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To cite this article: Ove Oklevik, Herbjørn Nysveen & Per E. Pedersen (2022): Exploring the relationship between co-creation (DART), brand experience strength, and brand satisfaction: a brand engagement perspective, Journal of Marketing Theory and Practice, DOI: [10.1080/10696679.2022.2120013](https://doi.org/10.1080/10696679.2022.2120013)

To link to this article: <https://doi.org/10.1080/10696679.2022.2120013>



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Published online: 03 Oct 2022.



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Exploring the relationship between co-creation (DART), brand experience strength, and brand satisfaction: a brand engagement perspective

Ove Oklevik ^{a,b}, Herbjørn Nysveen^c, and Per E. Pedersen^{c,d}

^aDepartment of Business Administration, Western Norway University of Applied Sciences, Sogndal, Norway; ^bDepartment of Marketing, Management and Finance Institute WSB University, Gdansk, Poland; ^cDepartment of Management and Strategy, Norwegian School of Economics, Bergen, Norway; ^dDepartment of Business, History and Social Sciences, University of South-Eastern Norway (USN), Kongsberg, Norway

ABSTRACT



Although a few studies have examined the influences of the co-creation elements of dialogue, access, risk assessment, and transparency (DART), little is known about the mechanisms underlying these influences. In this article, we empirically study the DART element's influences on brand experience strength and brand satisfaction, and we explore how brand experience strength mediates the DART elements' influences on brand satisfaction. We use a brand engagement perspective to explain how the co-creation elements influence brand experience strength. A survey ($n = 594$) of brands from the banking, mobile, hotel, and restaurant services is reported. We find direct influences from all four co-creation elements on brand experience strength, and we find that brand experience strength partly mediates the influences of risk assessment and transparency on brand satisfaction. The results are compared across utilitarian (bank and mobile) and hedonic (hotel and restaurant) services.

Introduction

Brands operate in competitive environments in which the understanding of customers' needs and preferences is key to value creation. One way to gain such an understanding is to engage customers in value co-creation where customers jointly invest and integrate their resources together with the firms' resources to create value. Value co-creation has been comprehensively studied the last decade, it has received a lot of attention in top journals (see Appendix), and it is considered a promising perspective for firms' success (Saha et al., 2022). However, value co-creation is defined and conceptualized in many ways (Ranjan & Read, 2016; Saha et al., 2022). Several theoretical paths have been applied to understand and explain value co-creation (Saha et al., 2022; Ranjan & Read, 2016; Alves et al., 2016; Galvagno et al., 2014), but many studies have not anchored the construct clearly in theory (Saha et al., 2022). Despite fragmented conceptualizations, value co-creation often has an experiential focus (Prahalad & Ramaswamy, 2004c; Saha et al., 2022; Vargo & Lusch, 2008) and assumes joint engagement where both the firms and the customers (and other relevant actors) interact in value creation (Prahalad & Ramaswamy, 2004c; Ramaswamy & Ozcan, 2018). To realize its' full

potential, a key challenge is to understand how to adopt and implement value-co-creation successfully. To improve our knowledge on how to harvest the most out of value co-creation, we apply the DART (dialogue, access, risk assessment, transparency) framework introduced by Prahalad and Ramaswamy (2004c). We relate the DART elements to experiential value and use an engagement perspective to theoretically explore these relationships.

France et al. (2020) point to the relevance of understanding different *elements* of co-creation. A central, element-based perspective in the co-creation literature is the DART perspective (Prahalad & Ramaswamy, 2004c). We take the perspective that the individual DART elements can contribute to brand value both in the co-creation of brand experience and in the outcomes of co-created brand experience, and use brand satisfaction to reflect the outcome of co-created brand experience (Brakus et al., 2009). Although much research is conducted on brand value co-creation (Appendix) and on the influences of the DART elements (Table 1), "... there is less certainty about the *mechanisms* by which value emerges" from these elements (France et al., 2020, p. 466, our italics). Given that we consider both brand experience and brand satisfaction as brand value

CONTACT Ove Oklevik  ove.oklevik@hvl.no  Department of Business Administration, Western Norway University of Applied Sciences, Post box 133, 6856, Sogndal, Norway

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Table 1. Overview of studies investigating the influences of individual DART elements on brand value.

Reference	Method	Product/Service	Respondents	DART measures	Dependent variable	Main results
Chakraborty (2019)	Quantitative (survey, n = 231)	Hospital suppliers	Hospital employees with procurement and purchasing understanding (Business context)	Generated based on several sources	Care service orchestration ("the extent to which the technology and process-enabled platform integration fosters growth and synchronous transmission of data and service flow between interactive network partners in a transparent value adding conductive environment" (p. 403))	Positive influences of all four DART building blocks on Care service orchestration
Zaborek and Mazur (2019)	Quantitative (CATI survey, n = 395; n = 196 among manufacturing companies and n = 199 among service companies)	Manufacturing companies (food and nonalcoholic beverage) and service companies (hospitality, tourism, and catering)	Managers of SMEs (Business context)	Generated based on several sources	Operational performance (OP): "the sum of six binary items representing various operational benefits" (p. 545) ROI: "Overall firm productivity, as sourced from a separate database with independently verified financial metrics" (p. 545)	Entire sample: Positive influences of D on OP and ROI and positive influence of A on OP. Influence of D on OP is stronger for service compared to manufacturing. Influence of A on OP is stronger for manufacturing compared to service. Positive influences of DRT on Innovation strategy.
Taghizadeh et al. (2016)	Quantitative (survey, n = 249)	Telecommunication industry	Managers under marketing department (Business context)	Based on Prahalad and Ramaswamy (2001) and some other sources	Innovation strategy: Making major and rapid changes in existing services, making novel new services, and using forecasting tools/techniques to imagine future threats and opportunities. (p. 34). Service loyalty: Focus on loyalty to provider of service/product	Positive influence of A on service loyalty.
Albinsson et al. (2016)	Study 2: Quantitative (survey, n = 269)	Predominantly Telecommunication, Cable TV, Computer hardware companies.	University students (Consumer context)	Generated based on several sources. Work by Prahalad and Ramaswamy are mentioned specifically.	Logistic operational performance (LOG): Relates to companies "ability to deliver goods and services in precise quantities and at the precise times required by customers" (p. 93). Financial performance (FIM): Relates to "cost reduction, increasing market share and growing profit" (p. 93). Environmental performance (EVP): Relate to "the ability of LSPs to increase the mutual understanding of environmental policy with their suppliers in complying with green regulations" (p. 94). Social performance (SOC): Relate to "the social impact of a business on its stakeholders" (p. 94).	Positive influence of D on LOG. Positive influences of A on EVP and SOC. Positive influences of R on LOG, FIN, EVP, and SOC. Positive influences of T on LOG, FIN, EVP, and SOC.
Fernando and Chukai (2018)	Quantitative (Survey, n = 145)	Logistic Service Providers (LSP)	Management level employees (Business context)	Measures derived from many sources	Four dependent variables; Brand trust (BT), Customer perceived value (CPV), Brand associations (BA), and Brand loyalty (BL). The questions reported show that the respondents answered related to brand's website.	Positive influences of D on BA and BL. Positive influences of A on BT and CPV. Positive influences of T on BT and CPV
Shen et al. (2019)	Quantitative (Survey, n = 245)	Online Tourism Enterprises	Main category of respondents were students (n = 131), staff (n = 30), civil servants (n = 22, technical workers (n = 16), etc (Consumer context)	Based on Prahalad and Ramaswamy (2004b,c) and Zhang et al. (2015)		

(Continued)

Table 1. (Continued).

Reference	Method	Product/Service	Respondents	DART measures	Dependent variable	Main results
Taghizadeh, Rahaman, & Marimuthu (2022)	Quantitative (Survey, n = 230)	Telecommunication	Managers engaged in marketing and innovation decision-making in B2B and B2C context (Business context)	Sources for measures are not reported. It says items are adapted from literature.	<i>New Service Market Performance (NSMP):</i> Performance of new services in a market <i>Value-informed pricing (VIP):</i> Pricing based on customer value perception	Positive influences of D on NSMP and VIP Positive influences of T on NSMP and VIP
Solakis et al. (2021)	Quantitative (Survey, n = 484)	Hotel	Tourists in hotels (Consumer context)	Based on Albinsson et al. (2016), Taghizadeh et al. (2016) and Mazur and Zaborek (2014a)	<i>Positive experience:</i> Capturing the experience of elements of the hotel.	Positive influences of A and T on positive experience.
Solakis et al. (2022)	Quantitative (Survey, n = 484)	Hotel	Tourists in hotels (Consumer context)	Based on Albinsson et al. (2016), Taghizadeh et al. (2016) and Mazur and Zaborek (2014)	<i>Perceived price</i> <i>Perceived quality</i>	Positive influences of RT on Perceived price Positive influences of ART on Perceived quality
Taghizadeh et al. (2022)	Quantitative (survey, n = 105) (Content analysis: Complementary results from a content analysis of tourists' online feedback are discussed.)	Hotel	Hotel marketing managers (Business context)	Based on Taghizadeh et al. (2016)	Innovation performance = f(service development, delivery process) <i>Service development:</i> Degree of, quality, ease of use, time, and costs related to service development. <i>Delivery process:</i> Response time to order, time for adjustments to complaints, cost of delivery,, quality of delivery process, and standard with development process.	Positive influences of D and A on service development Positive influences of A, R, and T on delivery process.
Giuseppe et al. (2022)	Study 1 (Focus group) and Study 2 (Survey): To develop and validate scales Study 3: Quantitative study – testing the model (survey, n = 331)	Destination management/marketing organization (DMO)	Tourism actors/stakeholders at a destination (Business context)	Self developed (Study 1 and Study 2)	<i>Market performance</i> = f(attract new tourists, open up new tourist markets, capture greater market share, increase tourist retention, increase tourists' satisfaction)	Positive influence of R on market performance. (Controlled for Potential capabilities and Realized capabilities)

dimensions that can be influenced through co-creation, we respond to this gap by investigating how brand experience mediates the influences of the DART elements on brand satisfaction. Further, co-creation encompasses both utilitarian and hedonic value (Park & Ha, 2016) and brand experience has been suggested to influence brand satisfaction differently across brands with *utilitarian and hedonic benefits* (Oliveira Santini et al., 2018). Saarijärvi et al. (2013, p. 11) also argue that the discussion of the co-creation concept has hardly addressed “whether value co-creation results in value that is more utilitarian or more hedonic”, and there is a lack of empirical research on how service type (hedonic versus utilitarian) may moderate consumers’ preferences for different types of customer participation” (Blinda et al., 2019, p. 317). Finally, there seems to be a lack of systematic theoretical underpinnings in many of the existing studies on value co-creation (Saha et al., 2022). Ramaswamy and Ozcan (2016, p. 94) point to many of the gaps identified above, arguing that “there has been very little recognition in the value co-creation literature (Galvagno & Dalli, 2014) on its relevance and impact on brands through its engagement processes, and especially the role of human experiences (Ramaswamy, 2011) in brand building.” Against this background, the *purpose* of this study is to empirically 1) examine how the DART *elements* of co-creation influence brand experience and brand satisfaction, 2) examine how brand experience *mediates* the influences of the DART elements of co-creation on brand satisfaction, and 3) investigate how these influences manifest across brands that offer *utilitarian and hedonic benefits*. Since brand experience is realized through engagement in co-creating interactions (Ramaswamy & Ozcan, 2016), we 4) use brand engagement as a theoretical perspective to explain how the DART elements influence brand experience and brand satisfaction.

The study provides some contributions and managerial implications. First, we contribute to the branding literature by adding to the few empirical DART studies of consumers, and we advance the existing research by studying the influences of the DART *elements* on brand experience and brand satisfaction (see Table 1). Using an element based perspective (France et al., 2020), this contributes to improve the diagnostic potential of the co-creation concept and can guide brand managers in implementing more specific co-creation tactics to stimulate brand satisfaction. Second, our focus on how brand experience *mediates* the DART elements’ influence on brand satisfaction contributes to a better understanding of “how managers actually use co-creation to connect with customers” (Ind et al., 2017, p. 310). Moreover, this

focus improves the understanding of co-creation processes (Payne et al., 2008), and adds more certainty to the understanding of how brand value emerges from co-creation (France et al., 2020). Third, in revealing the boundary conditions for the influences of the DART elements across brands that offer utilitarian versus hedonic benefits, we contribute to the existing research by empirically clarify if service type moderates the relationships between co-creation, brand experience, and brand satisfaction. This ensures the robustness of our findings and provide more specific guidance for brand managers in both brand categories. Finally, since engagement is critical to co-creation (Hatch & Schultz, 2010; Jaakkola & Alexander, 2014; Ramaswamy & Ozcan, 2016), we demonstrate how systematic theoretical underpinnings (DART and engagement theory) can support empirical studies in co-creation research. Although Nysveen and Pedersen (2014) pursued a brand engagement perspective in a similar way, our article contributes to the theory by better specifying investment in brand interactions (Hollebeek, 2011b) as the critical element of brand engagement and by discussing how such interactions transform the influence of each co-creation element into a brand experience.

The results revealed in this study indicate positive influences of dialogue, access, and transparency on brand experience, while risk assessment is found to be negatively associated with brand experience. Further, we find that brand experience mediates the influences of risk assessment and transparency on brand satisfaction. Finally, the results seem to be valid across utilitarian and hedonic services. Based on the results, we encourage marketing managers across service categories to facilitate dialogue, access, and transparency while carefully balancing risk assessment to avoid negative influences on brand experience.

In the “Literature review” subsection, we discuss the DART elements, brand experience, brand satisfaction, and brand engagement. The hypotheses are presented in the “Hypotheses” subsection. Furthermore, the research method and measure validation are described in the “Method” subsection whereas the results are presented in the “Results” subsection. Finally, the implications of the results and avenues for future research are elaborated upon in the “Discussion” subsection.

Literature review

Co-creation

Co-creation elements (France et al., 2020) are important to our research because understanding the relationships between the elements of co-creation and value

contributes to “advancing theoretical knowledge and bolstering managerial application of co-creation” (France et al., 2020, p. 468). Studies have examined development, feedback, advocacy, and helping as elements of customer brand co-creation behavior (France et al., 2020), co-production (knowledge, equity, and interaction) and value-in-use (experience, personalization, and relationship) as antecedents to value co-creation (Ranjan & Read, 2016), and customer participation behavior (information sharing, information seeking, personal interaction, and responsible behavior) and customer citizenship behavior (advocacy, helping, feedback, and tolerance) as dimensions of customer value co-creation behavior (Yi & Gong, 2013).

In this article, we define co-creation as the “joint creation of value by the company and the customer” (Prahalad & Ramaswamy, 2004b, p. 8) and we understand co-creation to comprise the four DART elements. Access, transparency, and dialogue are also included as part of the equity and interaction elements of the co-production dimension in the work of Ranjan and Read (2016), which illustrates the contemporary relevance of the DART framework. *Dialogue* concerns the interactivity among problem-solvers who are of equitable importance. The term is described as interactive, engaging, and with an intention to act on both the company’s and the consumer’s interests (Mazur & Zaborek, 2014a; Prahalad & Ramaswamy, 2004c). *Access* refers to offering tools and procedures with which to collect information and facilitate interaction between customers and companies (Mazur & Zaborek, 2014a) and between consumers. Access to the same information is necessary for both companies and consumers to meaningfully dialogue (Prahalad & Ramaswamy, 2004b). *Risk assessment* involves consumers’ rights to be informed about possible risks and benefits and opportunities so that they can assess risks and benefits before accepting any offers (Mazur & Zaborek, 2014a). Access to information, dialogue with a company (and other consumers), and full transparency are critical to risk assessment. This element is also related to reflexivity (e.g. Ramaswamy & Ozcan, 2016), that is, ensuring that “the inputs of participants and their interactions can be used to both improve the content and the experience of the users themselves” (Leavy, 2012, p. 29). Finally, *transparency* implies that information is symmetric, and that it includes the open availability of timely and precise information about value propositions (Mazur & Zaborek, 2014a; Prahalad and Ramaswamy, 2004c).

We found that quantitative studies have validated DART scales (Chi et al., 2022; Mazur & Zaborek, 2014a, 2014b) and investigated the DART elements’

significance to co-creation constructs, such as co-creation activities (Chakraborty, 2018), co-creation (Mainardes et al., 2017; Malik & Ahsan, 2019; Taherpour et al., 2016), customer participation (Villalba & Zhang, 2019), co-creation dynamics (Chen et al., 2017), value co-creation (Akter et al., 2022; Taghizadeh et al., 2019), the perception of co-creation of value (González-Mansilla et al., 2019), and co-creation experience (Suprayogo & Sutarmo, 2021).

The studies reported in Table 1 are the most relevant to our work because they quantitatively investigate the effects of the individual DART elements on outcome variables other than co-creation constructs. However, only the studies by Albinsson et al. (2016), Shen et al. (2019), (Solakis et al. 2021, 2022) investigated co-creation from the consumer perspective. In addition to the articles reported in Table 1, Moeinzadeh and Fernando (2013) found positive influences of DAR on logistic service innovation capability among logistic service providers in Germany, whereas Abdelwarith and Gharib (2019) reported positive correlations between the DART elements and co-innovation among employees in travel agencies and hotels. Limiting their study to D and T, Sesliokuyucu and Polat (2020) found positive influences of these antecedents on airline passengers’ trust. Maduka (2016) and Christian et al. (2019) reported positive influences of DAT on loyalty to a pension service, but Maduka (2016) reported results from a larger sample (n = 385) than Christian et al. (2019) (n = 364).

Brand experience

We adopted the definition of brand experience by Brakus et al. (2009, p. 53) as “subjective, internal consumer responses (sensations, feelings, and cognitions) and behavioural responses evoked by brand-related stimuli that are part of a brand’s design and identity, packaging, communications, and environments.” As brand experience dimensions, *sensory* brand experience refers to the degree to which a brand makes a strong impression on, is of interest to, and appeals to consumers’ senses. *Affective* brand experience concerns the emotions, feelings, and sentiments induced by a brand. Intellectual, or *cognitive*, brand experience captures how a brand stimulates thinking, curiosity, and problem solving among consumers. The *behavioral* dimension of a brand experience taps into the degree to which a brand is action-oriented and engages consumers in physical actions and behavioral responses. Since we investigated service brands, we also included *relational* brand experience as a dimension that expresses consumers’ feelings of inclusion in a brand family or

community (Nysveen et al., 2013). Brakus et al. (2009, p. 52) sought to “develop a scale that can measure the strength with which a brand evokes each experience dimension.” Hence, we refer to brand experience as brand experience strength in the remainder of this article.

A brand engagement perspective on co-creation effects

As suggested by Prahalad and Ramaswamy (2004a), the elements of co-creation (DART) enable companies to engage consumers in collaboration and value creation. Ramaswamy and Ozcan (2016) point to the importance of engagement platforms where customers can actively engage in co-creation with brands in various ways. The relevance of engagement in co-creation was also emphasized by Kull and Heath (2016) and Keeling et al. (2021) (see Appendix). Building on this, we argue that the active engagement in co-creation with brands is what influences brand experience strength. We applied the definition of customer brand engagement proposed by Hollebeek (2011b, p. 555; emphasis added): “the level of a customer’s cognitive, emotional and behavioral *investment in specific brand interactions*.” In their “unifying perspective,” Ramaswamy and Ozcan (2018, p. 196) also suggested “creation through interactions” to describe co-creation, and they defined co-creation as the “enactment of interactional creation across interactive system-environments.” Thus, investment in *brand interactions* is a key element of these definitions. Hence, we adopted an engagement perspective that considers customers’ cognitive, emotional and behavioral engagement in co-creation with a brand to be the mechanism that explains the influences of co-creation on brand experience. This aligns with the perspective taken by Nysveen and Pedersen (2014), who suggested that co-creation stimulates brand experience through brand engagement.

Brand value

In this article we focus on brand value as it is perceived by customers (France et al., 2020). Several articles have emphasized experiences as critical to value co-creation (Payne et al., 2008; Grönroos & Voima, 2013; Ranjan & Read, 2016; see Appendix), and Prahalad and Ramaswamy (2004b, p. 13) argued that “The brand is co-created and evolves with experiences.” The co-creation perspective in the service-dominant logic also emphasizes value as experiential (ref FP 10 in Vargo & Lusch, 2008). Both brand experience and brand value outcomes are included as part of the brand value co-creation framework proposed by Ramaswamy and Ozcan (2016; Figure 1, p. 95). Their framework indicates that both brand experiences and the outcomes of brand experiences can be perceived as brand value. According to France et al. (2020), earlier conceptualizations of perceived value among customers were typically based on overall evaluations of what they received from a brand. Customer satisfaction with a brand is an example of such an overall value measure. Further, conceptualizations of value have also diverged “regarding the stage of realization” (France et al., 2020, p. 468), which indicates that customers can perceive brand value both in experiences related to engagement in brand value co-creation and in the outcomes of such experiences (e.g. brand satisfaction). Other authors have also used satisfaction as an outcome measure of co-creation (Dong et al., 2008; Heidenreich et al., 2015; Roggeveen et al., 2012; see Appendix). Hence, we consider both brand experience and brand satisfaction to be part of customer perceptions of brand value (see Figure 1).

Chandler and Lusch (2015, p. 10) pointed to the temporal connection between engagement and experience. They argued that engagement can be “continually changing” and that “Engagement is based on actors’

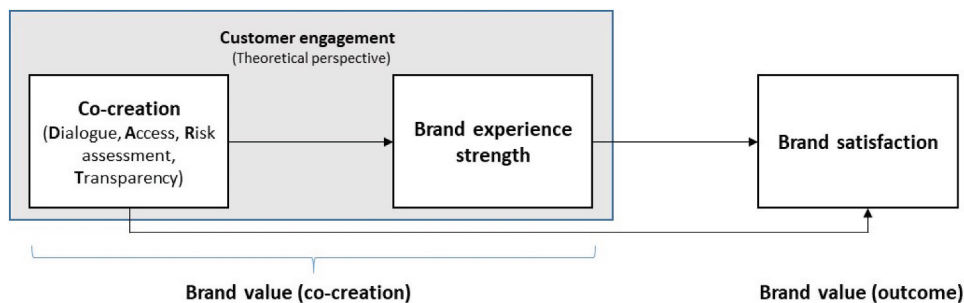


Figure 1. Research model.

present-day connections that have emerged from past service experiences and are oriented toward future service experiences.” We focus on the temporal phase in which today’s active engagement in co-creation influences future brand experience and brand satisfaction. The concept of brand experience as a potential consequence of brand engagement is well established in the literature (Hollebeek, 2011a; Rather, 2020; Rather & Hollebeek, 2021; Rather et al., 2022).

In Figure 1, we propose that the co-creation elements influence brand experience strength and that engagement (investments in brand interactions) is the theoretical mechanism that explains why co-creation elements affect brand experience strength. Furthermore, Figure 1 indicates that the elements of co-creation can influence brand satisfaction both directly and through brand experience strength. As illustrated in Figure 1, we take the perspective that customers perceive brand value in both the experiences realized through their active engagement in co-creation ((brand value (co-creation)) and the brand satisfaction that results from this engagement and these experiences (brand value (outcome)).

In the following, we propose hypotheses about the influences of each of the DART elements on brand experience. The logic throughout this study holds that co-creation stimulates engagement – that is cognitive, emotional, or behavioral investments in various forms of interaction – and through that, various forms of brand experience. Hence, we use brand engagement as a theory to derive the relationships between the DART dimensions and brand experience. This approach is similar to studies that have used other theories to derive a relationship, such as when the resource-based view is used to explain the relationship between human-resource (HR) configurations and firm performance (Lee et al., 2005).

Hypotheses

Dialogue

Dialogue takes place in both physical and online contexts, but the evolution of social media platforms has presented opportunities for dialogue with both a brand and other consumers in numerous online communities. Such rich contexts expose consumers to various dialogue formats through which they can express themselves, such as voice, text, photos, and videos. Hence, dialogue can stimulate consumers’ senses in different ways and strengthen their *sensory brand experiences*. Prahalad and Ramaswamy (2004c) argued that dialogue includes empathic understanding. When consumers feel invited to interact with empathic brand employees or other

consumers who provide fast and helpful support, their gratitude may be encouraged and they may be motivated to invest in dialogue with a brand. This dialogue, in turn, can induce *affective brand experiences*. Investing in opportunities for customers to dialogue with brand employees or other consumers can also stimulate knowledge creation (Taghizadeh et al., 2016) and problem-solving (Mainardes et al., 2017; Mazur & Zaborek, 2014a). Hence, dialogue can engage consumers in thorough thinking and help them through complex evaluative processes and possible decision-making processes that, in turn, can influence their *cognitive brand experience*. Dialogue also depends on consumers’ and companies’ intention to act (Prahalad & Ramaswamy, 2004c). By providing rich opportunities for dialogue, brands facilitate and encourage consumers to invest in active dialogs and respond to others’ initiatives for dialogue in various ways with both the brand and other stakeholders. This investment can consequently contribute to stronger *behavioral brand experience*. Finally, dialogue is by definition relational. Investing in dialogue-oriented engagement platforms provides opportunities for various forms of person-to-person interaction and socializing. These opportunities can in turn strengthen the *relational brand experience*.

Hypothesis 1: An increase in dialogue leads to stronger brand experience.

Access

Banks grant consumers access to tools with which they can calculate the costs of a loan, and banks also willingly provide third parties with access to information about these costs so that comparison services can help consumers compare different banks. Hotels and restaurants offer consumers access to reservation tools that they can use to match availability with their own time schedules or willingness to pay. Brands are accessible 24/7 through chat services, and they increasingly invite consumers and other third parties to engage in their most strategic activities using tools (Franke & Piller, 2004) that can consequently motivate brands and consumers to interact further. Sensory expressions provided through tools and information can include the material and weight of printed information or sensory expressions such as colors, graphics, designs, and styles (Hultén, 2011). Hence, investments in access to information and tools on engagement platforms exposes consumers to a broad spectrum of sensory stimuli that can influence their *sensory brand experiences*. Providing engagement platforms with access to information and tools invites

consumers to participate in various forms of interaction that can “foster the fruition and enjoyment of the proposal at the point of sale” (Spena et al., 2012, p. 29) and help them realize the full value of a brand’s value proposition. Realizing the full value of a value proposition often also implies emotional values – such as fun, enjoyment, and safety – that can strengthen *affective brand experiences*. Another element of access is the utilization of consumers’ resources, skills, and knowledge (Ramaswamy & Ozcan, 2013). Brands may invest in engagement platform tools that enable consumers to interact and share their own resources, skills, and knowledge. These investments can engage individual consumers in reflection, thinking, and problem solving, thereby strengthening their *cognitive brand experience*. Leavy (2012, p. 29) also underscored that access does not only mean access to a company’s content but also the possibility to “modify and extend” this content. Investing in tools with which consumers can modify, extend, personalize, or customize value propositions provides opportunities to improve consumer value (Franke & Piller, 2004). Such improvements can motivate and encourage consumers to initiate active interactions with a brand in order to gain personalized or customized value, which can strengthen *behavioral brand experiences*. Access also includes brands facilitating consumers’ ability to communicate with the brand and with other customers of the brand (Ramaswamy, 2008). Engagement platforms that offer access to information sharing tools provide a context for rich social interaction that can strengthen customers’ *relational brand experience*.

Hypothesis 2: An increase in access leads to stronger brand experience.

Risk assessment

Many brands provide consumers with opportunities for personalization and customization to increase the benefits of their offerings and to reduce the risk of targeting customers with irrelevant offerings. Online shopping platforms offer consumers tools for choosing between alternative shipping and payment opportunities, interactive mirrors to try alternative versions of their products on, and, if an online purchase still feels too risky, guaranteed free returns for purchases. Spena et al. (2012, p. 29) included “Tools, data, conversation and actions” as some fundamental elements of risk assessment. Offering tools and data through various formats and interfaces can motivate consumers to invest in interactions to assess risks and benefits. These investments will

expose consumers to a rich spectrum of sensory stimulation that can strengthen their *sensory brand experience*. By offering interactional functions for risk assessment on engagement platforms, consumers can invest in risk-reducing interactions and provide ideas for innovations that can improve their affection for a brand and, thereby, strengthen their *affective brand experience*. Trade-offs between risks and benefits require cognitive elaboration. Brands are available on many engagement platforms that support risk assessment and invite consumers to invest in risk-assessing interactions in many ways. The availability of a variety of interactional investments intended to simplify and support cognitive elaboration related to risk assessment likely strengthens consumers’ *cognitive brand experience*. Spena et al. (2012) identified action as an element of risk assessment, and risk assessment requires initiatives and interactional efforts. Brands that invest in interactional tools that provide information, risk versus benefit evaluations and contact with brand employees and other consumers, facilitate consumer activation that can strengthen the *behavioral brand experience*. Spena et al. (2012) also highlighted the conversational element of risk assessment. A brand that invests in engagement platforms offering easy conversations (interactions) with brand employees or other consumers can strengthen consumers’ feelings of inclusion in the brand family. This may in turn strengthen the *relational brand experience*.

Hypothesis 3: An increase in risk assessment leads to stronger brand experience.

Transparency

Many brands stimulate interactions through activity on social media fan pages, various online rating forums, and online shopping comparison sites. Some brands also offer their own rating systems that provide consumers with further opportunities to post comments and easily share content with others, giving consumers full transparency into other consumers’ evaluations of their brand experiences. Complete visibility is mentioned in Prahalad and Ramaswamy’s (2004c) discussion of transparency, which indicates the relevance of visual sensations. Transparency through a variety of platforms, interfaces, and formats may motivate consumers to invest in brand interactions across many of the available platforms, interfaces, and formats. These investments can stimulate several consumer senses and, thus, strengthen their *sensory brand experience*. Studying the influences of performance transparency, Liu et al. (2015) found that performance transparency negatively

influences customers' perception of uncertainty. This reduction in perceived uncertainty can involve an emotional element, since reduced uncertainty may contribute to less anxiety and more fun when interacting with a brand. Hence, investing in interactional components that increase transparency could set consumers' emotions free and strengthen their *affective brand experience*. Furthermore, Liu et al. (2015) argue that performance transparency can reduce consumers' costs of information processing. This implies that investments in the interactional components of engagement platforms that increase transparency could facilitate consumers' information processing and strengthen the *cognitive brand experience*. Generally, consumers must act on the information or tools that are available to them in order to benefit from transparency. Both consumers and brands must actively make information available to others. Hence, transparency can activate consumers' interaction with a brand, thereby strengthening their *behavioral experience*. Ramaswamy (2008) discusses transparency as information sharing. This sharing expresses how participants in transparent activities can feel part of the same brand community and illustrates the influences of transparency on *relational experience strength*.

Hypothesis 4: An increase in transparency leads to stronger brand experience.

Brand experience strength

Brakus et al. (2009) argued that strong brand experiences increase customers' brand satisfaction. They identified the positive influences of brand experience strength (as a second-order construct) on brand satisfaction and brand loyalty for 12 different brands. Nysveen et al. (2013) revealed the negative influence of a second-order brand experience strength construct on brand satisfaction and mixed results for the influences of various brand experience dimensions (sensory, cognitive, affective, behavioral, and relational) on brand satisfaction. However, many studies have found positive influences of brand experience. Başer et al. (2015) found positive influences of brand experience on satisfaction, loyalty, and trust for four brands. Positive influence of brand experience on brand attitude, brand attachment, and brand equity was revealed by Dolbec and Chebat (2013) for flagship and brand stores. Ramaseshan and Stein (2014) identified positive influences of brand experience on brand attachment, brand commitment, purchase brand loyalty, and attitudinal brand loyalty

among three brands. Moreover, brand experience was found to have positive influences on brand satisfaction and brand loyalty among Vietnamese students in high-, medium-, and low-involvement product categories (Kim et al., 2015). Şahin et al. (2013) also found positive influences of brand experience on repurchase intention, price premium, word of mouth, and satisfaction in the automotive context.

Hypothesis 5: Brand experience strength leads to increased brand satisfaction.

The logic we have applied in our research suggests that engagement in co-creation elements influences brand experience strength and, accordingly, brand satisfaction. Additionally, this logic implies that the influence of co-creation on brand satisfaction is mediated through brand experience strength. The two experience perspectives called "Co-creating value through customer experience and competence" (Galvagno & Dalli, 2014, p. 652) and "Co-creative experiences and loyalty" (Alves et al., 2016, p. 1629), also suggest that *experience* mediates the influences of co-creation. However, Prahalad and Ramaswamy (2004c, p. 23) stated that "Dialogue creates and maintains a loyal community," and Albinsson et al. (2016) found a direct positive influence of access on loyalty. Both these contributions indicate possible direct and positive influences of co-creation elements on loyalty. Studying the effects of co-creation on brand experience, satisfaction, and loyalty, Nysveen and Pedersen (2014) revealed that co-creation as a higher-order construct influences brand satisfaction and loyalty both directly and indirectly through the dimensions of brand experience strength. Given these findings of prior research, we propose that co-creation influences brand satisfaction both directly and indirectly through brand experience strength.

Hypothesis 6: The influence of the co-creation elements (DART) on brand satisfaction is partially mediated by brand experience strength.

Method

As part of the requirements for a course in research methods, 99 students at the Western Norway University of Applied Sciences were instructed to collect data from six respondents each. Student-recruited sampling has been found to be demographically similar to and does not seem to deviate significantly from non-student-recruited sampling regarding observed correlations

(Wheeler et al., 2014). Additionally, student-recruited sampling is a highly effective form of convenience sampling that does not suffer from many of the potential biases of student sampling in marketing research (James & Sonner, 2001). The students were informed that they could interview anyone they liked, such as parents, siblings, neighbors and friends – except for fellow students and faculty members in the department that organized the course. They were also instructed to ensure that the questionnaires were filled out completely. To avoid the mono-operationalization of the service category, we developed questionnaires for hotel, restaurant, banking, and mobile operator companies. Most consumers are familiar with these service types. Further, some level of interaction between such services and consumers is necessary to create value. These types of services typically also offer both online and offline engagement platforms. Overall, these characteristics makes these four types of services relevant to the study of co-creation. We divided the students into four approximately equally sized groups, and each group collected data from respondents using one respective version of the questionnaire (concerning one of the respective service categories). Each student collected data from three women and three men of different ages.

The beginning of the questionnaire instructed respondents as follows (this following example is from the banking version of the questionnaire):

We now want you to think about the bank at which you are a customer. If you are a customer at several banks, you can think about the bank you consider to be your main bank. Please take some time to think about this bank and a particular contact that you have had with the bank. For example, this can be a contact related to establishing your relationship with the bank, establishing a savings account, taking out a loan, or another type of contact you have had with the bank.

The respondents were then encouraged to answer the survey items that measured the DART dimensions based on their memories of interacting with the recalled bank (or, for the other versions of the survey, a business in the respective service category). After they had responded to the DART items, they were provided with the following new instructions (this example is again derived from the banking version of the questionnaire):

We rarely think about it, but a bank can affect our feelings, make us think, and provide us with various sensory experiences. A bank can also engage us in various ways, and make us feel that we are part of a community. In this way, a bank can provide customers with various experiences; such experiences can be both positive and negative.

We then encouraged the respondents to inform us about their experiences with their main bank (or hotel, restaurant, or mobile operator) by responding to the items related to the five brand experience dimensions.

The described procedure collected a dataset comprising 594 respondents (99 students collected data from six respondents). All the questionnaires were filled out completely. The average age of the respondents was 32.9 years, and 297 men and 297 women ultimately participated in the study. Of the respondents, 3.5% had completed an education at the primary school level, 27.3% had a high school-level education, 48.7% had completed one to three years of higher education, and 20.4% had completed more than three years of higher education.

Measurement validation

We built on the DART scale proposed by Albinsson et al. (2016). This is the scale most faithful to Prahalad and Ramaswamys' (2004c) definition of co-creation (Mainardes et al., 2017) and has also inspired other researchers' empirical studies (e.g. Mainardes et al., 2017; Malik & Ahsan, 2019). The dialogue element of the DART scale was measured based on four of the nine items proposed by Albinsson et al. (2016); we selected the items with the highest factor loadings from their Study 1. Access was measured based on the three items used by Albinsson et al. (2016); however, to obtain more robust measurements, we extended this measure with a fourth item. The additional item for the access dimension was "Brand' let me decide how they should send or communicate their offerings to me." This item was developed by the authors. Risk assessment was based on the three items with the highest loadings in Study 1 by Albinsson et al. (2016) as well as the item "Brand' informed me thoroughly about how they assessed benefits and risks for their services" based on their item capturing the positive and negative factors associated with product offerings (Albinsson et al., 2016). The items used by Albinsson et al. (2016) to measure transparency seemed slightly unstable, and the loadings were rather low in those authors' Study 1. Hence, we adapted these items. The first item we used was "Brand' treated me as an equal partner," which is a simplification of the third item used by Albinsson et al. (2016; Table 1). Another item used was "Brand' answered openly to all my questions," which was intended to capture the meaning of the second item used by Albinsson et al. (2016; Table 1). We also used the item "Brand' fully disclosed information about their activities/ offerings and why they recommended them." This item was intended to capture the "fully disclose" element of the first and fourth items used by Albinsson et al. (2016;

Table 2. Item wording, descriptives, and standardized factor loadings, Cronbach’s alpha, CR, and AVE (confirmatory factor analysis of first-order latent variables). $\chi^2/d.f. = 2.21$, CFI = 0.94, RMSEA = 0.048.

Dimension	Items	Mean	St. d.	Loadings	α	CR	AVE
Dialogue	“Brand” communicated with me to receive input on improving my service experience	3.09	1.37	0.79	0.83	0.84	0.56
	“Brand” was interested in communicating with me about how to design and deliver a high-quality service experience			0.85			
	“Brand” used multiple communication channels to encourage greater exchange of ideas with me about their services			0.71			
Access	I had an active dialogue with “Brand” on how to add value to their services	3.84	1.46	0.63	0.85	0.85	0.59
	“Brand” let me decide how I could receive their service offering			0.79			
	I had many options to choose from regarding how to receive “Brand’s” offering			0.78			
	It was easy for me to receive “Brand’s” offerings when, where, and how I wanted			0.71			
Risk assessment	“Brand” let me decide how they should send or communicate their offerings to me	2.94	1.45	0.78	0.92	0.92	0.74
	“Brand” provided me with comprehensive information pertaining to how they assessed benefits and risks for their services			0.84			
	I received comprehensive information pertaining to the benefits and risks of “Brand’s” services			0.88			
Transparency	“Brand” fully informed me about benefits and risks stemming from using “Brand”	4.91	1.26	0.86	0.83	0.83	0.55
	“Brand” informed me thoroughly about how they assessed benefits and risks for their services			0.86			
	“Brand” treated me as an equal partner			0.71			
	“Brand” behaved accountably toward me			0.82			
	“Brand” fully disclosed information about their activities/offerings and why they recommended them			0.68			
Sensory	“Brand” answered openly to all my questions	3.39	1.68	0.75	0.94	0.94	0.84
	“Brand” makes a strong impression on my senses			0.88			
	Being a customer of the “Brand” gives me interesting sensory experiences			0.95			
Affective	The “Brand” appeals strongly to my senses	2.90	1.47	0.93	0.88	0.88	0.72
	“Brand” induces my feelings			0.84			
	I have strong emotions for “Brand”			0.86			
Cognitive	“Brand” often strongly engages me emotionally	2.61	1.29	0.84	0.84	0.84	0.64
	I engage in a lot of thinking as a customer of “Brand”			0.77			
	Being a customer of “Brand” challenges my thinking and problem solving			0.87			
Behavioral	“Brand” often challenges my way of thinking	3.04	1.35	0.77	0.76	0.76	0.52
	I often engage in action and behavior when I’m in contact with “Brand”			0.74			
	As a customer of “Brand” I am rarely passive			0.67			
Relational	“Brand” activates me physically	3.19	1.34	0.75	0.78	0.80	0.57
	As customer of “Brand” I feel like I am part of a community			0.82			
	In a way, I feel like I am part of the “Brand” family			0.84			
Satisfaction	As a customer of “Brand” I never feel being left alone	5.18	1.40	0.58	0.93	0.93	0.81
	I am satisfied with “Brand”			0.90			
	Being a customer of “Brand” is a good choice for me			0.93			
	“Brand” lives up to my expectations			0.87			

Table 1). In addition, the last part of the item (“and why they recommended them”) was inspired by item 17, which was used by Rawlins (2008; Table 1). The fourth item we included, “Brand behaved accountably to me,” was based on item 16 in Rawlins (2008; Table 1). Finally, we developed a fifth item, “I experienced ‘Brand’ as transparent,” to capture the construct’s overall meaning. We adapted “Brand” to the four different services studied. In the hotel version of the questionnaire, an example of a statement was “The hotel treated me as an equal partner.” In the bank version of the questionnaire, the same statement was “The bank treated me as an equal partner,” etc. An introductory text sensitized the informant to consider a particular hotel, bank, etc. when responding, as described in the first part of the Method section.

The other variables used in the current study were based on previously validated measures. The sensory, affective, cognitive, and behavioral dimensions of

a brand experience were based on the work of Brakus et al. (2009), and the relational dimension was based on Nysveen et al. (2013). We further measured brand satisfaction with three items used in a prior study that have linked brand experience to brand satisfaction (Nysveen et al., 2013). All items were measured on a seven-point Likert scale to indicate respondents’ level of agreement with each item’s statement. Table 2 shows the factor loadings for all items when analyzed as first-order factors, all of which were significant at the 1% level.

Consistent with Brakus et al. (2009), we considered brand experience to be a second-order construct, but we extended the dimensions of the second-order construct with all five dimensions mentioned above. Confirmatory factor analysis (Amos 26) of the measurement model showed good fit ($\chi^2/d.f. = 2.59$, CFI = 0.93, RMSEA = 0.052); however, one factor loading for the transparency dimension (0.51) and one loading for the relational brand experience

Table 3. CR, AVE, maximum shared variance (MSV), correlations, and square root of AVE (along the diagonal).

	CR	AVE	MSV	1	2	3	4	5	6
Brand exp str	0.80	0.47	0.13	0.68					
Dialogue	0.84	0.56	0.23	0.27	0.75				
Access	0.85	0.59	0.25	0.18	0.48	0.77			
Risk assessment	0.92	0.74	0.25	0.15	0.43	0.50	0.86		
Transparency	0.83	0.55	0.47	0.37	0.28	0.41	0.30	0.74	
Satisfaction	0.93	0.81	0.47	0.34	0.25	0.34	0.12	0.69	0.90

The square root of AVE along the diagonal.

dimension (0.58) obtained somewhat low standardized values. We excluded one item for the transparency dimension, which increased the value of the average variance extracted (AVE) on the transparency dimension from 0.49 to 0.55 (see Table 3). This value exceeds the 0.5 threshold recommended by Hair et al. (2010). The adjustments also improved the measurement model's fit ($\Delta\chi^2 = 81.5$, d.f. = 3); thus, the refined measurement model with brand experience as a second-order construct obtained a good fit ($\chi^2/\text{d.f.} = 2.59$, CFI = 0.94, RMSEA = 0.052). The AVE for brand experience was still slightly below 0.5, but since the construct's CR was as high as 0.8 and the construct was a second-order construct based on well-tested first-order dimensions and items (Brakus et al., 2009), we decided to retain brand experience as a second-order construct in the further analyses.

According to Fornell and Larcker (1981), discriminant validity is achieved if the square root of the AVE is higher for each construct than the correlation between the constructs. We found that the correlations between all variables were smaller than the square root of the AVE for the related constructs (Table 3), indicating that Fornell and Larcker's criteria for discriminant validity were met. Finally, Table 3 also shows that the maximum shared variance was lower than the AVE for all constructs, meeting the discriminant validity criterion suggested by Hair et al. (2010). We also tested for common method bias by applying the principles suggested by Podsakoff et al. (2003). The single factor explaining most of the variance in the data accounted for 25.1% of the variance (Harman test), thus indicating that common method bias was not a major problem in the current study.

Results

Since our constructs are measured using reflective items, and since we rely on a common factor model, theoretical hypothesis development and consecutive model testing, a covariance-based approach to structural equation modeling (SEM) is recommended (Sarstedt et al., 2016). Thus, to test the hypotheses

we used a full model of all potential paths between the DART elements and brand experience strength applying SEM in Amos 26. The structural model showed acceptable fit ($\chi^2/\text{d.f.} = 2.33$, CFI = 0.95, RMSEA = 0.047). Table 4 shows the results of this analysis along with a model fit summary.

We found that dialogue has a positive influence on brand experience strength, which supports Hypothesis 1. Regarding Hypothesis 2, we found a significant positive effect from access on brand experience strength. For Hypothesis 3, the effect of risk assessment on brand experience strength was also significant, though it was negative. Hence, hypotheses 2 and 3 were supported, but with positive and negative influences, respectively. The results further show that transparency significantly positively influences brand experience strength. Hence, we also found support for Hypothesis 4. The results show strong support for the proposed positive influence of brand experience strength on brand satisfaction. Thus, Hypothesis 5 was supported.

To further investigate the robustness of the model, we tested the model using multi-group analysis for hedonic versus utilitarian services. Hotels and restaurants have been categorized as hedonic services (e.g. Ladhari et al., 2017), whereas banking has been categorized as a utilitarian service (e.g. Hellén & Sääksjärvi, 2011; Ladhari et al., 2017). Although a mobile operator provides access to both utilitarian and hedonic services, the choice of a mobile operator is influenced by service quality, price, and brand image (Rahman et al., 2011), which can be described as predominantly functional criteria. Contemporary mobile operators mainly offer customers data services that provide access to both utilitarian and hedonic services; however, such data services themselves are probably best categorized as utilitarian. Hence, we categorized hotels and restaurants as hedonic services, and banks and mobile operators as utilitarian services. The multi-group model showed acceptable fit ($\chi^2/\text{d.f.} = 1.86$, CFI = 0.93, RMSEA = 0.038). The results are summarized in Table 4, which first shows that the model

Table 4. Results, explained variance (R^2), standardized coefficients, $**p < .01$, $*p < .05$, $\dagger p < .10$.

Relationships	Effects all four services	Effects <i>utilitarian</i> services (bank, mobile operator)	Effects <i>hedonic</i> services (hotel, restaurant)	Test of service moderation ($\Delta\chi^2$, d.f. = 1)
Dialogue → Brand experience strength	0.10*	0.17**	0.03	1.22
Access → Brand experience strength	0.13**	0.13	0.13†	0.18
Risk assessment → Brand experience strength	-0.21**	-0.16†	-0.14*	0.20
Transparency → Brand experience strength	0.75** (62.8)	0.79** (71.2)	0.73** (61.2)	1.67
Brand experience strength → Satisfaction	0.89** (79.0)	0.77** (59.2)	0.95** (90.4)	0.01
Fit	$\chi^2/d.f.=2.33$, CFI=0.95, RMSEA=0.047		$\chi^2/d.f.=1.86$, CFI=0.93, RMSEA=0.038	

Table 5. Testing for indirect effects of the four DART elements through brand experiences on brand satisfaction by use of Preacher and Hayes (2008) procedure with AMOS 26. Standardized effects based on 5000 bootstrap samples. All service categories. $**p < .01$, $*p < .05$, $\dagger p < .10$.

Effects of/on	Direct on brand experience strength	Direct on satisfaction	Indirect effect through brand experience strength	Mediation moderated by service categories
Dialogue	0.03	0.07†	0.01	-0.06
Access	0.09	0.09†	0.02	-0.02
Risk assessment	-0.23**	-0.10*	-0.06**	0.10*
Transparency	0.45**	0.54**	0.13**	-0.22*

explains a large part of the variance in brand experience strength and brand satisfaction across both service categories even if it seems that brand experience strength is more important in explaining satisfaction with hedonic services than utilitarian services. Furthermore, when testing the fully constrained model of service category invariance versus the unconstrained model, we found that the model seemed invariant across categories ($\Delta\chi^2 = 5.80$, d.f. = 5). Additionally, when testing the significance of the differences between the constrained and unconstrained models individually for each structural weight, Table 4 shows that none of the differences between structural weights across service categories are significant. Therefore, we conclude that the model is stable and invariant across service categories.

However, since brand experience strength is a second-order construct, the five structural weights between the brand experience strength dimensions and the second-order construct can also be tested for invariance using multi-group analysis. In this case, the analysis demonstrates that the structural weight between cognitive experience strength and the second-order construct differed between service categories ($\Delta\chi^2 = 8.95$, d.f. = 1, $p < 0.01$). Cognitive experience strength is a significant component of brand experience strength for both hedonic and utilitarian services, but it contributes

negatively to the brand experience strength of hedonic services and positively to the brand experience strength of utilitarian services.

According to Holmbeck (1997) and Baron and Kenny (1986), full mediation implies that no significant effects and no significant improvement in fit are found when compared with the partially mediated model, adding the direct effects of dialogue, access, risk assessment, and transparency on brand satisfaction. The structural model that included the direct effects of dialogue, access, risk assessment, and transparency on satisfaction showed a significantly better fit ($\Delta\chi^2 = 61.4$, d.f. = 4) (the fit of the direct and indirect effects model was $\chi^2/d.f. = 2.22$, CFI = 0.95, RMSEA = 0.047), and the direct effects of risk assessment ($\beta = -0.10$, $p < 0.05$) and transparency ($\beta = 0.54$, $p < 0.01$) on satisfaction were significant. The direct effects of dialogue ($\beta = 0.07$, $p < 0.10$) and access ($\beta = 0.09$, $p < 0.10$), on the other hand, were insignificant. Finally, the effects of brand experience strength on satisfaction remained significant ($\beta = 0.26$, $p < 0.019$). Thus, this suggests that the effects of the DART elements on brand satisfaction are partially mediated by brand experience strength, but that the mediation depends on the elements of DART under consideration.

Baron and Kenny's (1986) approach to testing for mediation has faced some criticism. Zhao et al. (2010) argued that the procedure described by Preacher and Hayes (2008), which tests the indirect effects of the individual paths, should be preferred. Therefore, we extended the analysis by including Preacher and Hayes (2008) procedure, which is reported in Table 5 for the indirect influences on satisfaction.

The estimates in Table 5 are based on 5,000 bootstrap re-samples. The product of the coefficient approach using the bootstrapping re-sampling method was used to test the significance of the indirect effects (Picón et al., 2014; Preacher & Hayes, 2008). The analyses revealed that dialogue and access have neither significant direct effects on satisfaction nor any significant effects on satisfaction mediated by brand experience strength. However, risk assessment and transparency have both significant direct effects ($\beta = -0.10$, $p < 0.05$, and $\beta_{a*b} = 0.54$, $p < 0.01$) on satisfaction and significant mediated effects ($\beta = -0.06$, $p < 0.01$, and $\beta_{a*b} = 0.13$, $p < 0.01$) through brand experience strength. Both the direct and mediated effects of risk assessment are negative, while both the direct and mediated effects of transparency are positive. Thus, the effects of co-creation on satisfaction are partially mediated through brand experience strength.

Discussion

A two-dimensional framework with the four elements of co-creation and the five dimensions of brand experience strength seems fruitful in guiding activities initiated by a brand on for example social engagement platforms (Table 6). This framework can be used to strategically combine different social media channels to stimulate particular dimensions of brand experience strength with specific DART elements on one channel and different dimensions and elements on another while, simultaneously, managing the integrated experience. On social networking sites, the vividness of brand fan pages, which represents how extensively different senses are stimulated (low (pictorial), medium (event), and high (video)), positively influences the number of likes accrued (Vries et al., 2012). Davis et al. (2014) discussed functional, emotional, social, and relational elements as core drivers of brand consumption in social media. Overall, these studies illustrate the potential value of stimulating the sensory, affective, cognitive, behavioral, and relational brand experience strength dimensions through the DART elements over social media platforms. Building on Table 6, and using environmental transparency (T) as an example, we suggest that brand managers can influence *sensory experience* by interacting transparently with their customers about

Table 6. Managerial guidelines. Framework for using co-creation elements to strengthen dimensions of brand experience with examples of strategic combinations.

	Purpose	Sensory	Affective	Cognitive	Behavioral	Social
Dialogue	Stimulate high engagement interactions	Active use of media richness/ media characteristics (e.g. augmented and/or virtual reality)	Differentiated <i>interaction types</i> on social media (e.g. personal across channels)	Differentiated social media <i>channels</i> (e.g. video-sharing product channels)	Differentiated social media <i>channels</i> (e.g. activity-oriented social media platforms)	Differentiated social media <i>channels</i> (e.g. social media fan groups)
Access	Stimulate high engagement interactions	Access to elaborate information in various formats	Hedonic response formats to consumers' information search (e.g. atmosphere and pleasure)	Consumer access to strategic activities (e.g. innovation platform)	Open APIs that stimulate third party activities	Active brand group formation around strategic activities (e.g. shared missions on innovation platforms)
Risk assessment	Reduce the need for high-engagement interactions	Risk-assuring information given in simple formats	High-level risk-reducing services supporting trust (e.g. influencer networks)	Simple risk assessment tools on "My Brand" websites and in personal branded apps	Risk-assuring communication in low-engagement platforms (e.g. traditional media)	Sharing risk-assuring testimonies from other consumers
Transparency	Stimulate high-engagement interactions	Reveal open processes in various formats (e.g. virtual touring)	Active response to controversy in social media	Easy searchable archives of process information and experiences	Enable platform-type affordances on open processes (observed, liked, shared, followed)	Experience <i>sharing</i> across websites, apps, and different social media channels

their environmental footprints through rich and vivid media. To influence *affective experience*, brands can openly reveal their social responsibility policy, illustrating how they care for both people and nature. Brand managers can also exercise transparency by providing tools that calculate their products' environmental footprints throughout their life cycles, engaging customers intellectually and influencing their *cognitive experience*. Brand managers can also exercise transparency regarding ideas for new products and they can incorporate customers into sustainability discussions about such ideas, influencing customers' *behavioral experience*. Finally, brands can engage customers socially, for example by organizing a customer community in which customers can openly discuss the environmental profile of a brand's products, and through that, influence customers' *relational experience*. We anticipate that, by applying [Table 6](#) as illustrated for environmental transparency (T) above also for dialogue (D), access (A), and risk assessment (R), [Table 6](#) can help brand managers to develop new ways to use the DART elements of co-creation (individually or in an integrated manner) to influence brand experience and brand satisfaction.

We have demonstrated how the risk assessment and transparency elements affect brand satisfaction both directly and indirectly. Therefore, managers should particularly focus on managing these two elements of our two-dimensional framework ([Table 6](#)). Based on this framework, social media channels may be considered well suited to ensure continued investment in interactions about transparency, but this is also challenging because the path that interactions about a transparency issue takes from consumers' engagement is not easily controlled over social media (DiStaso & Bortree, 2012). Risk assessment is even more complex concerning the applicability of different engagement platforms. In this context, brands may have to complement their presence on engagement platforms for risk assessment, such as rating and comparison shopping sites, by offering their own engagement platforms within the boundaries of the brand website or branded apps. Examples include tools to easily personalize offerings, the design of complementary services around the offerings, and tools for reducing the cognitive efforts of consumers in designing and choosing between these offerings.

Homburg et al. (2017, p. 377) stated that we are facing "increasingly transparent, empowered, and collaborative consumer markets," and that customer experience management is a promising avenue through which to appeal to such markets. The two-dimensional framework

suggested by our findings ([Table 6](#)) offers guidance for this management.

Theoretical contributions

The research model we tested in this study has, as far as we know, not been tested empirically in prior research. The results show that the *DART elements* influence brand experience strength ([Table 4](#)) and brand satisfaction ([Table 5](#)). This finding aligns with the discussion of other researchers who have associated co-creation with brand experience (Alves et al., 2016; Galvagno & Dalli, 2014; Prahalad & Ramaswamy, 2004b) and thereby indicates that co-creation is an important antecedent for brand experience strength and brand satisfaction. While Nysveen and Pedersen (2014) studied the influences of co-creation as a general construct on brand experience dimensions and brand satisfaction, our results constitute a unique contribution that advances the existing research by empirically explaining each DART element's influences on brand experience strength and brand satisfaction. Interestingly, the influences of risk assessment on brand experience strength and brand satisfaction were negative, while the other three elements exerted positive influences. Risk assessment (R) refers to the level to which customers are fully informed and receive comprehensive information about the benefits and risks associated with using a brand. The negative influence we found in this regard may indicate that risk assessment is, even when comprehensive information is provided, complex and difficult to undertake. Comprehensive information may give consumers a feeling of information overload, and the risk assessment activity may become cognitively overwhelming for them. Hence, tools may be needed that can help consumers assess risk more easily and quickly. Also, personalized risk information can make risk assessment more relevant and "to the point" for individual consumers. Risk perception is typically higher for services than physical products (Morrison & Crane, 2007). We examined four services in the empirical study. This may imply that risk assessment is perceived as relatively complex and uncertain. Hence, tools that can effectively help customers (assess risk more clearly, quickly, and relevantly (in a more personalized manner)) may be particularly important for services. The negative influence of risk assessment is interesting in that it indicates that the relationship between co-creation and brand experience strength is more complex than previous research suggests.

The results further revealed positive influences of brand experience strength on brand satisfaction. These results confirm findings in prior research on the

relevance of brand experience strength as an antecedent to brand satisfaction (Brakus et al., 2009; Kim et al., 2015; Şahin et al., 2013). However, the *mediation* analysis reported in Table 5 also revealed that brand experience strength mediates some of the influences (partial mediation) of risk assessment and transparency on brand satisfaction. These results point to the significance of brand experience strength for building brand satisfaction through co-creation. The mediation analyses confirm the partial mediation of brand experience strength revealed by Nysveen and Pedersen (2014). However, the results also advance existing research by identifying in greater detail which DART dimensions influence brand satisfaction through brand experience strength.

We also tested the model specifically for *utilitarian services and hedonic services* (Table 4). Although we found some differences in this regard, none were significant. This finding aligns with the work of Batra and Ahtola (1990, p. 161), who claimed that hedonic and utilitarian motives for consumption “need not be (and usually are not) mutually exclusive.” Although restaurants and hotels have been associated with hedonic consumption (Ladhari et al., 2017), while banking and mobile operators can be considered mainly utilitarian, the results of our study support previous research findings that both hedonic and utilitarian values are relevant to restaurant settings (Ryu et al., 2010), mobile hotel booking (Ozturk et al., 2016), service recovery responses in hotel reservation settings (Park & Ha, 2016), and mobile banking (Jamshidi et al., 2018). The findings support the theoretical framework as a generic model that is valid across services that provide utilitarian and hedonic benefits, and contribute to resolving prior discussion on the co-creation differences between hedonic and utilitarian services (Blinda et al., 2019; Saarijärvi et al., 2013).

Managerial implications

In general, the results point to the importance of co-creation as an activity that can improve brand experience strength and brand satisfaction. Hence, brand managers should carefully foster co-creation activities with their customers carefully. The results also point more specifically to how co-creation can be nurtured fruitfully through the four DART *elements*. The positive influences of DAT revealed in this study indicate that brand managers should actively facilitate these three elements to strengthen brand experience and build brand satisfaction. The negative influence of risk assessment illustrates the complexity of co-creation for brand

managers. Possible solutions to this complexity may include attempting to simplify risk assessment and promoting clear, instantaneous support for customers seeking to assess risks. The fact that brand experience strength *mediates* some of the influences of risk assessment and transparency on brand satisfaction underlines the importance of stimulating brand experience strength through risk assessment and transparency. Hence, it is particularly important for brand managers to have customers’ sensory, affective, cognitive, behavioral and relational experiences in mind when developing and attending to the transparency and risk assessment elements. Finally, the results show that the influences of the DART elements on brand experience strength do not significantly differ between *utilitarian and hedonic services*. Hence, we suggest that managers foster the co-creation elements regardless of whether their brand offers utilitarian or hedonic services.

Limitations and future research

Wheeler et al. (2014) indicated that student-recruited sampling is similar to non-student-recruited sampling. We used 99 different students as interviewers to stimulate variance in the respondent recruitment process. These students recruited the respondents based on common instructions. Future studies may follow a similar approach with variance in the respondent recruitment process to reduce possible recruitment biases. Further, the students were informed that they could recruit anyone they liked. Such convenience sampling may imply sample biases. We recommend that future studies apply probability sampling to evaluate the possible sample biases in our study.

We compared the research model across hedonic versus utilitarian services. This categorization was based on descriptions of the four services from the existing literature. We did not measure the respondents’ perceptions of the hedonic versus utilitarian character of these services. We recommend that future studies include such measures to ensure a more valid empirical categorization (“manipulation”) of this dichotomy. Further, we found no differences between utilitarian and hedonic services in our study. Still, to facilitate a more targeted implementation of DART tactics among brand managers, we encourage research to explore other service categories for possible moderating influences on the relationships of their research models.

To explain the influences of co-creation on brand experience strength and brand satisfaction, we used an engagement perspective, with a special focus on “investment in specific brand interactions”

(Hollebeek, 2011b, p. 555) as the theoretical mechanism. Such an interactional approach to explain the influences of co-creation was also suggested by Ramaswamy and Ozcan (2018). We used this interactional approach as a theoretical mechanism to develop our hypotheses; however, we have not yet empirically studied how brand engagement and investment in brand interaction may mediate the four co-creation elements' influences on brand experience strength. We encourage future research to empirically test brand engagement as an additional mediating mechanism for the influences of the DART elements in order to conduct a stronger test of the role of (types of) brand engagement in the causal chain from the DART elements to brand experience strength. Such a test would, however, require systematic variation in the "investments in brand interactions" on both the brand and consumer sides, which would probably be controlled best using experimental research designs.

In the current study we focused on the temporal phase at which co-creation initiatives stimulate engagement, and thereby brand experiences and brand satisfaction. Other researchers have for example found influences of engagement on co-creation (Rather et al., 2019, 2022). The study by Rather et al. (2022) is particularly interesting, in that it identified mean differences between both engagement and experience constructs among first time tourists versus repeat tourists. According to their results, the cognitive dimension of both engagement and experience seems stronger for first time tourists than repeat tourists, while the opposite is true for the other dimensions of engagement and experience. Considering the relationships in our research model over time, we must probably accept a high degree of reciprocity in how these variables can influence each other. Hence, we encourage future research on factors that can influence the causal flow of the variables included in the research model investigated in this article.

The brand experience scale developed by Brakus et al. (2009) has contributed substantially to brand experience research. Measuring brand experience dimensions, Brakus et al. (2009) emphasized the strength of the brand experience dimensions rather than the valence of brand experience. In a commentary, Schmitt et al. (2015) claimed that strong experiences could be enough to influence satisfaction and loyalty. Gahler et al. (2019, p. 11) argued that "it can be difficult to act on" experience data that measure experience strength only. Furthermore, Gahler et al. (2019, p. 11) claimed that measures that do not capture experience valence may also be "less practicable" for predictions of satisfaction and loyalty. Although we commend the perspective proposed by Brakus et al.

(2009), our findings support the recommendations of Gahler et al. (2019), which can be used to guide experience research to be even more important and useful for managers in the future.

Overall, our study indicates that the causal chain from co-creation to brand satisfaction is more complex than previous research has suggested. Our research presents avenues through which to unravel and operationalize this complexity, and we hope this study can inspire future research in this area.

Acknowledgments

The authors thank this article's editor and two reviewers for providing constructive and insightful comments through several manuscript reviews.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Ove Oklevik  <http://orcid.org/0000-0002-7129-5737>

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Appendix

Co-creation articles in leading marketing journals.

Reference	Purpose	Methodology	Findings
Wieser et al. (2021), <i>Journal of Consumer Research</i>	To explore "How Brand Leaders and Consumers Co-Create Charismatic Authority in the Marketplace" (p. 1, in Title)	"In-depth, interpretive case study" of the leader of an Austrian shoe manufacturer.	The article illustrates how brand leaders staging of charismatic authority can be validated and/or challenged over time by consumers – fueled by entrainment resources as social media, marketplace sentiments, and brand manifestations – and finally lead to a manifest charismatic situation (where things have "leveled off" and "taken shape" (p. 15–16)).
Syam and Pazgal (2013), <i>Marketing Science</i>	To "model co-creation and to determine the optimal cooperative productive efforts of the firm and the consumer as well as pricing by the firm" (p. 805)	Economic modeling	Co-creation has positive influences on profit. When users connect with a lead user in the center (centralized externalities network) profit is higher than without user connections and also higher than with a decentralized network (both pattern and number of links in the network matters). For a monopolist in a centralized network, it is better to charge a single price than to price discriminate.
Ramaswamy and Ozcan (2016), <i>International Journal of Research in Marketing</i>	To "present an integrative framework of brand value co-creation with theoretical underpinnings in joint agencial experiential creation of brand value" (p. 93)	Conceptual. Theoretical model is developed. Nike, Starbucks and Apple used as illustrative examples.	The theoretical framework describes what they call the ecosystem of brand capabilities (the joint capabilities of individuals and enterprises). From this ecosystem the brand engagement platform emerges. Engagement platforms can be based on both brand relations and brand offerings. Brand engagement platforms can work as the interfaces of brand experience, and is supposed to influence brand value outcomes.
Kull and Heath (2016), <i>International Journal of Research in Marketing</i>	Explores branding implications of co-created social responsibility "in which the consumer, not the brand, chooses the charitable cause to which the brand will donate in response to the consumer's purchase" (p. 78).	Empirical. Three experiments.	When consumers can decide who the brand should donate to (co-creation in cause-related marketing), it strengthens the relationship between the consumer and the brand (brand attachment, brand attitude, and purchase intention). Consumer empowerment and consumer engagement mediate these effects (Consumer cause choice -> Consumer empowerment -> Consumer engagement -> Brand outcomes). Brand image is included as a boundary condition, indicating that cause-related marketing campaigns that are co-created with consumers can have negative influence for brands with a negative image.
Cohen-Vernik et al. (2019), <i>International Journal of Research in Marketing</i>	To "analyze competition between two downstream firms who sell products that are potentially co-created with an upstream supplier. The firms simultaneously decide on whether or not to participate in the co-creation process with the Supplier" (p. 66)	Modeling.	In the competition situation illustrated, "Co-creating firms can tap into the Supplier's expertise and resources in order to create a better product. On the other hand they run the risk that their innovative effort will spillover to their rivals via the Supplier." (p. 78). The model proposed "captures this trade-off by incorporating endogenous pricing and effort choices by the upstream supplier and the downstream firms." (p. 78). The model demonstrates several findings – among them that "channel members are making higher profit when they all co-create, as compared to the situation where there is no co-creation and the Supplier alone designs the product." (p. 78).

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Reference	Purpose	Methodology	Findings
Thompson and Malaviya (2013), <i>Journal of Marketing</i>	To explore “whether brands benefit from communicating to consumers who had not been involved in the co-creation process that a target ad was developed by a fellow consumer” (p. 33).	Empirical. Four studies (including pilot study) are reported. Experiments	The results show that disclosure of ad co-creation reduces ad and brand evaluation. A skepticism – identification model is proposed. Results indicate that factors that reduce skepticism (constrained cognitive resources for ad elaboration) and factors that increase identification with the ad co-creator (1. background information about the ad co-creator and 2.brand loyalty) contribute to more positive ad and brand evaluation.
Payne et al. (2008), <i>Journal of the Academy of Marketing Science</i>	“To develop a process-based conceptual framework for understanding and improving value co-creation within the context of S-D logic” (p. 83)	Conceptual/(Empirical). The conceptual model was reviewed and developed through field-based research (three workshops and individual interviews).	There are three main components in the conceptual model; 1.customer processes, 2.supplier processes, and 3.encounter processes. Supplier processes focus “co-creation and relationship experience design,” and how this develops over time through organizational learning. Customer processes includes “relationship experience” (cognition, emotion, behavior) and how this develops over time through customer learning. The encounter process refers to the reciprocal interaction between the customer and the organization through various types of encounters (which is illustrated in a life cycle (process) logic for a travel company)
Dong et al. (2008), <i>Journal of the Academy of Marketing Science</i>	To study the consequences of “customer participation in service recovery” on satisfaction with service recovery and future co-creation behavior.	One role playing experiment.	The results indicate positive influences of “customer participation in service recovery” in a self-service technology context on 1.satisfaction with service recovery and 2.role clarity-, perceived value-, and intention to co-create value in the future.
Edvardsson et al. (2011), <i>Journal of the Academy of Marketing Science</i>	“... to expand understanding of service exchange and value-co-creation by complementing these central aspects of S-D logic with key concepts from social construction theories” (p. 327).	Conceptual	Central ideas are that value co-creation follows <i>social structures</i> and happens within <i>social systems</i> where customers and companies “adopt certain <i>social positions and roles</i> as they <i>interact and reproduce social structures</i> ” (p. 330). The study propose that these concepts are critical for creating the social reality for actors as they jointly co-create value.
Roggeveen et al. (2012), <i>Journal of the Academy of Marketing Science</i>	To identify “specific situations in which co-creation is and is not useful” (p. 771). Focus on co-creation of service recovery situations with “external locus of responsibility for delay”(p. 772)	Empirical. Four studies are reported. Experiments.	Co-creation is found to improve both satisfaction and purchase intention for severe (but not for less severe) service delays. Equity mediates this effect. Further, co-creation of service recovery is found to be effective only when viewed positively by customers. Finally, not meeting customers’ requests (vs meeting customers’ requests) leads to lower customer evaluations. “... exceeding customers’ requests does not improve evaluations beyond those achieved by simply meeting the request” (p. 786).
Grönroos and Voima (2013), <i>Journal of the Academy of Marketing Science</i>	To “analyze value creation in service by analytically defining value co-creation and value creation with a focus on the roles of the customer and the firm, then analyzing co-creation as a function of their interaction” (p. 134).	Conceptual	Value creation is divided into 1.provider sphere, 2.joint sphere, and 3.customer sphere. Main takeaways are that 1)the customer is the value creator, 2)the firm is a facilitator for customer value, the firm can co-create value jointly with the customers, the firm can influence value creation among its customers directly and actively, 3)“Value is accumulating through the customer’s value-creating process” (p. 145), and 4)“Value is always uniquely and both experientially and contextually perceived and determined by the customer” (p. 145).

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Reference	Purpose	Methodology	Findings
Heidenreich et al. (2015), <i>Journal of the Academy of Marketing Science</i>	To shed "light on potential risks of co-created services" (p. 279). Main focus is on co-creation in service failure situations.	Empirical. Four studies are reported. Experiments	Results indicate that, in a service failure situation, high co-creation level in initial service delivery increase disconfirmation and reduce customer satisfaction. Also, the results indicate that a good strategy is to keep the level of co-creation constant across the initial service delivery and the service recovery activities. Co-creation in initial service delivery seems to enhance internal failure attribution and perceived guilt. Involving customers in co-creation in the service recovery activities may alleviate guilt perception and restore customers' emotional equilibrium.
Ranjan and Read (2016), <i>Journal of the Academy of Marketing Science</i>	To explore the underlying elements of value co-creation (VCC) and how they work. To develop empirical measures "faithful to the theoretical concept of VCC" (p. 290)	Literature review. Two empirical studies.	A review of existing literature (n = 149 articles) and a categorization of them along six elements of VCC are presented. Development and validation of a VCC measurement index. Knowledge, Equity and Interaction are elements associated with Co-production while Experience, Personalization, and Relationship are elements associated with Value-in-use. Co-production and Value-in-use are both positively associated with Value co-creation. Value co-creation is found to be positively related to Satisfaction.
Malshe and Friend (2018), <i>Journal of the Academy of Marketing Science</i>	To explore non-receptivity to VCC initiatives in a B2B context. "What are the underlying reasons for customer non-receptivity?" (p. 896), and what are useful strategies to overcome non-receptivity to VCC initiatives?	Qualitative study. "114 in-depth interviews across 57 business-to-business evaluations"	Three types of customer non-receptivity are identified; "apathy, ambivalence, and annoyance" (p. 895). Further, six strategies are suggested to reduce non-receptivity among B2B customers; "intrinsic initiative, inspiration and implementation, complexity absorption, value alignment, credibility building, and objective centrality" (p. 895).
Keeling et al. (2021), <i>Journal of the Academy of Marketing Science</i>	To "provide a detailed examination of the role of DE as a source of value creation or destruction over time for complex services" (p. 237) DE: Dialogic Engagement.	Longitudinal, ethnographic study. Health care services (13 specialist, 24 patients). Overall, 61 consultations were observed.	Three dialogic engagement principles are used as the theoretical lens; Dialogic democracy, Intellectual honesty, and Affirmation. Mechanisms for achieving these principles (co-creation mechanisms) are identified, and mechanisms that can destroy these principles (co-destruction mechanisms) are identified. Further, the study illustrates processes for how these mechanisms can develop over time and lead to various outcomes.

Based on Title search in Google Scholar, period from 2005–2021. Search terms were "Co-creation," "Co-create," and "Co-created." Limited to ABS 4* and ABS 4 marketing and consumer research journals (June 10, 2022).