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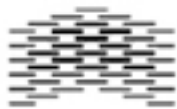
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Influences of customer participation and customer brand engagement on brand loyalty

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Abstract

Purpose – Value co-creation assumes that customers take active roles and create value together with firms. This paper aims to investigate the short- and long-term effects of customer participation on brand loyalty, through brand satisfaction. Participation effects were also examined among social media-using customers with the additional explanatory factor of brand engagement.

Design/methodology/approach – Two studies were conducted among insurance customers: a cross-sectional study using a nationwide sample ($N = 954$) and a subsample of social media users ($N = 145$) to examine short-term effects, and a longitudinal study using data from three assessment timepoints ($N = 376$) to enable empirical long-term testing.

Findings – The cross-sectional study showed positive short-term effects of customer participation on brand loyalty, mediated by satisfaction. Among customers using social media, positive participation effects gained from brand engagement strengthened brand satisfaction. The longitudinal study did not show similar positive long-term effects of customer participation.

Practical implications – These findings help deepen service marketers' understanding of the possible short-term effects of customer participation and customer brand engagement, and caution them to not expect that customer participation will have long-term positive satisfaction and loyalty effects.

Originality/value – This research provides interesting short- and long-term findings, due to the complementary cross-sectional and longitudinal study designs.

Keywords Brand satisfaction, Customer participation, Brand loyalty, Customer brand engagement

Paper type Research paper

Service firms continually strive to maintain long-term relationships with customers and to understand the factors that build and sustain brand loyalty. From a value co-creation perspective, which recognizes customers' active participatory roles in value creation (Ranjan and Read, 2014; Pralahad and Ramaswamy, 2004; Jaakkola and Alexander, 2014), customers' participation (Nysveen and Pedersen, 2014) and engagement (Brodie *et al.*, 2011b; Hollebeek, 2011a) can be prioritized to ensure their loyalty. Firms considering customers as value co-creators view them as partners or co-producers, instead of "external elements" (Fuat Firat *et al.*, 1995), as they engage and participate in specific interactions and activities. Thus, interaction manifests through participation (Grönroos and Ravald, 2011) and engagement (Zhu, 2006).

Modern technology plays a crucial role in supporting the manner in which firms and customers interact (Flores and Vasquez-Parraga, 2015). Social media comprise a major arena in which customers participate in co-production, and which supports the development of collaborative customer relationships (Maklan and Klaus, 2011). Engagement is

considered to be a particularly important phenomenon in social media (e.g. chats, blogs, videos and brand communities) (Brodie *et al.*, 2011a; Fournier and Avery, 2011; Jahn and Kunz, 2012; Dessart *et al.*, 2014). The interactive nature of social media gives service firms the opportunity to become more customer-centric, thereby encouraging customer participation (Kaplan and Haenlein, 2010; Hoffman and Novak, 2012) and engagement in certain brand activities (Schamari and Schaefer, 2015). Thus, social media complement brands' physical-world counterparts and serve as platforms for customers' sharing of feelings, thoughts and content (Schau *et al.*, 2009). An increasing number of service brands invests time and marketing resources in the organization of social media-based brand communities and Facebook brand pages (McAlexander *et al.*, 2002; Shankar and Batra, 2009; Laroche *et al.*, 2012; Vries *et al.*, 2012), positively encouraging engagement (Algesheimer *et al.*, 2005; Brodie *et al.*, 2011b; Hollebeek, 2011a, 2011b), in the hope that customers will participate. Previous studies have investigated customer preferences for online versus offline interaction (Frambach *et al.*, 2007), customer satisfaction and loyalty in online versus offline contexts (Shankar *et al.*, 2003), and customer participation in virtual brand communities (Casaló *et al.*, 2008) and service recovery using online

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platforms (Dong *et al.*, 2008). However, empirical research on brand loyalty effects of the participation of customers using and not using social media, and that incorporating the effects of customer brand engagement (CBE) in social media, is lacking. Thus, in relation to insurance firms' Facebook brand pages, this research explored short- and long-term effects of customer participation on brand loyalty through the bridging element of brand satisfaction; it also investigated whether CBE among social media users explained customer participation, further enhancing brand satisfaction and brand loyalty.

Given the high cost of attracting new customers, service firms must increasingly reinforce established customer ties (Casaló *et al.*, 2007). The insurance sector is known to have low switching barriers; 17 per cent of the customer base switches insurance providers each year (Lavik and Schjøll, 2012), which makes it imperative for insurance firms to gain knowledge about factors that build and sustain brand loyalty. Brand loyalty denotes an intended behavior in relation to the brand and/or its services. If real alternatives exist or switching barriers are low, a service brand will discover its inability to satisfy customers via two feedback mechanisms: exit and voice (Hirschman, 1970). This paper considers brand loyalty as the expression of individual preferences – an attitudinal concept (e.g. intentions to stay loyal, recommend the brand, and choose the brand again) (Jacoby and Chestnut, 1978; Andreassen and Lindestad, 1998).

Previous studies of the loyalty effects of customer participation have used cross-sectional data (Casaló *et al.*, 2007; Nysveen and Pedersen, 2014). Although marketing scholars frequently conduct cross-sectional studies, several researchers have argued that longitudinal studies are more trustworthy, as they more precisely characterize long-term effects (Brodie *et al.*, 2011b; Hollebeek, 2011a, 2011b). Longitudinal studies enable consideration of auto-correlational (i.e. historical) effects, which is expected to weaken between-variable effects in comparison with cross-sectional studies (Rindfleisch *et al.*, 2008). In the present empirical research, cross-sectional and longitudinal studies were conducted to investigate observed effect patterns over short- and long-term periods. The hypotheses were that customers' willingness to participate over time would affect their brand satisfaction positively, thereby affecting their subsequent loyalty, in the short and long terms.

This paper proceeds as follows. First, it presents a theoretical framework, describing the concepts of customer participation and CBE, and the study hypotheses. Next, the methodological approaches and results of the cross-sectional and longitudinal studies are described. In the discussion section, findings from the two studies are compared and interpreted, with consideration of their implications and limitations, and suggestions for future research are made.

Conceptual background

Customer participation

Customer participation specifies the degree to which a customer puts effort and resources into the process of production (Dabholkar, 1990), thus taking an *active part* in consuming and producing value (Nysveen and Pedersen, 2014). It includes the physical and mental inputs required for co-production (Flores and Vasquez-Parraga, 2015).

Co-production consists of direct and indirect co-working between a firm and its customers, or customers' participation in product design (Lemke *et al.*, 2011). Customer participation might be evidenced in a facilitatory role at the periphery of a firm's processes (Auh *et al.*, 2007) or in an active role through the application of knowledge and sharing of information with the firm (Ranjan and Read, 2014). Following Ranjan and Read (2014), customer participation should be considered a component of co-production. In co-production, the firm is the predominant *locus* of process control (Vargo and Lusch, 2004, 2008). Etgar (2008) defined co-production as customers' participation in one or more activities in a firm's network chain (design, production, delivery, executing use) and referred to the co-production phase of value co-creation as the activation stage. This stage, which is the focus of this research, is where customer participation via co-production occurs and results in the production of the core offering. Similarly, Auh *et al.* (2007) defined co-production as customers' cooperative participation in service creation and delivery, and Chen *et al.* (2011) defined it as constructive participation in the service process.

Customer brand engagement

The concept of engagement has received considerable attention in several academic disciplines (e.g. educational psychology and organizational behavior), but only recently in the field of marketing (Gambetti and Graffigna, 2010; Hollebeek, 2011a, 2011b). In recent marketing and service research, CBE was found to be a core explanatory element in online brand communities (Brodie *et al.*, 2011a), the emergence of social media networking sites (Jahn and Kunz, 2012) and, particularly, social media (e.g. Facebook)-based brand communities (Gummerus *et al.*, 2012; Laroche *et al.*, 2012; Habibi *et al.*, 2014). As social media use has been added to firms' marketing and brand-building activities (Kaplan and Haenlein, 2010), attracted by the large number of users, firms have begun to create Facebook brand pages (Gummerus *et al.*, 2012) to encourage CBE. Following Brodie *et al.* (2011b) and Hollebeek *et al.* (2014), CBE is considered in this study to be a context-dependent, psychological construct, reflected by emotional, cognitive and intentional states generated by interactive experiences *underlying* behavioral interactions (e.g. in social media). After Hollebeek *et al.* (2014), emotional CBE is considered to be a customer's degree of positive brand activity-related affect, and cognitive CBE is conserved to be his/her level of brand activity-related thought processing and elaboration. Intentional CBE refers to a customer's interest in spending energy, effort and time on a brand activity. Brodie *et al.* (2011a) highlighted the fluctuating nature of CBE state dimensions. Intensity levels of cognitive, emotional and intentional states can change rapidly, from one moment or situation to another, in engagement processes (Hollebeek, 2011a).

Hypotheses

The disconfirmation-of-expectation paradigm (Oliver, 1980) holds that customer loyalty (e.g. intention to stay loyal, willingness to recommend a brand to others) is a function of customer satisfaction. Thus, when customers realize that their patronage has been a good choice and that the brand offers

good solutions, they likely intend to stay loyal to the brand in the future. They are also more willing to recommend the brand to other people. From a value co-creation perspective (Ranjan and Read, 2014), customers' participation in co-production is argued to help to build brand loyalty in this study. To encourage customer participation, a firm creates platforms for value creation that suit customers' unique interests, thereby enhancing brand satisfaction personally and subjectively and affecting brand loyalty positively. Co-production has been found to be a positive predictor of attitudinal loyalty (Auh *et al.*, 2007; Hosseini, 2013) and satisfaction (Ranjan and Read, 2014; Flores and Vasquez-Parraga, 2015). When customers participate in co-production activities, they tend to share their new ideas, suggestions and problems with a service firm (Chen *et al.*, 2011), and thus are expected to become more satisfied due to their personal investment (Cermak *et al.* 1994). Ranjan and Read (2014) argued that co-production is a cooperative act of satisfaction, as customers outlay resources in this process. In this paper, customers who obtain more customized services through brand activity participation are argued to be more satisfied (Bendapudi and Leone, 2003), with competitors facing more difficulty in attracting them. The short- and long-term effects of this process were tested using the following hypothesis:

H1. Through brand satisfaction, customer participation positively affects brand loyalty.

Chan *et al.*'s (2010) findings provide empirical support for the argument that customers' involvement beyond good/service consumption can add value for them. Similarly, Van Doorn *et al.* (2010) argued that customer engagement goes beyond transactions, with positive brand/firm and customer consequences. Little research has investigated relationships of CBE to other concepts, but CBE appears to positively affect brand satisfaction (Van Doorn *et al.*, 2010; Hollebeek, 2011a) and brand loyalty (Brodie *et al.*, 2011a; Hollebeek, 2011a, 2011b). The relationship between CBE and customer participation remains unclear. Sawhney *et al.* (2005) argued that customer engagement in virtual communities comprised customer participation in innovation, and Sashi (2012) proposed an engagement cycle in social media, in which customer connection and interaction are outcomes of engagement. Other researchers have suggested that customer participation is an antecedent of CBE (Nysveen and Pedersen, 2014; Ramaswamy and Gouillart, 2010; Vivek, 2009), with engagement resulting from customers' efforts and resource integration in co-production processes. Wirtz *et al.* (2013) argued that customer expertise is a moderator between brand-related social and functional drivers and online brand community engagement.

Leaning toward the view of Brodie *et al.* (2011a) by considering CBE to reflect inherent motivational, emotional, cognitive and intentional states, with CBE intensity based on brand stimuli (e.g. activities), CBE investment in social media-based brand activities is argued here to generate participation (willingness to consume and produce value, e.g. sharing ideas, participating in valuable discussions). For example, customers with greater emotional attachment to a brand will be more motivated to participate in brand activities

(Auh *et al.*, 2007). However, customers' engagement with an object (e.g. a brand) is assumed to fluctuate frequently (Brodie *et al.*, 2011a), thus evoking short-term positive effects. In the short term, customers who engage and participate in brand activities will be satisfied (Chan *et al.*, 2010; Flores and Vasquez-Parraga, 2015) and loyal (Hollebeek, 2011b). In interactive social media, customers who enter positively valenced engagement states are assumed to participate willingly in joint activities, leading to brand satisfaction and loyalty. In this paper, customers' participation is argued to generate satisfaction with their own performance (individual value) and with the engagement object (e.g. brand or brand activity; relational value), with the positive outcome of strengthened brand loyalty. This extensive affect chain is expressed in the following hypothesis, tested in the cross-sectional study:

H2. In social media, CBE will positively affect customer participation, generating positive brand satisfaction and loyalty effects.

Study 1

Design, sample and measurement

This cross-sectional study was conducted in April 2012 in partnership with Norstat (the largest online panel data provider in Norway) using a nationwide online panel survey of insurance customers aged ≥ 15 years. Respondents were rewarded through the Norstat system. To make the sample representative, Norstat controlled recruitment according to age, gender, education, income and non-disclosed customer-related variables. Participating customers of seven insurance brands filled out questionnaires with reference to the brand with which each had a relationship, and those reporting use of Facebook as a customer channel answered questions regarding their relationships with the brands in that context. Included insurance brands had used Facebook brand pages as customer channels since 2011. Customers had been invited to express their preference for the brands by "liking" them; content on the firms' Facebook brand pages was then posted automatically to these customers' Facebook news feeds, where they were expected to engage emotionally, cognitively and through behavioral intentions.

Self-reported questionnaire items measured latent constructs using modifications of previously used scales (Appendix). Customers rated their willingness to *participate* with the brand [four items reflecting customer participation in creating value together with a service brand (Nysveen and Pedersen, 2014; Chan *et al.*, 2010)]. *CBE in social media* was measured using a three-dimensional scale reflecting states of emotional, cognitive and intentional CBE [Solem and Pedersen (2016), based on the work engagement scale of Rich *et al.* (2010)]. Item wording was amended slightly for the Facebook brand page (reflecting brand-customer interactivity), following Reitz (2012) and Casaló *et al.* (2010). The questionnaire also assessed *brand satisfaction* [five items reflecting overall satisfaction, meeting of expectations (Fornell, 1992), and acceptability of brand choice (Oliver, 1980; Gottlieb *et al.*, 1994)] and *brand loyalty* [four items reflecting future loyalty and continued patronage (Selnes, 1993; Brakus *et al.*, 2009; Wagner *et al.*, 2009), recommendation to others (Brakus *et al.*, 2009) and repeat selection (Selnes, 1993)].

Responses were structured by a seven-point scale ranging from “totally disagree” to “totally agree”.

A total of 964 invited panel members completed the questionnaire. Ten “outliers” showing no variance in CBE were excluded, resulting in a final sample of 954 respondents, 145 (15 per cent) of whom reported using Facebook in relation to the insurance brands. Gender was distributed evenly in the sample, 59 per cent of respondents were aged > 45 years, 66 per cent were well educated and 47 per cent had household incomes > 600,000 NOK (Table I).

Reliability and validity testing

The data were examined through confirmatory factor analysis with maximum likelihood estimation (Bollen, 1989) using IBM SPSS AMOS 21. To assess nomological validity, concept positions were tested using a measurement model for the total sample of respondents. Convergent and divergent validity were assessed following Fornell and Larcker (1981a, 1981b).

Table I Sample demographics from the cross-sectional study

Sample demographics (N = 954)	(%)
Gender	
Male	54.4
Female	45.6
Age	
15-24	9.7
25-34	14.0
35-44	17.2
45-54	17.9
55-64	19.2
64-	21.9
Education	
Primary	5.2
Secondary	28.6
University/College ≤ 3 years	30.8
University/College ≥ 3 years	35.3
Household income (in NOK)	
<200,000	4.9
200,000-399,000	15.7
400,000-599,000	23.4
600,000-799,000	18.1
>800,000	28.9
No response	8.9
Using social media	
Using Facebook in relation to brand	15.2

Table II Reliability, validity and the correlation matrix for the total sample (N = 954)

Constructs	α	AVE	MSV	ASV	Customer participation	Brand satisfaction	Brand loyalty
Customer participation	1.01	1.04	0.06	0.06	1.02		
Brand satisfaction	0.95	0.78	0.77	0.41	0.24***	0.88	
Brand loyalty	0.90	0.69	0.77	0.41	0.23***	0.88***	0.83

Notes: α = Cronbach's alpha; AVE = average variance extracted; MSV = maximum shared squared variance; ASV = average shared squared variance; the bold values on the diagonal of the matrix represent the square root values for each AVE; significant covariances: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; $N = 954$

The estimated measurement model for the total sample ($N = 954$) showed a reasonably good fit [$\chi^2/df = 4.90$, comparative fit index (CFI) = 0.98, root mean square error of approximation (RMSEA) = 0.064]. All constructs showed acceptable reliability (Cronbach's $\alpha > 0.7$). Brand satisfaction and brand loyalty showed acceptable convergent validity, whereas customer participation did not [Cronbach's $\alpha <$ average variance extracted (AVE) > 0.5], indicating that the items did not optimally reflect the concept. No discriminant validity issue was observed, except for brand loyalty (maximum shared variance > AVE; Table II). The square root of AVE for brand loyalty was lower than its correlation with brand satisfaction.

As the strong correlation between brand satisfaction and brand loyalty may have been due to common method bias, the marker variable technique (Lindell and Whitney, 2001; Malhotra et al., 2006) was applied. A theoretically unrelated two-item variable (“Facebook can be used to read what other people are writing”, “Facebook can be used to achieve personal gains”), structured by a seven-point Likert scale anchored by “totally disagree” and “totally agree”, served as a marker. The two lowest correlations with the marker ($r = 0.15$ and $r = 0.12$) fell below the suggested 0.20 threshold for problematic method variance (Malhotra et al., 2006). All correlations in the model remained significant, with signs unchanged. These results indicated that method bias was not a significant risk in this data set.

Hypothesis testing

The hypotheses were tested using structural equation modeling (SEM; IBM SPSS AMOS 21), following the procedure of Bollen and Long (1993). $H1$ was tested using data from the 809 respondents who did not use Facebook in relation to the brands. This model showed acceptable fit ($\chi^2/df = 4.70$, CFI = 0.98, RMSEA = 0.068; Figure 1). Customer participation affected brand satisfaction positively ($\beta = 0.27$), and brand satisfaction affected brand loyalty positively ($\beta = 0.85$). Customer participation had no significant direct effect on brand loyalty. These results supported $H1$.

Possible different effects of customer participation were controlled by introducing brand as a control variable (covariate) in the analysis to test direct effects on brand satisfaction and loyalty. All models yielded insignificant results, except the model for one brand ($\chi^2/df = 4.37$, CFI = 0.98, RMSEA = 0.065), which showed that brand negatively affected brand satisfaction ($\beta = -0.11$). Comparison of results from this model and the original model showed that the effect of customer participation on brand satisfaction remained positive, although marginally lower ($\beta = 0.26$), and the effects of customer participation and brand satisfaction on brand loyalty were unchanged.

Testing for a mediating effect

The assumed mediating effect of brand satisfaction on the relationship between customer participation and brand loyalty was further examined using a bootstrap resampling method. Bootstrapping is not bound by the assumptions of normal theoretical approaches (e.g. the Sobel test), and thus characterizes indirect effects more accurately (Hayes and Preacher, 2013). An indirect effect is considered to be significant when the bootstrap confidence interval (CI) excludes zero. In the present study, a 95 per cent CI for the indirect effect was obtained using 5,000 bootstrap re-samples. The results confirmed that brand satisfaction significantly mediated the relationship between customer participation and brand loyalty (95 per cent CI = 0.15-0.25).

Incorporation of customer brand engagement in social media

To test H2 with data from customers who engaged with the brands in social media, CBE was incorporated as a predictor variable. Composite (aggregated average) scores were used for the multidimensional CBE concept, following Brakus et al. (2009). Total, rather than individual dimensional, effects of these variables were thus examined. The SEM model showed acceptable fit ($\chi^2/df = 1.63$, CFI = 0.98, RMSEA = 0.066; Figure 2).

In this subsample, CBE positively affected customer participation ($\beta = 0.60$), which positively affected brand satisfaction ($\beta = 0.49$). These effects were substantially greater than observed for customers with no social media

brand interaction. The effect of brand satisfaction on brand loyalty ($\beta = 0.85$) was similar. These results support H2. To clarify the theorized relationship between CBE and customer participation, an alternative model with customer participation serving as the predictor variable and CBE as the proximal mediator was tested. Although this model showed acceptable fit ($\chi^2/df = 2.05$, CFI = 0.98, RMSEA = 0.085) and a significant effect of customer participation on CBE ($\beta = 0.52$), it was not as strong as the original model used to test H2.

Study 2

This longitudinal study was conducted to test H1. Longitudinal analysis allows one to account for potential common-method variance (Bijleveld et al., 1998; Griffith et al., 2006; Rindfleisch et al., 2008; Ployhart and Vandenberg, 2011). It also shows auto-correlation effects, reducing between-variable effects while strengthening the validity of effect patterns (Menard, 1991). Thus, Study 2 was expected to provide similar, but weaker, support for H1 compared with Study 1. The effect of customer participation subsequent to brand satisfaction was assessed, with brand loyalty serving as the outcome (Jap and Anderson, 2004) and with the incorporation of historical (auto-correlational) effects.

Design and sample

Norstat collected data from the same insurance customers over an 18-month period in autumn 2011 (T₀), spring 2012 (T₁, data set used in Study 1), and spring 2013 (T₂) using the methodology and measures described for Study 1. The three-wave structure was selected according to the recommended minimum number of repeated measures (Chan, 1998 in Ployhart and Vandenberg, 2011), and to ensure validity and avoid variance (Vandenberg, 2002). The unequal intervals between surveys were planned, together with the insurance firms' marketing managers, to ensure that they would appropriately reflect changes (Gollob and Reichardt, 1991) and to capture the predictive effects of customer participation and brand satisfaction on loyalty, as described for mediational models (Cole and Maxwell, 2003).

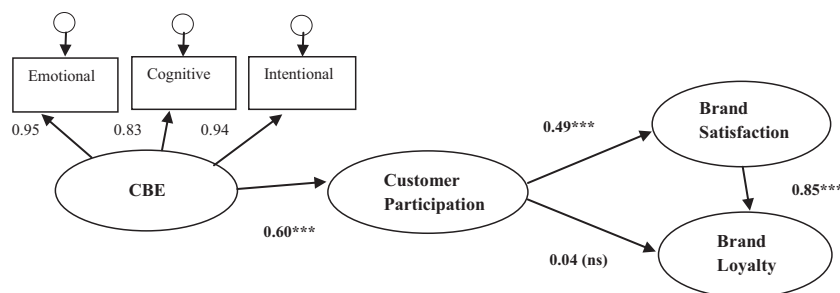
Respondents to the first survey were asked by email to complete additional surveys at T₁ and T₂. To account for a dropout rate of up to 75 per cent between T₀ and T₂, a much

Figure 1 H1 test results from the cross-sectional study



Notes: All coefficient values are standardized. Significance level: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; $N = 809$; $\chi^2/df = 4.70$; CFI = 0.98; RMSEA = 0.068

Figure 2 H2 test results from the cross-sectional study



Notes: All coefficient values are standardized; the concept of CBE is presented by dimensions. Significance level: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; $N = 145$; $\chi^2/df = 1.63$; CFI = 0.98; RMSEA = 0.066

larger sample than required was recruited at T_0 (Ployhart and Vandenberg, 2011). The numbers of participants at T_0 , T_1 and T_2 were 1,389, 964 and 1,172, respectively. The study sample comprised 376 respondents who completed surveys at all timepoints.

Following Cole and Maxwell (2003), the effects of the independent variable (customer participation) at T_0 were considered to predict the mediating variable (brand satisfaction) at T_1 . In turn, the mediating variable was thought to predict the dependent variable (brand loyalty) at T_2 . The potentially confounding auto-correlational effects of all variables were controlled to avoid spuriously inflated estimates of the causal path of interest (Figure 3) (Cole and Maxwell, 2003; Orth *et al.*, 2009). For example, Chandler and Lusch (2014) characterize temporal connections as current connections stemming from past customer participation and giving rise to future participation.

In contrast to cross-sectional research, in which construct residuals are assumed to be uncorrelated and normally distributed, residual correlation was allowed (Ployhart and Vandenberg, 2011). The causal structure (the degree to which one set of variables produces change in another set) was assumed to remain unchanged over time (Bijleveld *et al.*, 1998). The observed invariance (equality of standardized factor loadings of like items across timepoints; Appendix) indicated that the items retained the same meanings for participants throughout the study period (Ployhart and Vandenberg, 2011).

Figure 3 An illustrative path diagram of a longitudinal model of mediation

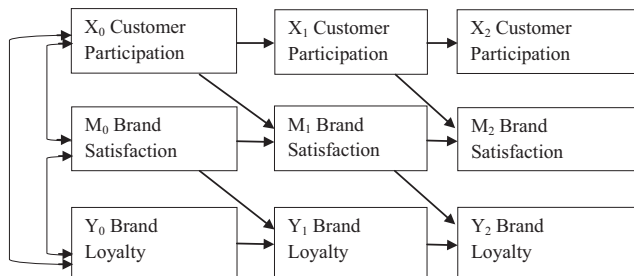


Table III *H1* test results from the longitudinal study ($N = 376$)

SEM analysis in Mplus	Results	Acceptance level
Model results		
CFI	0.94	Acceptable fit >0.95
TLI	0.93	>0.95
RMSEA	0.065	<0.080
BIC	39,295.219	As low as possible
Test results		
Customer participation on brand satisfaction	-0.009 (ns)	
Customer participation on brand loyalty	0.032 (ns)	
Brand satisfaction on brand loyalty	0.17***	
Autocorrelation effects		
Customer participation on customer participation	0.56***	
Brand satisfaction on brand satisfaction	0.70***	
Brand loyalty on brand loyalty	0.50***	

Notes: CFI = comparative fit index; TLI = Tucker–Lewis Index; RMSEA = root-mean-square-error of approximation; BIC = Bayesian information criterion; * $p < 0.10$ (two-sided); ** $p < 0.05$ (two-sided); *** $p < 0.01$ (two-sided)

Analysis and results

Mplus 7.11 software was used to perform SEM of between-variable auto-correlational effects (Muthén and Muthén, 2007), with maximum likelihood estimation. The model showed a good fit (CFI = 0.94, Tucker–Lewis index = 0.93, RMSEA = 0.065, Bayesian information criterion = 39,295.219). Customer participation at T_0 had a non-significant negative effect on brand satisfaction at T_1 and T_2 ($\beta = -0.009$) and a non-significant positive effect on brand loyalty at T_2 ($\beta = 0.03$). Brand satisfaction at T_0 and T_1 had a significant positive effect on brand loyalty at T_1 and T_2 ($\beta = 0.17$). All auto-correlational relationships were significantly positive (customer participation, $\beta = 0.56$; brand satisfaction, $\beta = 0.70$; brand loyalty, $\beta = 0.50$; Table III). These results do not support *H1* or the short-term results from Study 1.

Discussion, implications and directions for future research

This paper contributes to the marketing literature by shedding light on the short- and long-term effects of customer participation on brand loyalty (through brand satisfaction) from a value co-creation perspective. It documents the short-term effects of CBE on these variables in a social media context. The findings support the disconfirmation-of-expectation theory, which predicts that satisfaction is the primary route to loyalty (Anderson and Sullivan, 1993; Bloemer and Kasper, 1995; Oliver, 1999), in the short and long terms.

Study 1 documented substantial positive effects of customer participation on brand loyalty through brand satisfaction. CBE was an important driver of customer participation and enhanced the positive effects of customer participation on brand satisfaction, although these results were derived from a limited subsample and survey data leaned toward correlation. When customers engage emotionally, cognitively and/or intentionally in certain brand activities and content on a brand’s Facebook page, they show more interest in participating with the brand. The alternative model tested in Study 1 supported this positive effect of CBE on customer

participation, suggesting reciprocal effects between these variables in social media contexts. The greater effect of customer participation on brand satisfaction among customers engaging with brands in social media is a promising result for service firms that are using social media strategically as a marketing and service channel.

In contradiction of cross-sectional findings (Auh *et al.*, 2007; Hosseini, 2013; Flores and Vasquez-Parraga, 2015), the effects of customer participation were not significant in Study 2. These results provide a useful contribution to the marketing literature, although customer participation produces positive short-term outcomes, it does not appear to result in long-term brand satisfaction or loyalty. Observed auto-correlational effects showed that participating customers are likely to participate again later, which is promising for service firms.

These findings may be explained by the fluctuating nature of customer participation with brands and in brand activities (as with CBE); co-producing customers may forget such participation soon after completing it. Another explanation could be that service firms do not plan the foundation for customer participation well, consequently providing random and unsystemized handling of feedback over time. If customers see no service improvement based on their input, then their satisfaction and loyalty will probably remain unchanged.

Other explanations may be plausible. For example, the effects of customer participation on satisfaction may depend on customers' expectations of outcomes. Bendapudi and Leone (2003) found that customers who participated in production with a firm were less satisfied with the firm than were those who chose not to participate when outcomes were better than expected and more satisfied when outcomes were worse than expected. Thus, the "outcome as expected" condition may be an "invisible" factor that should be incorporated in future empirical studies of customer participation effects on brand satisfaction. Customers allocate credit for positive outcomes or blame for negative outcomes to themselves and the firm, which may affect satisfaction. The absence of a longitudinal effect of customer participation may also be due to the lack of moderating (e.g. "easy" versus "difficult" design example) and/or mediating (e.g. self-congruity) variables (Chang *et al.*, 2009).

Managerial implications

For service marketers, these study findings have important implications with regard to brand-building strategies. Brand satisfaction remains key to brand loyalty in the short and long terms. Service firm customers' co-creative activities, such as innovation and service improvement initiatives, provide service marketers with positive short-term brand satisfaction and brand loyalty effects. Service firms can encourage CBE by using social media platforms, such as Facebook brand pages, which will positively affect customer participation, with subsequent positive short-term effects on brand satisfaction. Thus, for short-term purposes, customer participation should be encouraged through CBE in social media contexts, in relation to activities beyond exchange.

Service marketers should not have overly high expectations for long-lasting effects of customer participation. Customers willing to participate in brand relationships (e.g. expressing their needs, suggesting service improvements) will not necessarily become more satisfied and/or loyal over the long term. An interesting

practical insight gained from Study 2 is that managerial creativity might be necessary for engagement and participation effects to stand the test of time.

Marketers must take the consequences of customer participation seriously, strategically developing systems and (online and offline) network platforms that recognize customers' concerns and interests, and facilitate their engagement and participation. They must systemize changes based on customer input so that customers can benefit personally. These measures may enhance short- and long-term brand satisfaction and loyalty.

The study results are particularly promising for insurance firms wishing to use social media for CBE and customer participation purposes. However, for insurance firms struggling with high annual turnover rates and failing loyalty, the absence of long-term effects is not promising. Like other service firms, insurance firms must form strategies for the development of platforms and networks that facilitate customer participation, in the hope that brand loyalty will become a positive long-term effect.

Limitations and future research possibilities

The use of correlational survey data in Study 1 precluded causality prediction; future studies should examine customer participation effects using small-scale experiments in an online panel context. Given the small subsample of customers who used social media to relate to the brands, the findings cannot be considered to provide definitive evidence of CBE effects. Larger and more diverse samples are needed in future studies. The convergent validity of the customer participation concept should also be addressed by improving relevant survey items.

CBE effects were examined holistically in this research. Dimension effects should be examined separately in future to gain more detailed and sophisticated knowledge. Following research tradition, CBE was measured using positively valenced scales (Brakus *et al.*, 2009; Hollebeek *et al.*, 2014). In practice, however, customers can become negatively engaged (e.g. in social media) (Laroche *et al.*, 2012; Hollebeek and Chen, 2014). Thus, researchers should seek to assess valence more accurately (e.g. by evaluating positively and negatively worded versions of scales), as recommended by Brakus *et al.* (2009).

In this research, brand loyalty was operationalized as customers' brand-related intended behavior (i.e. an attitudinal concept). It was not defined based on repeat purchase patterns. By considering brand loyalty as a behavioral construct, panel data on registered repeat-purchase behavior could have been used to assess repeat-purchase loyalty (e.g. penetration, purchase frequency, market share, repeat buying) and analyzed using Dirichlet models/negative binominal distribution (Ehrenberg *et al.*, 2004; Sharp *et al.*, 2012). Future studies could benefit from the conceptualization of brand loyalty as a hybrid attitudinal/behavioral construct, enabling the analysis of attitudinal and repeat-purchase loyalty.

In assessments of relationship variables, including the present longitudinal study, optimal timepoints for data collection are difficult to determine. The 18-month period may have been insufficient for insurance brand loyalty analysis. However, with 17 per cent of customers switching insurance providers annually, much can happen in this period. Regardless, longitudinal data collection is probably more valuable in situations involving daily observation and data recording, rather than the administration of

self-reported questionnaires at one-year intervals. These limitations make it difficult to favor the Study 2 results over those of Study 1; rather, they should be considered as supplementary.

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Appendix

Table AI Concepts and measures

Concepts	Dimensions and measures	Item loading T ₀	Item loading T ₁	Item loading T ₂
Customer participation	I often express my personal needs to (brand)	0.84	0.85	0.85
	I often suggest how (brand) can improve their services	0.90	0.92	0.92
	I participate in decisions about how (brand) offer its services	0.90	0.91	0.90
	I often find solutions of my problems together with (brand)	0.83	0.81	0.85
CBE	<i>Emotional engagement</i>			
	I am enthusiastic in relation to (brand) at (brand)'s Facebook page		0.93	
	I feel energetic in contact with (brand) at its Facebook page		0.94	
	I feel positive about (brand) at its Facebook page		0.86	
	<i>Cognitive engagement</i>			
	At (brand)'s Facebook page, my mind is very focused on (brand)		0.78	
	At (brand)'s Facebook page, I focus a great deal of attention to (brand)		0.80	
	At (brand)'s Facebook page, I become absorbed by (brand)		0.91	
	<i>Intentional engagement</i>			
	I exert my full effort in supporting (brand) at its Facebook page		0.78	
I am very active in relation to (brand) at its Facebook page		0.92		
I try my hardest to perform well on behalf of (brand) at its Facebook page		0.92		
Brand satisfaction	Overall, I am satisfied with (brand)	0.91	0.90	0.92
	Being a customer of (brand) has been a good choice for me	0.92	0.91	0.91
	(brand) has lived up to my expectations	0.91	0.92	0.94
	(brand) is concerned with what solutions that is the best for me	0.87	0.80	0.79
	(brand) offers me good solutions	0.93	0.91	0.92
Brand loyalty	I intend to stay loyal to (brand) in the future	0.90	0.89	0.89
	I intend to stay on as a customer of (brand) for the next three years	0.87	0.84	0.88
	I intend to recommend (brand) to other people	0.87	0.84	0.82
	If I had to choose again I would still choose (brand)	0.92	0.89	0.89

Notes: Item wording and standardized coefficients from the confirmatory factor analysis (CFA); loadings are based on the customer sample in the longitudinal study ($N = 376$) for customer participation, brand satisfaction and brand loyalty; for CBE, the factor loadings are based on the cross-sectional study conducted at T₁ ($N = 145$)

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