

Exploring customer engagement in the product vs. service context

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Abstract

Though customer engagement (CE) is heralded as a strategic organizational imperative, empirically derived insight into its nomological network remains sparse. Extending existing research, we therefore test service-dominant logic-informed CE vis-à-vis its key antecedents of knowledge sharing and learning, and its consequences of customer cocreation and relationship quality. We also envisage the existence of CE-based differences across physical goods- versus service contexts, leading us to include the nature of the offering (good vs. service) as a moderating factor in our model, making a novel contribution. To test the model, a survey was conducted in the tangible sports goods (retail) and -club (i.e. service) contexts. The findings substantiate a positive effect of customer learning and knowledge sharing on CE, thus empirically validating conceptual literature-based claims. In addition, CE was found to exert a favorable effect on customer cocreation and relationship quality. Moreover, the results confirm our hypothesized moderating effect by revealing the framework's stronger associations for service- (vs. product-based) CE. We conclude by discussing key implications that arise from our analyses.

Keywords: Customer engagement, customer cocreation, relationship quality, customer learning, customer knowledge sharing, goods/services, sports.

1. Introduction

In recent years, customer engagement (CE), which refers to a customer's resource investment in his/her brand interactions (Hollebeek, Srivastava, & Chen, 2019), has been heralded as an important value-creating imperative for contemporary organizations (Chang, Huang, Wang, & Lee, 2019; Chen & Chen, 2017). For example, CE has been shown to contribute to sales increases, greater share-of-wallet, reputational advancement, and superior competitive advantage and profitability (Brodie, Hollebeek, Jurić, & Ilić, 2011; Prentice, Wang, & Loureiro, 2019; Verhoef, Reinartz, & Krafft, 2010). CE is also shown to insulate firms against customer attrition (Chathoth, Ungson, Harrington, & Chan, 2016), thus reducing customer churn (Itani, El Haddad, & Kalra, 2020).

While a number of studies have advanced insight into CE's nomological network (e.g. Brodie et al., 2011; Kumar, Rajan, Gupta, & Dalla Pozza, 2019; Van Doorn et al., 2010), empirical testing and validation of many of CE's proposed antecedents and consequences lags behind (Pansari & Kumar, 2017), particularly from an S-D logic perspective (Vargo & Lusch, 2016). That is, though such scholars as Kumar and Pansari (2016) indeed offer empirical insight into CE's drivers and outcomes, other CE-based nomological networks remain subject to empirical testing. For example, while Hollebeek et al. (2019) and Hollebeek (2019) propose specific S-D logic-related concepts as key CE antecedents (e.g., customer learning/knowledge sharing), their purely conceptual analyses imply the untested status of their claims. We therefore extend existing research by empirically exploring a model derived from Hollebeek et al.'s (2019) and Hollebeek's (2019) S-D logic-informed frameworks. Specifically, we explore customer knowledge sharing and learning as important CE antecedents, and customer cocreation and relationship quality as key CE outcomes.

In addition, we envisage the existence of different dynamics in tangible good- vs. service-based contexts. While CE research has centered on the service context (e.g. Kumar et al., 2019), much less remains known regarding its dynamics in physical, tangible goods contexts. Given its core interactive nature (e.g., Brodie et al., 2011; Hollebeek et al., 2014), we anticipate that CE may pan out differently for highly interactive services (vs. tangible goods), thus adding important literature-based acumen. Specifically, we explore CE's nomological network in the sports context, comprising service-based (i.e. sports clubs) and physical goods-based (i.e. sports stores) elements. As such, we also respond to Kumar et al.'s (2019) call for further exploration of non-profit-based CE (Mitchell & Clark, 2019), as implemented here in the sports goods/service context.

This study makes the following contributions. First, we develop a model to empirically test customer knowledge sharing and learning as key CE antecedents. By offering empirical, quantitative testing of Hollebeek et al.'s (2019) model, we thus advance insight into CE by verifying these authors' purely theoretical assertions (Jasti & Kodali, 2014).

Second and relatedly, we test customer cocreation and relationship quality as important CE consequences. While several authors explore the association of CE and cocreation either conceptually or qualitatively (e.g. Chathoth et al., 2016), quantitative testing of this association remains more nebulous to date. That is, while some authors have started to explore this association (e.g. Rather, Hollebeek, & Islam, 2019), they have tended to include cocreation as the dependent variable, rather than exploring its subsequent effects, as undertaken here. We therefore add to the body of existing research by exploring relationship quality as a cocreation consequence (Brodie, Ilic, Juric, & Hollebeek, 2013; Ulaga & Eggert, 2006).

Third, we offer a more granular understanding of the framework by deploying the nature of the offering (i.e. tangible goods vs. services) as a key moderating factor in the proposed associations. That is, while CE is oft-explored in the service context, as outlined (e.g. Kumar et al., 2019), insight into its dynamics and outcomes for physical, tangible goods lags behind, particularly when compared to services. This distinction is important, given the aforementioned expected differing CE dynamics for interactive services vs. less interactive physical goods. To elucidate this issue, we explore the proposed framework in the sports-related service (i.e. sports clubs) and physical goods (i.e. sports store) context, thus advancing insight into CE across offerings of varying levels of (i.e. high/low) tangibility (Pansari & Kumar, 2017).

The remainder of this paper is organized as follows. In the next section, we review important CE literature, followed by the development of the conceptual framework and research hypotheses. Next, we outline the methodology adopted to explore the hypotheses, followed by a discussion of the main findings. We conclude by outlining important theoretical and managerial implications that arise from this work, and outlining its limitations and opportunities for further research.

2. Literature Review: Customer Engagement

In this section, we review important CE literature, as attained through Google Scholar and Scopus searches. CE research has significantly evolved in the last decade (Finsterwalder, 2018; Harrigan, Evers, Miles, & Daly, 2017). Here, S-D logic-informed CE refers to “a customer’s investment of cognitive, emotional, behavioral and social resources during, or related to, specific brand interactions” (Hollebeek et al., 2019, p. 171; Kumar et al., 2019), where *operant* resource investments include thought-, feeling-, and activity-based resources, while *operand* resource investments denote those of equipment (Vargo & Lusch, 2008, 2016).

There is, however, no consensus regarding CE's conceptualization, as illustrated by the myriad proposed definitions. For example, Brodie et al. (2011) denote S-D logic-informed CE as "a psychological state, which occurs by virtue of interactive customer experiences with a focal agent/object within specific service relationships" (p. 258). Bowden (2009) defines CE as "a psychological process that models the underlying mechanisms by which customer loyalty forms for new customers of a service brand, as well as the mechanisms by which loyalty may be maintained for repeat purchase customers of a service brand" (p. 65). CE's *service*-centricity, as discussed in the literature (e.g. Kumar et al., 2019), emanates from its core *interactive* nature, as outlined. Therefore, S-D logic has been deployed as an important theoretical frame for CE (Hollebeek et al., 2019; Kumar et al., 2019; Brodie et al., 2011). However, consequently, insight into CE for more *tangible* goods lags behind, giving rise to our exploration of CE-based differences across tangible goods/services.

Despite CE's definitional dissent, several CE-based commonalities also exist, as agreed by the majority of authors. First, CE is an *interactive* concept that transpires during customer/brand or firm interactions (Harrigan, Evers, Miles, & Daly, 2018). In these interactions, CE reflects the customer's resource investments. Based on their investment level, widely varying outcomes are observed. For example, while highly-engaged customers put in substantive thought, time, and effort in their brand interactions, low (also referred to as un- or disengaged) customers exhibit only limited willingness to invest in their interactions, thus affecting such dependent variables as customer loyalty or self-brand connection (Harrigan et al., 2018; Hollebeek et al., 2014). In S-D logic, *interaction* is defined as "mutual or reciprocal action or influence" (Vargo & Lusch, 2016, p. 9). By virtue of its interactive nature, CE has been mainly explored in services (vs. tangible goods) to date (Islam, Hollebeek, Rahman, Khan, & Rasool, 2019).

Second, CE is typically viewed as a multi-dimensional concept that comprises cognitive, emotional, and behavioral facets (Baldus, Voorhees, & Calantone, 2015; Calder, Malthouse, & Schaedel, 2009; Vivek, Beatty, & Morgan, 2012). For example, Hollebeek, Glynn, and Brodie (2014, p. 154) define cognitive engagement, which they label *cognitive processing* as a customer's level of brand-related thought and mental elaboration during interactions. Emotional engagement (labeled *affection*) denotes the customer's level of positive brand-related sentiment, while behavioral engagement (*activation*) refers to the customer's level of energy, effort, and time spent on their brand interactions. Some authors extend the model to include a social CE dimension (Vivek, Beatty, Dalela, & Morgan, 2014; Brodie et al., 2013), which manifests through customers' desire for social interaction or bonding in their interactions. Moreover, other scholars distinguish between CE's direct (i.e. purchase) vs. indirect contributions (e.g. positive word-of-mouth, helping behaviors; Kumar & Pansari, 2016).

Third, CE represents a highly context-specific variable. Accordingly, Hollebeek et al. (2019, p. 173) postulate CE to differ "across contextual contingencies." CE can manifest with a negative, neutral, or positive valence, which may display at differing intensity levels that can also vary across contexts. Specifically, CE reflects the individual's unique context, including his/her temporal, relational, spatial, individual, and miscellaneous situational factors (Chandler & Lusch, 2015).

3. Conceptual Framework and Hypothesis Development

We next develop a nomological network-based conceptual framework of CE that outlines its major antecedents and consequences based on Hollebeek et al.'s (2019) and Hollebeek's (2019) S-D logic-informed analyses. Correspondingly, we identify the CE antecedents of customer

knowledge sharing and learning, and delineate the CE consequences of customer co-creation and relationship quality, as discussed further below and summarized in Figure 1. Justifying our selected CE antecedents/consequences, we also developed Table 1, which provides an overview of existing conceptual/empirical CE studies and their respective proposed nomological networks. Analysis of Table 1 reveals that while our chosen CE antecedents/consequences have been proposed in prior conceptual research, their *empirical* investigation lags behind, thus warranting our quantitative research approach (for further detail, refer section 4).

[Insert Table 1 around here]

3.1. CE Antecedents

Customer Learning According to Hollebeek et al.'s (2019) S-D logic-informed analyses, customer learning acts as an important CE antecedent. Learning is an iterative process that reflects an individual's growing mental and/or physical skills to achieve a particular objective (Maurer, 2002). Customer learning denotes the acquisition of new product/service knowledge or insight, and may extend to include behavioral modification based on this knowledge or insight gained (Hollebeek et al., 2019). Customers' improved brand-related knowledge or skills are relevant in both tangible (e.g. knowing which sports equipment to purchase) and intangible sports contexts (e.g. understanding the nature of a particular sports game), which may vary across customers (Hibbert, Winklhofer, & Temerak, 2012).

CE's motivational nature (Hollebeek et al., 2019) implies customers' desire to learn about particular products/brands (Van Schaik, Martin, & Vallance, 2012). Therefore, the greater customers' brand-related knowledge, the more likely they are to enjoy interacting with the brand (e.g. by playing sports for longer periods of time), raising their engagement. Therefore,

organizations are encouraged to incorporate offering-related customer learning opportunities to facilitate CE's development (Brodie et al., 2013). We posit:

H1. Customer learning is positively associated with CE in the (a) service, and (b) tangible goods context.

[Insert Figure 1 around here]

Customer Knowledge Sharing refers to a customer's feedback/suggestions to the organization and other customers in accordance with their experience of using the service (Kumar & Pansari, 2016). That is, customers may offer their brand-related knowledge to others to create value for the recipients, themselves, and/or both (Ho & Ganesan, 2013; Kumar & Pansari, 2016; Clark, Lages, & Hollebeek, 2020). Given customers' value-creating aim inherent in knowledge sharing, it tends to precede customer/brand interactions, thus serving as a CE antecedent (Hollebeek et al., 2019). In other words, by stimulating customer knowledge sharing, CE's development is facilitated (Itani et al., 2019). We postulate:

H2. Customer knowledge sharing is positively associated with CE in the (a) service, and (b) tangible goods context.

3.2. CE Consequences

We next outline CE's main consequences, including customer cocreation and relationship quality, which are discussed further in the following sub-sections.

Customer Cocreation refers to "a customer's perceived value arising from interactive, joint, collaborative or personalized brand-related activities for or with stakeholders in service systems" (Hollebeek et al., 2019, p. 170). That is, upon interacting with a brand or firm, customers will

develop a particular level (and valence) of perceived value from the interaction (Mingione & Leoni, 2019; Roy, Singh, Hope, Nguyen, & Harrigan, 2019), as advanced in S-D logic, in turn affecting their future brand-related cognitions, emotions, and behaviors (Ranjan & Read, 2016).

Ranjan and Read (2016) identify two cocreation dimensions, including value-in-use and co-production. *Value-in-use* has high significance for tangible goods and less tangible services, given the customer's expected value extraction from their purchases while using these (Witell, Kristensson, Gustafsson, & Löfgren, 2011). As such, value-in-use comprises experiential, personalized, and relational tenets (Ranjan & Read, 2016). Second, *co-production* refers to customer contributions to firm-based processes (e.g. assisting with new product development; Lemke, Clark, & Wilson, 2011; Sawhney, Verona, & Prandelli, 2005), which comprises equity, knowledge, and interaction facets (Ranjan & Read, 2016). For example, when customers perceive a high level of interaction-related fairness (equity), a positive effect on their ensuing cocreation is expected. Overall, as customers engage with a brand/firm, value cocreation arises, rendering it a CE consequence (Hollebeek et al., 2019). We posit:

H3. CE is positively associated with customer co-creation in the (a) service, and (b) tangible goods context.

Relationship Quality refers to a customer's perceived overall quality of a brand relationship (Itani et al., 2019). Given that relationship quality arises from customer/brand interactions, it exists as a CE consequence (Hollebeek, 2019). Primary relationship quality dimensions include customer trust, satisfaction, and commitment (e.g., Nadeem & Al-Imamy, 2020; Nguyen & Nguyen, 2014). Correspondingly, we conceptualize relationship quality as a second-order, multi-dimensional construct that comprises these dimensions. Here, *trust* refers to a customer's "confidence in the[ir]

exchange partner's reliability and integrity" (Morgan & Hunt, 1994, p. 23). *Customer satisfaction* denotes a customer's overall evaluation of an offering (Anderson, Fornell, & Rust, 1997, p. 130). Third, *commitment* reflects the customer's "desire to maintain a valued relationship" so as to maintain maximum effort at maintaining it (Morgan & Hunt, 1994, p. 23).

Unlike CE's *intra*-interaction scope that focuses on the customer's resource investment in a particular interaction (Hollebeek et al., 2019), relationship quality's component concepts of customer satisfaction, trust, and commitment tend to develop over time, thus spanning multiple interactions. As such, they represent *trans*- or *extra*-interaction concepts (unlike CE), and thus occur as CE consequences (Vivek et al., 2012). We propose:

H4. CE positively influences relationship quality with customers in the (a) service, and (b) tangible goods context.

3.3. Moderating Role of Nature of Offering

As outlined, the sports context comprises both tangible offerings (e.g. sports clothing, equipment, nutrition; Andreff, 2006) and less tangible, service-based offers (e.g. particular sports offered by sports clubs, sports tourism, commercial sports matches available for viewing, or sport-related support services, such as sports massage; Lera-López, 2019). In sports-related service (vs. goods), customers typically engage in more extensive interactivity with sports staff (Afthinos, Theodorakis, & Howat, 2017; Chiu, Won, & Bae, 2019). Consequently, the development of customer relationships and customer cocreation is expected to be more prominent in sports-related service than tangible goods settings (Auh, Bell, McLeod, & Shih, 2007; Chiu et al., 2019; Kumar & Pansari, 2016).

Unlike tangible goods, many services are simultaneously produced and consumed, typically raising CE (Grönroos, 2001; Brodie et al., 2011). Relatedly, service inseparability yields a typically higher level of customer/firm or -employee collaboration and learning (Jackson, Neidell, & Lunsford, 1995; Hollebeek et al., 2019). For example, sports club customers are required to first learn key service-related skills to be able to benefit from the core service offering. We posit:

H5a. The effect of customer learning on CE is stronger in service (vs. goods)-based contexts.

Moreover, service inseparability implies that the locus of service production and consumption is typically the same (Kotler, 1982). Particularly in group-based service delivery formats (e.g., educational, dance, art, or fitness classes; social media), the simultaneous presence of multiple customers in the servicescape will raise the likelihood of customers sharing their service-related knowledge or experiences with one another (Clark et al., 2020). In addition, the commonly relatively experiential nature of service provision will see many customers share their service-related knowledge or experience (Chen, Drennan, Andrews, & Hollebeek, 2018; Hollebeek et al., 2019). We postulate:

H5b. The effect of customer knowledge sharing on CE is stronger in service (vs. goods)-based contexts.

While prior research has alluded to CE's favorable effect on customer cocreation (e.g. Hollebeek, 2019), empirical validation of these claims remains limited. Here, we not only assert CE's positive impact on cocreation, but also differentiate this effect across the service- (vs. goods)-based contexts. In particular, given CE's and cocreation's core *interactive* nature (Chathoth et al.,

2016; Hollebeek et al., 2019), we expect this association to be stronger in service (vs. tangible goods) settings. Correspondingly, we assert:

H5c. CE's effect on customer cocreation is stronger in service (vs. goods)-based contexts.

Likewise, given their core interactive nature, services (vs. goods) may offer enhanced opportunity to build value-laden customer/firm relationships, in turn boasting superior relational benefits. That is, through (regular) service interactions, services can foster strong customer bonds with various service elements (Eisingerich & Bell, 2007), including the focal offering, employees, and/or fellow customers (Brodie et al., 2013; Clark et al., 2020). Consequently,

H5d. CE's effect on relationship quality is stronger in service (vs. goods)-based contexts.

4. Method

4.1. Research Setting

The Iranian Ministry of Youth and Sport aims to raise people's participation in sports, as evidenced by their taglines *Sport for All* and *Active Iran* (Behnam, Delshab, & Tuan). According to their statistics, out of approximately 80 million Iranians, 14% are estimated to exercise regularly (i.e. at least 30 minutes per day, three days a week; Behnam, Sato, Baker, Delshab, & Winand), which is growing (e.g. vs. 6.9% in 2013; Rouhani, 2014). In line with H5a-d, which explore particular CE-based relationships in the service (vs. tangible goods) context. Accordingly, we collected data from 13 non-profit sports clubs, which are suitable here given their intangible *service* focus (Behnam, Pyun, Doyle, & Delshab, 2020). We also collected data from eight sports stores (i.e., tangible sports *goods* retailers), reflecting our requirements for physical goods-based offerings. Both our sports clubs and -stores were located in the city of Urmia, Northwest Iran.

4.2. Sampling Procedures

Our survey instrument's face validity was first validated by three academic experts, who assessed the questionnaire's wording and application to the sports service/goods context. In response to their feedback, we made minor changes to the item wording, as required. Next, we conducted a questionnaire pre-test by soliciting a sample of 50 undergraduate students during three of their classes. Overall, the pilot test confirmed the survey instrument's readability. Moreover, with Cronbach alphas ranging from .82 to .95, the pre-test data revealed the measures' high reliability (internal consistency).

In the main survey, we utilized a quantitative research design that deployed a convenience sample of 756 customers (311 women and 445 men) located in Urmia. Of these, 381 were sports club customers, while the remaining 375 were sports store customers. Table 2 offers an overview of the participants' demographic characteristics.

[Insert Table 2 around here]

4.3. Measures

Multiple-item measures were used to gauge the framework's associations, which were collected on 7-point Likert scales (1 = *strongly disagree* through to 7 = *strongly agree*). Customer knowledge sharing was measured on a 4-item scale adapted from Kumar and Pansari (2016). Customer learning was measured with a 6-item scale adapted from Chiang, Wei, Parker, and Davey (2017). Further, CE was measured by Hollebeek et al.'s (2014) three-dimensional instrument discussed in our review. Moreover, customer co-creation was measured with Ranjan and Read's (2016) 23-item scale, which comprises value-in-use and coproduction, as also detailed in our review. Finally, relationship quality was gauged by a higher-order construct comprising the

concepts of customer satisfaction, trust, and commitment (Aurier & N'Goala, 2010; Bansal, Irving, & Taylor, 2004; Voss, Godfrey, & Seiders, 2010).

4.4. Research Procedures

In this study, 15 not-for-profit sports clubs and 10 sports stores were contacted. Of these, 13 sports clubs and eight sports stores agreed for their customers to participate in the survey. The study's objectives were explained to each of these organizations' managers. After obtaining managerial approval, the main researcher was stationed at the entrance of these organizations during the busiest days and times of the week (i.e. Monday to Thursday, from 4-8pm) for three weeks in November 2019. The researcher informed the participants about the study's objectives and administered the questionnaire. Participants were informed of the survey's anonymous, confidential nature. The questionnaire took approximately 15 minutes to complete. After the data was collected, a written report of the results was provided to each of our managers.

4.5. Data Analysis

We used maximum likelihood estimation with robust standard errors (MLR), deploying M-Plus Version 7.4 (Muthén & Muthén, 1998-2012). To evaluate the second-order measures (e.g., CE), we conducted a series of confirmatory factor analyses (CFAs).

We also assessed our measures for internal consistency, indicator reliability, convergent validity, and discriminant validity (Chin, 1998; Hair, Hult, Ringle, & Sarstedt, 2016). Internal consistency was tested by calculating composite reliability (CR) scores (Chin, 1998; Fornell & Larcker, 1981), while indicator reliability was tested by using the indicators' outer loadings. Each of these values should exceed the 0.70 threshold (Hair et al., 2016). Convergent validity was inspected by using the average variance extracted (AVE; Chin, 1998), which should exceed the

value of .50 (Fornell & Larcker, 1981). Further, discriminant validity was tested by satisfying the following two criteria: (a) The square root of the AVE for each construct should exceed the relevant construct's inter-correlations with the other model constructs (Fornell & Larcker, 1981), and (b) Each construct's outer loadings should exceed those of the other constructs (Hair et al., 2016). Overall, each of the respective tests was satisfied in our dataset. We next detail our main findings.

5. Results

5.1. Measurement Model, Construct Reliability and Validity Scores

The CFA results indicated a good model fit: $\chi^2/df = 2872.61/1301 = 2.21$, comparative fit index (CFI) = 0.95, Tucker-Lewis index (TLI) = 0.94, standardized root mean square residual (SRMR) = 0.056, and root mean square error of approximation (RMSEA) = .04. For each of the four constructs, the CR values ranged from .71 to .95, exceeding the .70 threshold and suggesting acceptable internal consistency (see Table 3). The outer loadings were higher than .70, suggesting that all constructs exhibited satisfactory indicator reliability. Moreover, all AVE values exceeded the threshold, indicating suitable convergent validity (also see Table 3). The results also indicate the model's acceptable discriminant validity (see Table 4).

[Insert Tables 3-4 around here]

5.2. Structural Model Results

Main Effects. The structural model yielded the following results: $\chi^2/df = 2922.30/1303 = 2.28$, CFI = .94, TLI = .94, SRMR = .068, and RMSEA = .041, indicating acceptable model fit. The structural model accounted for 16% of the observed variance in customer knowledge sharing, 34% of the variance in CE, 40% of the variance in customer cocreation, and 60% of the variance in

relationship quality. In support of H1, customer learning significantly influenced CE (service: $\beta = .68, p < .001$, product: $\beta = .31, p < .001$). Regarding the hypothesized paths, customer knowledge sharing had a significant positive effect on CE (service: $\beta = .18, p < .001$, product: $\beta = .15, p = .062$), supporting H2. The analysis also revealed CE's significant, positive effect on customer cocreation (service: $\beta = .72, p < .001$, product: $\beta = .45, p < .001$) and relationship quality (service: $\beta = .62, p < .001$, product: $\beta = .30, p = .005$), supporting H3-4.

Moderating Effects. As shown in Table 5, bootstrapping (i.e. 5,000 resamples) was performed to test our proposed moderation and mediation effects, given its suitability for testing indirect, total and moderating effects (Hayes & Scharkow, 2013). With the exception of the effect of sports club-based customer knowledge sharing on CE, all direct effects were supported (see Table 4). Customer learning was found to raise CE significantly more in the sports club (vs. sports store) context. Likewise, CE's positive effect on relationship quality and customer co-creation was significantly stronger in the sports service (vs. tangible goods) context. In sum, these findings confirm H5a, H5c and H5d.

[Insert Table 5 around here]

Moderated Mediation. Moderated mediation occurs when “mediation relations are contingent on the level of a moderator” (Preacher, Rucker, & Hayes, 2007, p. 193). The indirect effect of customer learning on relationship quality and customer cocreation through CE was significantly stronger for sports services (vs. tangible products). Finally, the positive total effect of customer learning on relationship quality and customer cocreation was significantly stronger for our examined sports-related services vs. products (see Table 5).

6. Discussion

6.1. Theoretical Implications

This study adds to the body of knowledge on CE in several ways. In line with calls for further empirical CE-based research (e.g. MSI, 2018), we explore CE in the sports-based service vs. tangible products context, thereby offering more granular, empirically-derived CE-based insight and making an important theoretical contribution. Within these contexts, we offer an empirical test of customer learning and knowledge sharing as key CE antecedents (Hollebeek et al., 2019) and customer cocreation and relationship quality as chief CE consequences (Beckers, Van Doorn, & Verhoef, 2018; Hollebeek, 2019). Overall, our findings reveal CE's significantly stronger nomological network-based effects in the sports-related service (vs. tangible product) context, in line with the substantive attention given to *service*-based CE (Kumar et al., 2019; Islam et al., 2019).

We next detail the key implications arising from our specific findings. First, from our data, we confirm customer learning's key antecedent role to CE in our sports-based service and tangible goods context. As customers learn about particular products or services, they will typically be able to more effectively integrate their resources toward achieving their product/service-related goals (Hibbert et al., 2012; Higgins & Scholer, 2009).

In addition, as customers learn, their product/service-related knowledge develops. Consequently, their capacity for customer knowledge sharing rises in parallel. Therefore, customer learning acts as an important direct CE driver for sports-based service and tangible products (Lusch & Nambisan, 2015). Moreover, learning indirectly affects CE via knowledge sharing, but only in the sports-based service (vs. tangible goods) context. This result is plausible when explained as follows: Given that sports-based service tends to see higher levels of customer-to-customer

interaction (e.g. by jointly playing (team) sports), a greater opportunity exists for customers to share their recent sports-related learning (Clark et al., 2020).

Second, we explored CE's effect on customer cocreation and relationship quality (Hollebeek, 2019). By confirming the existence of a significant, positive effect of *intra*-interaction CE on *trans*-interaction customer cocreation (Rather et al., 2019), we confirm CE's effect *beyond* the interaction alone. That is, CE acts as an important driver of the relationship quality facets of customer satisfaction, trust, and commitment, thereby foretelling relationship strength and duration, both in the sports-related service and tangible product contexts. However, its effect is again more pronounced in the former setting. Consequently, CE's importance in fostering value-laden customer-brand relationships is substantiated (Fournier, 1998), particularly for sport-related service. We therefore advise managerial emphasis on service (vs. tangible product)-related aspects of particular offerings, as these offer a significant value-creating opportunity.

We identified the following key differences for the sports-related service vs. products context. One, for services (vs. products), the following three paths were significantly stronger: (a) Customer learning to CE, (b) CE to customer cocreation, and (c) CE to relationship quality. Therefore, sports-related service (vs. tangible product) customers tend to become more engaged through service-related learning, revealing customer learning's greater importance in the sports-based service (vs. product) context. Two, *intra*-interaction CE for sports-related service has a greater positive effect on *trans*-interaction cocreation for sports-related service (vs. products). Consequently, based on our results, CE was found to merit greater strategic importance in the service (vs. physical goods) context, as expected, given its interactive nature (Harmeling, Moffett, Arnold, & Carlson, 2017). Three, in sports-related service (vs. products), a greater effect of CE on relationship quality was identified, as discussed above. Four, customer learning's indirect effect

on relationship quality via CE was found to be significantly stronger in the sports-related service (vs. product) sector. Therefore, in sports-related service, customer learning serves a particularly strategic role in forging closer customer/brand relationships or bonds.

6.2. Managerial Implications

This research also generates several important managerial implications. First, we identified the important role of customer learning and knowledge sharing in fostering CE. Therefore, managers are advised to actively implement customer learning and knowledge sharing opportunities in or related to their services. For example, customer learning can be stimulated through (e.g. Internet/Intranet-based) customer learning repositories, while customer knowledge sharing is facilitated through brand-related customer chatrooms, social media pages, or online brand communities.

Second, we established CE's key role in driving customer cocreation and relationship quality, as outlined, thereby corroborating CE's strategic importance in fostering consumer/brand relationships (Harmeling et al., 2017; Vivek et al., 2014, 2012). To stimulate CE, the customer's investment of operant (e.g. cognitive, emotional, behavioral) and/or operand (e.g. equipment) resources should be stimulated (Kumar et al., 2019). Sample ways to achieve this include the following. First, to foster customers' operant (i.e. skill/knowledge-based) resource investments in their brand interactions (Hollebeek, 2019), we recommend the provision of multiple avenues to facilitate cognitive, emotional, and behavioral investments. To stimulate cognitive engagement, the offering of (online) information, authentic, thought-provoking material is important. To foster emotional engagement, affect-inducing stimuli are key to touching the hearts of the organization's customers (e.g. Coca-Cola's *Hello Happiness* campaign, which offers free calling minutes to

foreign, low-paid laborers in Dubai). To stimulate behavioral engagement, clear, easy-to-follow cues-to-action should be offered (e.g. easily navigable ecommerce webpages to facilitate sales).

Third, based on our inclusion of nature of the offering (sports-related product vs. service), we deduce the following managerial implications. The path from customer learning to CE was significantly stronger in our service (vs. product) context, as outlined. For managers, this finding implies that for the service component of their offering, a focus on inciting customer learning is recommended to foster CE. Ways to achieve this end include the provision of free trials or the incorporation of customer educational opportunities through their service journey (e.g. opt-in interactive displays at sporting events/competitions, personalized information, newsletters; Hollebeek, Clark, Andreassen, Sigurdsson, & Smith, 2020). As different individuals have differing learning styles, the provision of a range of (e.g. visual, auditory) learning tools is recommended (e.g. through social networks; Hollebeek et al., 2019).

Likewise, the observed paths from CE to cocreation and relationship quality were stronger for sports-related services (vs. tangible products), substantiating CE's importance in the service context (Kumar et al., 2019). To stimulate service-based CE's transition to cocreation and relationship quality development, we recommend the undertaking of thorough market research to identify those offering-related tenets that customers desire (e.g. through user shadowing; Jung, Kim, & Kim, 2014). Based on the emerging findings, offerings can then be designed to optimally satisfy particular customers or customer segments. Service design should also incorporate ample customer-to-firm and customer-to-customer interaction opportunities, thereby facilitating cocreation's development. To optimize the development of value-laden customer relationships, firm-based online/offline (e.g. social media-based) brand communities or customer or peer-to-peer support (communities) can be useful.

6.3. Limitations and Further Research

Despite its contributions, this research is not without limitations. First, data were collected from a single country or culture (i.e. Iran) and a single (i.e. sports) context. Given CE's highly contextual nature (Brodie et al., 2011), the concept may therefore pan out rather differently across contexts, thus meriting further research. Other settings that incorporate parallel service/product-related sub-sectors include tourism (e.g. service (e.g. tour booking) vs. tourist gear/equipment retailers) or property (e.g. real estate agent services vs. furniture stores). In addition, given the well-known amalgamation of tangible/intangible aspects within a *single* service, further research may wish to dissect CE-related differences across these (e.g. CE with an airline's intangible core service (i.e. transport) vs. its tangible attributes, including meals, toiletries, or a car workshop's core intangible service (i.e. vehicle repair) and its association with relevant tangible components, e.g. new parts). Moreover, given CE's propensity to differ across cultures (Gupta, Pansari, & Kumar, 2018; Hollebeek, 2018), we recommend replicating our research design across cultures.

Second, we conducted a cross-sectional study that examines the studied concepts at a single point in time. As such, it does not offer insight into how customer learning, engagement, or cocreation develop over time, particularly vis-à-vis one another. Therefore, further research is advised to take a longitudinal research approach, which permits the exploration of customers' evolving dynamics over time.

Third, while we include the nature of the offering (good/service) as an important moderating factor, other or additional moderators may exist that we did not take into account in this study (e.g. relationship tenure, customer need-for-cognition). Therefore, one avenue to explore in future research is the effect of relationship tenure on the modeled dynamics (Wolter, Bock, Mackey, Xu, & Smith, 2019). In addition, Beaton, Funk, Ridinger, and Jordan (2011) argue for

the role of customer involvement in the sports context. Therefore, future research could consider customer involvement as a moderating factor in the association between CE and its modeled antecedents and consequences. Doing so would add a novel angle, given involvement's predominant exploration as a CE driver to date (e.g. Harrigan et al., 2018).

Finally, though we adopt an S-D logic perspective, the adoption of an alternate theoretical frame is likely to drive the development of different conceptual models, which may be used to explore CE's dynamics. For example, social exchange theory or service logic may be adopted in this vein, among others. CE's exploration through different theoretical lenses is likely to result in distinct conceptual models, each deriving unique insight. The resulting findings may then be compared and contrasted to our attained insight.

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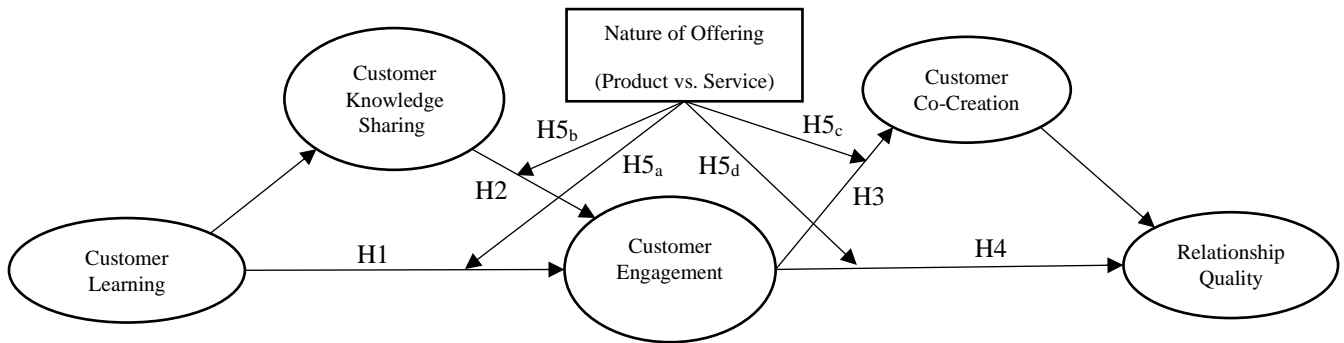


Figure 1: Conceptual model

Notes: Circles represent latent variables; H = Hypothesis.

Table 1: Overview - Key CE Antecedents and Consequences

Author(s)	Study type	CE antecedents	CE consequences
Hollebeek et al. (2019)	conceptual	customer resource integration, knowledge sharing, and learning	operant resource development, interpersonal operant resource development, and cocreation
Hollebeek (2019)	conceptual	Business customer resource integration effectiveness, Business customer resource integration efficiency Employee engagement	Business customer cocreation, Business customer relationship productivity, Business customer relationship quality Firm performance
Kumar and Pansari (2016)	empirical		
Pansari and Kumar (2017)	conceptual	Satisfaction, emotions	-
Kumar et al. (2019)	conceptual	Satisfaction, emotional attachment	-
Islam et al. (2019)	empirical	Service quality	Brand experience, repatronage intent
Chang, Huang, Wang, and Lee (2019)	empirical	Relational bonds	Service quality
Harmeling et al. (2017)	empirical	Psychological ownership, self-transformation	
Youssef, Johnston, AbdelHamid, Dakrory, & Seddick (2018)	conceptual	Customer satisfaction, commitment, trust, and involvement	Value, brand, relationship, and customer equity
So, King, Sparks, & Wang (2016)	empirical	-	Service brand evaluation, brand trust, and brand loyalty
Odoom, Boateng, and Asante (2017)	empirical	Relational benefits (social benefit, exploration and entertainment)	-

Table 2: Demographic Respondent Profiles

Characteristic	Sports clubs		Sports stores	
	N (381)	%	N (375)	%
Gender				
Male	245	35.7	200	53.3
Female	136	64.3	175	46.7
Age				
Less than 20	79	20.7	92	24.5
21–30	111	29.1	106	28.3
31–40	90	23.6	82	21.9
41–50	36	9.4	37	9.9
51–60	26	6.8	32	8.5
61–70	22	5.8	15	4
More than 70	17	4.5	11	2.9
Visit/purchase frequency				
	(monthly)		(annual)	
Two or less	24	6.3	134	35.7
Three to four	96	25.2	142	37.9
Five to six	142	37.3	78	20.8
More than six	119	31.2	21	5.6

Table 3: Modeled Constructs

Construct	β	Mean (SD)
Customer Learning (CR = .95; AVE = .76)		
I can learn something new in this club/store.	.87*	4.11 (1.06)
I can get new information from in this club/store.	.86*	4.15 (1.06)
I can solve problems related to services/products with the acquisition of new knowledge in this club/store.	.87*	4.14 (1.07)
Other customers and I ask questions about new services/products in this club/store.	.84*	4.08 (1.12)
Customers (myself included) discuss and reply to new services/products in this club/store.	.90*	4.13 (1.07)
Customers behave based on the knowledge of new services/products.	.90*	4.09 (1.04)
Customer knowledge Sharing (CR = .93; AVE = .77)		
I provide feedback about my experiences with the services/products to the club/store and customers.	.90*	3.93 (1.12)
I provide suggestions for improving the services/products of the club/store.	.90*	3.97 (1.06)
I provide feedbacks about the new product/services to the club/store and customers.	.88*	3.94 (1.09)
I provide feedback/suggestions for developing new services/products for this club/store.	.82*	4.00 (1.08)
Customer Engagement: Cognitive processing (CR = .89; AVE = .73)		
Using sport services/products gets me to think about this club/store.	.82*	4.04 (1.12)
I think about this club a lot when I'm using club's/store's sports services/products.	.88*	4.05 (1.13)
Using club's/store's sports services/products stimulates my interest to learn more about this club/store.	.87*	4.05 (1.15)
Customer Engagement: Affection (CR = .92; AVE = .74)		
I feel very positive when I use the sports services/products of this club/store.	.87*	4.01 (1.06)
Using the sports services/products of this club/store makes me happy.	.86*	4.01 (1.14)
I feel good when I use the sports services/products of this club/store.	.87*	3.99 (1.09)
I'm proud to use the sports services/products of this club/store.	.83*	4.02 (1.09)
Customer Engagement: Activation (CR = .88; AVE = .72)		
I spend a lot of time using the sports services/products of this club/store compared to other clubs/stores.	.83*	4.03 (1.13)
Whenever I'm using from sports services/products, I usually use from the sports services/products of this club/store.	.84*	3.99 (1.12)
This club/store is one of the clubs/stores I usually use when I use from a sport service/product.	.87*	4.06 (1.16)
Customer Engagement (second-order) (CR = .87; AVE = .70)		
Cognitive processing	.88*	NA
Affection	.72*	NA
Activation	.90*	NA
Customer Co-Creation: Co-Production (Knowledge) (CR = .92; AVE = .74)		
This club/store was open to my ideas and suggestions about its existing services/products or towards developing a new service/product.	.85*	3.98 (1.08)
This club/store provided sufficient illustrations and information to me.	.89*	4.00 (1.09)
I would willingly spare time and effort to share my ideas and suggestions with the club/store in order to help it improve its services/products and processes further.	.87*	4.02 (1.09)
This club/store provided suitable environment and opportunity to me to offer suggestions and ideas.	.84*	3.97 (1.10)
Customer Co-Creation: Co-Production (Equity) (CR = .91; AVE = .71)		
This club/store had an easy access to information about my preferences.	.86*	4.10 (1.01)
The services/products at this club/store are aligned with my requirements (i.e. the way I wish them to be).	.86*	4.07 (1.05)
This club/store considered my role to be as important as its own in the service/product.	.85*	4.06 (1.05)
We shared an equal role in determining the final outcome of the service/product.	.80*	4.08 (1.01)
Customer Co-Creation: Co-Production (Interaction) (CR = .92; AVE = .75)		
During the service/product I could conveniently express my specific requirements.	.83*	4.06 (1.09)

This club/store conveyed to its consumers the relevant information related to the service/product.	.87*	4.00 (1.10)
This club/store allowed sufficient consumer interaction in its services/products (service/product development, marketing, assisting other customers, etc.).	.89*	4.02 (1.10)
In order to get maximum benefit from the service/product, I had to play a proactive role during my interaction (i.e., I have to apply my skill, knowledge, time, etc.).	.88*	4.03 (1.08)
Customer Co-Creation: Co-Production (second-order) (CR = .87; AVE = .69)		
Knowledge	.86*	NA
Equity	.88*	NA
Interaction	.75*	NA
Customer Co-Creation: Value-in-Use (Experience) (CR = .91; AVE = .77)		
The use of services/products is a memorable experience for me.	.84*	4.09 (1.11)
Depending upon the nature of my own participation, my experiences in the services/products might be different from other consumers.	.89*	4.08 (1.14)
In this club/store have possible for a consumer to improve the services/products by experimenting and trying new things.	.90*	4.13 (1.14)
Customer Co-Creation: Value-in-Use (Personalization) (CR = .93; AVE = .78)		
The benefit, value, or fun from the services/products depended on the consumer and the usage condition.	.83*	4.07 (1.19)
This club/store tried to serve the individual needs of each of its consumer.		
Different consumers, depending on their taste, choice, or knowledge, involve themselves differently in the services/products.	.89*	4.09 (1.12)
This club/store provided an overall good experience, beyond the “functional” benefit.	.90*	4.10 (1.13)
The benefit, value, or fun from the services/products depended on the consumer and the usage condition.	.91*	4.16 (1.11)
Customer Cocreation: Value-in-Use (Relationship) (CR = .94; AVE = .81)		
The club's/store's extended facilitation is necessary for consumers to fully enjoy the services/products.	.84*	4.09 (1.09)
I felt an attachment or relationship with this club/store.	.93*	4.04 (1.05)
There was usually a group, a community, or a network of consumers who are a fan of the club/store.	.91*	4.02 (1.10)
This club/store was renowned because its consumers usually spread positive word about it in their social networks.	.92*	4.02 (1.09)
Customer Cocreation: Value-in-Use (second-order) (CR = .90; AVE = .75)		
Experience	.91*	NA
Personalization	.91*	NA
Relationship	.78*	NA
Customer Cocreation (third-order) (CR = .71; AVE = .55)		
Co-Production	.85*	NA
Value-in-Use	.62*	NA
Relationship Quality: Trust (CR = .91; AVE = .72)		
I feel that I can trust my club/store completely.	.84*	4.08 (1.06)
This club/store is truly sincere in its promises.	.83*	4.11 (1.08)
This club/store is honest and truthful with me.	.86*	4.12 (1.09)
This club/store treats me fairly and justly.	.87*	4.07 (1.09)
Relationship Quality: Satisfaction (CR = .87; AVE = .69)		
I am completely satisfied with the services/products experience in this club/store.	.81*	3.99 (1.08)
My choice to use of services/products in this club/store was a wise one.	.83*	3.97 (1.12)
I am satisfied with my decision to be a customer of this club/store.	.85*	4.00 (1.10)
Relationship Quality: Commitment (CR = .87; AVE = .69)		
This club/store has a great deal of personal meaning for me.	.81*	4.06 (1.03)
I feel emotionally attached to this club/store.	.85*	4.09 (1.09)
I feel a strong sense of belonging to this club/store.	.84*	4.00 (1.08)
Relationship Quality (second-order) (CR = .88; AVE = .71)		
Trust	.84*	NA
Satisfaction	.91*	NA

Commitment	.78*	NA
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Notes: * $p < .001$; β = factor loading; CR = composite reliability; AVE = average variance extracted; SD = Standard deviation; NA = not applicable.

Table 4: Construct Correlations

	1	2	3	4	5
1. CL	.87				
2. CKS	.40	.88			
3. CE (second-order)	.54	.33	.84		
4. CCC (Third-order)	.57	.36	.57	.74	
5. RQ (second-order)	.52	.49	.67	.65	.84

Notes: The diagonal values in bold refer to square root of AVE; CL = Customer Learning; CKS = Customer knowledge Sharing; CE = Customer Engagement; CCC = Customer Co-Creation; RQ = Relationship Quality.

Table 5: Direct, Indirect, and Total Effects

Structural relationships	Total <i>N</i> = 756		Service #1 <i>N</i> = 756		Goods #2 <i>N</i> = 756		$\Delta\beta$
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	
Direct effects							
CL → CE	.52***	.056	.68***	.07	.31***	.07	#1 > #2*
CKS → CE	.14***	.052	.18***	.05	.15	.08	-
CE → RQ	.37***	.083	.62***	.14	.30**	.11	#1 > #2***
CE → CCC	.63***	.050	.72***	.06	.45***	.08	#1 > #2***
Indirect effects	β [CI 95%]		β [CI 95%]		β [CI 95%]		$\Delta\beta$
CL → CKS → CE	.07 [0.03; 0.12]		.05 [0.02; 0.09]		.06 [0.00; 0.13]		-
CL → CE → RQ	.25 [0.15; 0.37]		.39 [0.22; 0.55]		.07 [0.02; 0.15]		#1 > #2***
CL → CE → CCC → RQ	.12 [0.07; 0.20]		.12 [0.02; 0.28]		.04 [0.02; 0.11]		-
CL → CKS → CE → RQ	.03 [0.01; 0.06]		.04 [0.02; 0.08]		.01 [0.00; 0.05]		-
CL → CKS → CE → CCC → RQ	.02 [0.01; 0.03]		.01 [0.00; 0.03]		.00 [0.00; 0.03]		-
CKS → CE → RQ	.09 [0.04; 0.16]		.10 [0.05; 0.19]		.03 [0.00; 0.10]		-
CKS → CE → CCC → RQ	.04 [0.02; 0.08]		.03 [0.00; 0.09]		.02 [0.00; 0.06]		-
CL → CE → CCC	.33 [0.24; 0.42]		.36 [0.24; 0.48]		.08 [0.04; 0.15]		#1 > #2***
CL → CKS → CE → CCC	.04 [0.02; 0.08]		.03 [0.02; 0.07]		.02 [0.00; 0.04]		-
CKS → CE → CCC	.11 [0.05; 0.19]		.10 [0.04; 0.17]		.04 [0.00; 0.09]		-
Total effects	β [CI 95%]		β [CI 95%]		β [CI 95%]		$\Delta\beta$
CL → RQ	.42 [0.33; 0.52]		.56 [0.44; 0.67]		.13 [0.06; 0.24]		#1 > #2***
CKS → RQ	.13 [0.06; 0.21]		.13 [0.08; 0.22]		.05 [0.00; 0.14]		-
CL → CCC	.37 [0.28; 0.47]		.39 [0.27; 0.52]		.10 [0.05; 0.17]		#1 > #2***
CKS → CCC	.11 [0.05; 0.19]		.10 [0.04; 0.17]		.04 [0.00; 0.09]		-

Notes: CL = Customer Learning; CKS = Customer knowledge Sharing; CE = Customer Engagement; CCC = Customer Cocreation; RQ = Relationship Quality; SE= standard error; CI = Confidence interval; ***p < .001; **p < .01; *p < .05.