial set of items based on the existing literature (Bitner, 1992; Lin, 2015; Lovelock & Wright, 2002; Rintamäki et al. 2007; Seiders, Voss, Godfrey, & Grewal, 2007; Sureshchandar, Rajendran, & Anantharaman, 2002; Zolfagharian & Paswan, 2008). We then used nine iterative rounds of item sorting and focus group discussions with customers and academics (including a discussion with a language expert), as well as the first two surveys, to validate our constructs (1,293 and

Table 3
Sample characteristics.

Phases	Pre-test study	Pilot study	Main study
Sample size	1,293	1,583	5,812
Age (%)			
18–30 years	14.2	29.2	17.2
30–59 years	52.3	51.7	58.5
>59 years	33.6	19.0	24.3
Gender (%)			
Female	46.1	54.1	48.0
Male	53.9	45.9	52.0
Education (%)			
Basic	36.8	38.5	40.0
Higher	63.2	61.5	60.0

1,583 respondents, respectively). We purposely avoided positive wording and additionally indicated to the respondents that, in these items, we were asking about the extent of the changes rather than positive or negative evaluations. We also ensured that the wording in the introductory sections was not suggestive of episodic experiences. To reduce the respondents' cognitive load, we framed time in terms of the recent past and not the exact date/period (Bradburn, Rips, & Shevell, 1987; Zenetti & Klapper, 2016), while the survey's rolling nature ensured temporally balanced data collection.

In the questionnaires, we used a 7-point Likert scale for items reflecting latent constructs (Table 4). We measured changes in value proposition using three questions that reflected the extent of customer-perceived alterations in the correspondence between market offerings and customer demands. Four questions measuring changes in value actualization reflected the extent of alterations in the co-creation process (including firms' and customers' actions) as perceived by the customers. To assess changes in relationship experience, we asked three questions about the extent of perceived alterations in customer

treatment and communication with the companies. We measured changes in interaction space using three questions about the extent of customer-perceived alterations in physical and digital elements between customers and companies.

Customers' perceptions of firms. To measure perceived firm innovativeness, we used four items from Kunz et al. (2010), reflecting the degree to which customers view a firm as being the first to implement new ideas and offer new solutions in a category or market. Finally, to assess the perceived relative attractiveness of firms, we used four items that indicated the respondents' evaluations of a firm and its offerings compared to those of other similar companies (Andreassen & Lervik-Olsen, 2008).

Moderator. To investigate the moderating effects of life stage, we followed Andreassen et al. (2015) and used age as a proxy, categorizing the respondents into three customer groups: young (under 30 years), middle-aged (30–59), and elderly (over 60). The cutoff of 30 years was based on the mean age of the parents at first birth in Norway (according to Statistics Norway).

Table 4
Measures and confirmatory factor analysis results.

Constructs and indicators	Factor loadings (standard errors)		
	Pre-test study	Pilot study	Main study
Relative attractiveness			
1. To what extent does [FIRM] provide products and services of better value than other similar companies?	0.59 (0.025)	0.55 (0.023)	0.62 (0.013)
2. To what extent does [FIRM] provide products and services of better quality than other similar companies?	0.84 (0.016)	0.81 (0.016)	0.90 (0.007)
3. To what extent does [FIRM] have a better reputation than other similar companies?	0.83 (0.018)	0.87 (0.012)	0.88 (0.007)
4. To what extent is [FIRM] more attractive than other similar companies?	0.81 (0.017)	0.89 (0.011)	0.90 (0.006)
Firm innovativeness			
5. [FIRM] changes the market with its offers.	0.79 (0.017)	0.77 (0.017)	0.84 (0.010)
6. [FIRM] is a very creative company.	0.88 (0.012)	0.89 (0.011)	0.92 (0.011)
7. [FIRM] is a pioneer in its category.	0.85 (0.013)	0.86 (0.013)	0.88 (0.018)
8. [FIRM] is an innovative company.	0.90 (0.012)	0.89 (0.020)	0.91 (0.017)
Changes in value proposition			
9. During the last few months, to what extent has there been a change in how [FIRM]'s offerings match your wants?	0.90 (0.014)	0.92 (0.012)	0.91 (0.009)
10. During the last few months, to what extent has there been a change in how [FIRM]'s offerings meet your needs?	0.88 (0.015)	0.91 (0.013)	0.92 (0.007)
11. During the last few months, to what extent has there been a change in [FIRM]'s overall market offering?	0.84 (0.016)	0.87 (0.015)	0.88 (0.009)
Changes in value actualization			
12. During the last few months, to what extent has there been a change in the way [FIRM] delivers what it offers?	0.90 (0.012)	0.92 (0.012)	0.91 (0.006)
13. During the last few months, to what extent has there been a change in how easy it is to make use of [FIRM]'s offerings?	0.88 (0.012)	0.91 (0.009)	0.89 (0.007)
14. During the last few months, to what extent has there been a change in how quickly [FIRM] delivers what it offers?	0.86 (0.016)	0.91 (0.012)	0.93 (0.005)
15. During the last few months, to what extent has there been a change in your efforts when making use of [FIRM]'s offerings?	0.80 (0.017)	0.81 (0.015)	0.82 (0.009)
Changes in relationship experience			
16. During the last few months, to what extent has there been a change in the way [FIRM] treats you as a customer?	0.92 (0.014)	0.91 (0.029)	0.93 (0.022)
17. During the last few months, to what extent has there been a change in the way [FIRM] takes care of you as a customer?	0.93 (0.017)	0.93 (0.024)	0.93 (0.019)
18. During the last few months, to what extent has there been a change in the way [FIRM] communicates with you?	0.89 (0.017)	0.92 (0.022)	0.92 (0.016)
Changes in interaction space			
19. During the last few months, to what extent has there been a change in the appearance of [FIRM]'s web page or interiors?	0.84 (0.018)	0.91 (0.015)	0.91 (0.007)
20. During the last few months, to what extent has there been a change in the design of [FIRM]'s physical surroundings or digital solutions?	0.83 (0.018)	0.92 (0.013)	0.92 (0.008)
21. During the last few months, to what extent has there been a change in the visual appeal of [FIRM]'s facilities?	0.93 (0.011)	0.92 (0.012)	0.93 (0.007)
	$\chi^2 = 357.35; df = 174; RMSEA = 0.029; SRMR = 0.026; NNFI = 0.990$	$\chi^2 = 329.91; df = 174; RMSEA = 0.02; SRMR = 0.027; NNFI = 0.993$	$\chi^2 = 543.80; df = 174; RMSEA = 0.019; SRMR = 0.026; NNFI = 0.996$

Note. χ^2 = chi-square; RMSEA = the root mean square error of approximation; SRMR = the standardized root mean square residual; NNFI = the non-normed fit index. All loadings are significant, $p < .001$.

4. Results

We applied confirmatory factor analysis and structural equation modeling with robust maximum likelihood estimation using LISREL 10.2 to test the hypothesized relationships (Jöreskog, Olsson, & Walentin, 2016). Table 4 provides the results of the measurement model analysis for each study sample. All factor loadings were statistically significant ($p < .001$) and reasonably high (ranging from 0.62 to 0.93) in the final sample. All three models demonstrated an excellent fit, although chi-square statistics inevitably varied based on differences in sample size. The models posed no convergent or discriminant validity concerns, with composite reliability (CR) for all constructs well above the recommended value of 0.70, average variance extracted (AVE) much greater than 0.50, maximum shared variance lower than the AVE, and the square root of AVE greater than the inter-construct correlations (Hair, Black, Babin, & Anderson, 2010). Table 5 provides construct correlations (standard errors in parentheses) from the confirmatory factor analysis based on the main study sample.

We used the data from the first two studies primarily to establish the validity and reliability of our constructs. To test a causal model of the relationships between the constructs, we used data from the main study. The chi-square test and the alternative fit indices demonstrated an excellent fit ($\chi^2 = 564.56$, $df = 178$; RMSEA = 0.019; SRMR = 0.030; NNFI = 0.995). We followed the standard procedure for testing for mediation effects (Hair et al., 2010). Based on this analysis, we modified the model by including a path relating value actualization to relative attractiveness. The final model (further used in reporting) showed an improved fit ($\chi^2 = 552.11$, $df = 177$; RMSEA = 0.019; SRMR = 0.026; NNFI = 0.996).

As Table 6 shows, the results supported the positive relationships between perceived changes in value proposition (0.25, $p < .001$), value actualization (0.31, $p < .001$), and interaction space (0.19, $p < .001$) and firm innovativeness (Hypotheses 1, 2, and 4, respectively). The results also revealed a strong relationship between perceived firm innovativeness and relative attractiveness (0.70, $p < .001$), supporting Hypothesis 5. Regarding Hypothesis 3, the relationship between perceived changes in relationship experience and firm innovativeness was significant, but, contrary to the expected direction, negative (-0.16, $p < .001$). Regarding H6, we found a significant and positive direct effect of perceived changes in value actualization on relative attractiveness (0.08, $p < .001$), indicating that perceived firm innovativeness partially mediates the effect of changes in value actualization on relative attractiveness. The direct effects of changes in value proposition, relationship experience, and interaction space on relative attractiveness were not significant, indicating complete mediation by perceived firm innovativeness.

To investigate the hypothesized moderation effects (Hypothesis 7), we followed the standard procedure for multigroup analysis with maximum likelihood estimation (Jöreskog et al., 2016). Table 7 presents the main results. In addition to comparing the corresponding estimates across groups, we compared the relative importance of standardized parameter estimates within groups to analyze patterns of influence.

Most of the uncovered relationships between the variables in the model generally held across various customers' life stages. The exception providing partial support to the hypothesis was the association

between perceived changes in value proposition and firm innovativeness, which was significantly larger in the “Young, free, and simple” group (0.30, $p < .001$) than in the “Chaos in my life” group (0.19, $p < .001$). Moreover, as we tested for differences between total effects within the groups, we found that there was a significant shift in the relative importance of factors within the groups, providing further support for the hypothesis. Although changes in value proposition and value actualization had a similar effect on both firm innovativeness (0.30, $p < .001$ and 0.24, $p < .001$, respectively) and relative attractiveness (0.19, $p < .001$ and 0.25, $p < .001$, respectively) for the “Young, free, and simple” group, changes in value actualization had a significantly higher positive effect than any other dimension on relative attractiveness for the “Chaos in my life” (0.27, $p < .001$) and the “Got my life back” groups (0.25, $p < .001$). For the latter two groups, changes in value actualization (0.28, $p < .001$ and 0.27, $p < .001$, respectively) also had a

Table 6
Structural parameter estimates.

Model element	Original model	Final model	Indirect effects (final model)	Total effects (final model)
<i>Model fit</i>				
χ^2	564.56	552.113		
Degrees of freedom	178	177		
RMSEA	0.019	0.019		
SRMR	0.030	0.026		
NNFI	0.995	0.996		
<i>Standardized parameter estimates (with standard errors in parentheses)</i>				
Value proposition → Firm innovativeness	0.25 (0.030)	0.25 (0.030)		0.25 (0.030)
Value proposition → Relative attractiveness			0.18 (0.022)	0.18 (0.022)
Value actualization → Firm innovativeness	0.32 (0.023)	0.31 (0.023)		0.31 (0.023)
Value actualization → Relative attractiveness			0.22 (0.018)	0.29 (0.021)
Relationship experience → Firm innovativeness	-0.16 (0.032)	-0.16 (0.032)		-0.16 (0.032)
Relationship experience → Relative attractiveness			-0.11 (0.023)	-0.11 (0.023)
Interaction space → Firm innovativeness	0.19 (0.026)	0.19 (0.026)		0.19 (0.026)
Interaction space → Relative attractiveness			0.14 (0.019)	0.14 (0.019)
Firm innovativeness → Relative attractiveness	0.74 (0.020)	0.70 (0.021)		0.70 (0.021)
<i>R2</i>				
Firm innovativeness	0.30	0.29		
Relative attractiveness	0.55	0.55		

Note. χ^2 = chi-square; RMSEA = the root mean square error of approximation; SRMR = the standardized root mean square residual; NNFI = the non-normed fit index.

Table 5
Construct correlations.

Variable	CR	1	2	3	4	5	6
1. Relative attractiveness	0.90	0.83					
2. Firm innovativeness	0.94	0.74 (0.010)	0.89				
3. Changes in value proposition	0.91	0.39 (0.016)	0.47 (0.015)	0.88			
4. Changes in value actualization	0.94	0.42 (0.014)	0.49 (0.014)	0.70 (0.012)	0.89		
5. Changes in relationship experience	0.95	0.31 (0.016)	0.38 (0.016)	0.75 (0.014)	0.67 (0.014)	0.93	
6. Changes in interaction space	0.94	0.32 (0.015)	0.42 (0.014)	0.64 (0.013)	0.60 (0.013)	0.73 (0.013)	0.92
Marker variable (Extent of reading)	–	0.11 (0.018)	0.09 (0.019)	0.02 (0.019)	0.02 (0.018)	-0.06 (0.018)	0.03 (0.018)

Note. CR = composite reliability; diagonal elements (bold) show the square root of the average variance extracted; p values in parentheses.

Table 7
The moderating effects of life stage.

Comparisons of standardized parameter estimates (with standard errors in parentheses) between groups												
	“Young, free, and simple” (LS 1)	“Chaos in my life” (LS 2)	“Got my life back” (LS 3)	LS 1 vs LS 2		LS 1 vs LS 3		LS 2 vs LS 3				
	β (SE)	β (SE)	β (SE)	Δχ ² (1)	p-value	Δχ ² (1)	p-value	Δχ ² (1)	p-value			
<i>Final model (including effects on FI):</i>												
VP → FI	0.30 (0.049)	0.19 (0.028)	0.23 (0.038)	3.88	0.049	1.32	0.251	0.72	0.396			
VA → FI	0.24 (0.046)	0.28 (0.026)	0.27 (0.035)	0.55	0.457	0.34	0.562	0.02	0.896			
VA → RA	0.10 (0.031)	0.07 (0.015)	0.07 (0.024)	0.59	0.444	0.37	0.545	0.01	0.929			
RE → FI	-0.08 (0.050)	-0.11 (0.028)	-0.14 (0.039)	0.22	0.642	0.76	0.384	0.35	0.556			
IS → FI	0.18 (0.045)	0.18 (0.025)	0.13 (0.036)	0.01	0.929	0.77	0.381	1.07	0.300			
FI → RA	0.64 (0.032)	0.70 (0.017)	0.67 (0.025)	3.71	0.054	1.51	0.219	0.41	0.522			
<i>Total effects on RA:</i>												
VP → RA	0.19 (0.033)	0.13 (0.020)	0.16 (0.026)									
VA → RA	0.25 (0.040)	0.27 (0.022)	0.25 (0.031)									
RE → RA	-0.05 (0.032)	-0.08 (0.020)	-0.09 (0.027)									
IS → RA	0.12 (0.029)	0.12 (0.018)	0.09 (0.024)									
Comparisons of the relative importance of standardized parameter estimates (with standard errors in parentheses) within groups												
	VP vs VA		VP vs IS		VP vs RE		VA vs RE		VA vs IS		RE vs IS	
	Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value
<i>“Young, free, and simple”</i>												
Total effects on FI	0.060	0.375	0.122	0.066	0.387	< 0.001	0.327	< 0.001	0.062	0.335	-0.265	< 0.001
Total effects on RA	-0.057	0.270	0.078	0.073	0.247	< 0.001	0.304	< 0.001	0.135	0.006	-0.169	< 0.001
<i>“Chaos in my life”</i>												
Total effects on FI	-0.091	0.017	0.014	0.711	0.299	< 0.001	0.390	< 0.001	0.105	0.003	-0.285	< 0.001
Total effects on RA	-0.132	< 0.001	0.009	0.737	0.210	< 0.001	0.342	< 0.001	0.141	< 0.001	-0.201	< 0.001
<i>“Got my life back”</i>												
Total effects on FI	-0.044	0.394	0.099	0.058	0.379	< 0.001	0.414	< 0.001	0.143	0.005	-0.271	< 0.001
Total effects on RA	-0.098	0.017	0.067	0.060	0.249	< 0.001	0.347	< 0.001	0.165	< 0.001	-0.182	< 0.001

Notes. VP – value proposition; VA – value actualization; RE – relationship experience, IS – interaction space; FI – firm innovativeness, RA – relative attractiveness; LS – life stage; SE – standard error, χ² – chi-square.

Table 8
Comparison of alternative models.

Model	BIC	χ ² (df)	RMSEA	SRMR
Model 1 (the final model, Table 5)	1,020.18	552.11 (177)	0.019	0.026
Model 2 (Relative attractiveness → Firm innovativeness → Changes in the joint sphere)	4,017.45	3,610.06 (184)	0.057	0.191
Model 3 (Firm innovativeness → Relative attractiveness → Changes in the joint sphere)	11,889.500	4,162.96 (184)	0.061	0.215

Note. BIC = Bayesian Information Criterion; χ² = chi-square; df = degrees of freedom; RMSEA = the root mean square error of approximation; SRMR = the standardized root mean square residual.

significantly higher positive effect on perceived firm innovativeness than did changes in interaction space (0.18, $p < .001$ and 0.13, $p < .001$, respectively), while for the “Chaos in my life” group, value actualization had a significantly higher positive effect on firm innovativeness than did changes in value proposition (0.19, $p < .001$).

Assessing method bias and the potential reverse-causality problem. To detect potential method bias, we ran a single-factor model based on confirmatory factor analysis using a variant of Harman’s single-factor test (Podsakoff et al., 2003). The model had an unacceptable fit ($\chi^2 = 21,626.69$, $df = 189$; RMSEA = 0.140; SRMR = 0.158; NNFI = 0.761). Moreover, we applied the marker variable technique (Podsakoff et al., 2003; Williams, Hartman, & Cavazotte, 2010) using a variable that was selected a priori as a part of quality assurance and measured by asking respondents to indicate the extent of reading through all content (Table 5). In line with methodological recommendations (Williams et al., 2010), the variable was theoretically unrelated to substantive variables but was measured on the same scale and administered together with other items. Confirmatory factor analysis with the marker variable under the assumption of common method variance demonstrated a significantly worse fit ($\Delta\chi^2 = 49.50$; $\Delta df = 5$; $p < .001$) and no change in factor loadings or construct correlations. These checks suggest that common method bias was unlikely to influence our results.

Considering the cross-sectional nature of our data, we also addressed the possibility of reverse causality by assessing competing non-nested models. Structural equation modeling is especially suitable for such model comparisons (Merkle, You, & Preacher, 2016). As the chi-square difference test does not directly apply to testing non-nested models, we followed the established tradition of using either the Akaike information criterion (AIC) or the Bayesian information criterion (BIC), with lower values indicating better models (Kline, 2011). We chose BIC because it is a stricter measure that penalizes for sample size and a lack of parsimony.

Table 8 presents two alternative models built using the hypothetical assumption that perceptions of changes in the joint sphere may potentially result from respondents’ opinions of firms rather than vice versa (e.g., Kim, Kim, Garrett, & Jung, 2015). More specifically, Model 2 assumes that customers might see a firm they are attracted to as being more innovative and, as a result, introducing more changes. Model 3 assumes that relative attractiveness drives stronger perceptions of perceived changes. As Table 8 further demonstrates, the model with the originally hypothesized directionality was clearly better than the two alternative models in terms of the BIC and the overall fit. Although such

a check cannot rival experimental designs, it provides additional support for the robustness of our theoretical underpinnings.²

5. Discussion

In contrast to the firm-centric view focusing on organizational antecedents of firm innovativeness (e.g., [Mendoza-Silva, 2020](#); [Saunila, 2020](#)), customer-focused innovation research is driven by the idea that firm performance depends on what customers think about firms' innovation efforts ([Ghanbarpour & Gustafsson, 2022](#)). However, existing research has been limited to examining such customer responses as satisfaction and loyalty (e.g., [Kunz et al., 2011](#); [Pappu & Quester, 2016](#); [Sirdeshmukh, Ahmad, Khan, & Ashill, 2018](#)) and has explicitly or implicitly assumed that customers establish their perceptions of firm innovativeness by discerning new changes at the attribute or product level ([Hubert et al., 2017](#); [Zolfagharian & Paswan, 2008](#)). In this study, we developed a novel approach to measuring innovations as customer-perceived changes in the joint sphere and examined their effects on customers' perceptions of firms' innovativeness and relative attractiveness. We demonstrated that changes in value proposition, value actualization, and interaction space positively influence perceived firm innovativeness, but changes in relationship experience have a negative effect. Perceived firm innovativeness, in turn, has a positive impact on firms' relative attractiveness.

5.1. Theoretical implications

Our study makes several contributions to the literature by broadening the emerging understanding of what happens in the customer space between firms launching their innovations and reaping the results. First, it offers a novel look at the antecedents of perceived firm innovativeness and firm attractiveness and is the first to do so from a value creation perspective. In particular, our study provides an empirically validated instrument for measuring customers' perceptions of changes in value creation introduced by firms in the joint sphere. In contrast to studies examining customers' perceptions of innovation in specific industries ([Kim et al., 2018](#); [Lin, 2015](#); [Omar et al., 2021](#); [Teng & Chen, 2021](#)), our study's constructs and measurement instruments are industry-agnostic, which enables their broad use in future research. Moreover, in contrast to industry-specific studies, we analytically separated overall innovativeness and the dimensions in which innovative changes manifest themselves, which enables a more detailed examination of the mechanism underlying customers' responses to firms' innovations.

Second, this study offers a perspective that goes beyond the traditional one-on-one relationship between a customer and a firm and underlines satisfaction-based research on innovativeness. Using the starting point that customers' assessments of focal firms should be seen in relation to other market players ([Keiningham et al., 2015](#)), our study is the first to demonstrate that customers' perceptions of firm innovativeness guide their comparisons of competing firms. According to our findings, innovative firms are generally perceived as more attractive than their competitors, which suggests that perceived firm

innovativeness should be regarded as providing firms with a major competitive advantage in terms of differentiation. Coupled with previous findings on the positive associations between perceived firm innovativeness, customer satisfaction, and loyalty ([Kunz et al., 2011](#); [Lin, 2015](#); [Pappu & Quester, 2016](#)), our study strongly supports the idea that perceived firm innovativeness is a critical driver of a firm's brand equity and customers' preference for a specific firm ([Aaker, 2007](#); [Beverland et al., 2010](#)).

Third, our study provides new insights into customers' views on the effectiveness of innovation. Firm-focused innovation studies have occasionally attempted to evaluate the effectiveness of different forms of innovation, most prominently product and process innovations (e.g., [Gunday, Ulusoy, Kilic, & Alpan, 2011](#); [Lee, Lee, & Garrett, 2019](#)). However, the results have been inconclusive because of complementarities between innovation forms ([Ballot, Fakhfakh, Galia, & Salter, 2015](#)). Instead of following the traditional form-based approach to differentiating innovations, our study used customers' experiences of changes in the joint sphere, which essentially shift the research focus from the form of innovation to its functional role in value creation. As our results show, changes in value actualization have the largest total effect on relative attractiveness, but the patterns of customer reactions to changes in the joint sphere vary across customers' life stages. The finding that customers at "Chaos in my life" and "Got my life back" life stages are particularly attracted to firms introducing changes in value actualization resonates well with the idea that in their choice behavior, these two age segments focus on the efficiency, effectiveness, and quality of solutions rather than their variety ([Andreassen et al., 2015](#)). In this regard, our findings contradict those of previous research, which suggests that age may negatively affect customers' appreciation of firm innovativeness (e.g., [Gilly & Zeithaml, 1985](#); [Im, Bayus, & Mason, 2003](#); [Lambert-Pandraud & Laurent, 2010](#)). In our study, customers across all life stages evaluated innovative firms as more attractive, but it appears that a life stage-related shift in customer views occurs regarding what "innovative" means, with "Chaos in my life" and "Got my life back" customers appreciating changes in the way value is actualized more than changes in the value proposition itself. This difference in meanings may explain earlier findings on mature customers preferring new solutions from familiar brands but increasingly neglecting new brand alternatives (e.g., [Helm & Landschulze, 2013](#)).

Moreover, our study uncovers the negative effects of changes in the relationship experience dimension, which might appear counterintuitive at first. However, given that building customer relations is a complex, time- and resource-consuming process ([Payne et al., 2009](#)), it may be logical that customers react negatively when established relations change significantly, probably prompting feelings of distrust. Previous research has already reported that, at least for customer loyalty, satisfaction with established customer relationships may matter more than perceived relationship improvements ([Leverin & Liljander, 2006](#)). In light of our valence-independent approach to innovation, our finding is even more striking and may indicate a mismatch between firms' relationship management efforts and customers' preferences, especially in the digital environment. Apparently, firms often introduce relationship innovations in their own interests—for example, by introducing switching barriers or using customer data and machine learning to nudge customers to buy more, buy more often, or lock in. This may not be what customers perceive as innovative. Our findings may also indicate customers' sensitivity and reluctance to accept changes regarding their personal space and information privacy—as also reflected in data misuse scandals, such as the Cambridge Analytica case—as well as increased public attention to data security (e.g., the implementation of the General Data Protection Regulation). To convince customers, managers often resort to marketing tools, but attempts to improve customers' perceptions of firm innovativeness through marketing efforts alone are inefficient and may be detrimental ([Höflinger et al., 2018](#)).

² Following feedback in the review process, we ran additional analyses with industry as a control variable, using a version based on the statistical industry classification reported in this article and a version based on sectoral categories from [Castellacci \(2008\)](#)'s taxonomy. The results remained robust, and differences in parameter estimates between the final model ([Table 5](#)) and each of these models were, on average, 0.02 and 0.01, respectively. However, we did not include industry control in the main study, as extant evidence suggests that customers classify industries differently than statistical services or researchers (e.g. [Bowen, 1990](#)), but a comprehensive customer-based industry classification is currently lacking. The results of the additional analyses can be obtained from the authors.

5.2. Managerial implications

Our study offers a customer-centric innovation resource allocation strategy for maximizing innovation benefits and, eventually, improving firm value. By investing and innovating in areas that facilitate positive customer reactions, firms may improve their perceptions as innovative companies, which strengthens the attractiveness of a company relative to its competitors and ensures the loyalty of existing customers, as well as the attraction of new ones. Over time, these positive mechanisms increase customer lifetime value and customer equity. However, when making decisions about how to allocate innovation funds, managers must consider customer segments and their value-creation processes. Particularly careful consideration should be given to the analysis of how innovation can potentially influence customers' perceptions of their relationship experiences with the firm. As our study shows, current marketing practices and innovation practices in relationship management worsen customers' perceptions of firms' innovativeness and consequently reduce firms' relative attractiveness. In theory, this may lead to further decreases in customer retention, customer lifetime value, customer equity, and firm value. However, our findings do not imply that customers do not want innovations in relationship experience; rather, they reflect a need for firms to adopt the role of an agent acting on customers' behalf. This implies that the firm (agent) should always aim to innovate in the customers' best interests, even if this entails sacrificing some immediate income. To succeed in achieving this aim, understanding how new products, services, and processes affect customers' perceptions and behaviors is essential.

Our findings suggest the importance of implementing a customer-based measure of innovativeness in assessing firms' innovation efforts. Such a measure can usefully complement traditional customer metrics centered on quality and satisfaction. Whereas customer satisfaction measures describe a static condition and reflect the quality-level variance of a company's market offerings, our customer-based innovation measure provides insights into the dynamic processes behind perceived changes in the joint sphere. Therefore, our measure may provide important strategic insights for managers and policymakers. Customer-based innovation indices that rely on our methodological approach have been implemented in Norway, the USA, Sweden, Finland, Denmark, Belgium, and Spain, with other countries showing interest. Combining the information from these customer-based innovation indices with data from customer satisfaction indices could provide a unique overview of a company's strategic position in the market, assisting in strategic decision making.

5.3. Limitations and future research

In designing our study, we followed the classic approach to investigating customers' perceptions of firms and brands (e.g., Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Johnson, Gustafsson, Andreassen, Lervik, & Cha, 2001; Kunz et al., 2011). Although this approach is well established and provides solid support for our theory, future experimental studies can provide further and deeper insights into the causal relationships and mechanisms uncovered in our study. It would be particularly interesting to see studies using innovative solutions as treatments to understand how their attributes affect perceptions of changes in the joint sphere. Similarly, it would be interesting to investigate the impact of information cues and promotions related to innovation launches. Examining different innovation types could also be of interest. For example, digital, environmental, and social innovations deserve special attention in the age of digitalization and growing concerns for sustainability.

Given that we relied on the principle of parsimony in developing our research model, it would be interesting to explore the extensions of our

model in future research. For example, future studies could investigate the role of emotions in mediating the effects of changes in co-creation dimensions on perceived firm innovativeness and relative attractiveness. Another research opportunity involves examining the financial consequences of a firm's relative attractiveness, especially compared to explanations based on the more traditional satisfaction–loyalty relationship (e.g., Ghanbarpour & Gustafsson, 2022).

Due to resource constraints, we prioritized the firms whose products families spend most of their household income on. Future research focusing on start-up companies and companies with low market penetration may help acquire broader knowledge of perceived firm innovativeness. Although the comparability of the Norwegian population to other populations in developed countries suggests the generalizability of results, we would encourage replication of the study in other contexts. In addition, our study focused only on life stage as a moderating variable; other demographic, psychographic, and socioeconomic characteristics—for example, ethnic identity, income, customers' technology readiness (Parasuraman, 2000), involvement (Zaichkowsky, 1985), and need for uniqueness (Tian, Bearden, & Hunter, 2001)—could serve as worthwhile moderating variables in future studies.

CRedit authorship contribution statement

Seidali Kurtmollaiev: Project administration, Methodology, Formal analysis, Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **Line Lervik-Olsen:** Project administration, Conceptualization, Formal analysis, Methodology, Writing – review & editing. **Tor W. Andreassen:** Resources, Project administration, Conceptualization, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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