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Customer Satisfaction and Engagement in Co-Creation of Value

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Abstract

Purpose – An examination of the existing literature found that no research had been performed examining customer satisfaction as an antecedent to co-creation of value. This is important because organizations have difficulty engaging customers in co-creation of value, which can increase loyalty, trust, innovation, and competitive advantage. The purpose of this study was to examine the relationship between customer satisfaction and its constructs, and engagement in co-creation of value.

Design - Six hypotheses were developed regarding the relationship between customer satisfaction, each of its components, and customer engagement in co-creation of value. A survey was distributed to 256 adults who lived in the United States and had recently experienced hotel services. Data were examined using Pearson correlations and ordinary least squares multiple regressions.

Findings - The results indicated overall customer satisfaction, reliability, assurance, tangibles, empathy, and responsiveness each had a significant and positive relationship with customer engagement in co-creation of value.

Practical Implications – Due to the benefits that can be developed through creating value with customers, it is important for organizations to encourage customers to engage. The results of this study can be used to build better strategies for customer participation in co-creation of value with organizations.

Originality/value – Prior to this study, no research had been performed that examined customer satisfaction as an antecedent to co-creation of value. This research fills that gap and develops customer satisfaction as a factor towards engaging customers and developing value.

Keywords – Co-creation of value, customer satisfaction, hotel industry

Paper Type – Research Paper

Introduction

It is imperative for hotels, as well as other organizations, to find methods to create competitive advantages in order to perform well and survive (Dustin *et al.*, 2014). Creating a competitive advantage and sustaining it is challenging, and requires innovation of products, services, processes, and strategies (Hana, 2013). One method that has been shown to help develop competitive advantages is the use of co-creation of value (CCV). CCV is the collaboration between an organization and its customers to produce value (Handrich & Heidenreich, 2013). An example is a hotel representative working with a customer to develop a new service that improves the hotel experience. CCV increases competitive advantage through improved customer loyalty and satisfaction, better relationships, and innovations (Ophof, 2013). Because successful implementation of CCV can lead to many benefits, it is important for organizations to engage customers in the process. Consumers have been slow to respond to attempts to engage them in the CCV process, indicating a need to examine the factors that encourage participation (Handrich & Heidenreich, 2013).

There is sparse research about engagement factors that encourage initial (meaning the first collaboration, rather than repeated engagements) participation in CCV (Fernandes & Remelhe, 2016; Hunt *et al.*, 2012). Most research concentrates on benefits produced from CCV rather than antecedents to engagement (Frow *et al.*, 2015; Haumann *et al.*, 2015; Ind *et al.*, 2013; Yen, 2015). Several researchers call for an examination of the antecedents to engagement in CCV (Chathoth *et al.*, 2016; Fernandes & Remelhe, 2016; Lazarus *et al.*, 2014; Morosan, 2015) and customer satisfaction is a factor that is specifically mentioned (Banyte *et al.*, 2014; Zhang *et al.*, 2015). An examination of any relationship between customer satisfaction and initial customer engagement in CCV was performed in this study. It is believed to be the first study developed to examine this relationship and as such has added to the current body of knowledge.

Review of Literature

The aim of this study was to contribute to the existing knowledge about factors that encourage individuals to engage in CCV. The specific factor examined was customer satisfaction. It was hoped that by examining the relationship between customer satisfaction and initial customer engagement in CCV, organizations could develop better strategies to encourage their customers to participate. Because participation in CCV is minimal, the knowledge contributed by this study is of high value. This section examines the existing research involving CCV engagement.

Value

Scholars have presented several definitions of value in previous literature. Prebensen, Vitterso, and Dahl (2013) stated that value has the dimensions of comparison between items, individualization by people, and is situationally specific. An item's value depends on the item itself and the comparable choices, the wants of the persons involved, and the need at the time. The levels of these dimensions change over time as choices, tastes, and situations change. Elliot (2012) determined value to be defined as "benefits eventually obtained by customers through their involvement and assessment when using or consuming product-services" (p. 1). Pinho, Beirão, Patrício, and Fisk (2014) built upon this definition by stating that customer experience dictates value determination rather

than the purchase itself. Mobley (2015) mentions that value is dependent on consumer judgment and their perception of the product or service upon purchase and use. Grönroos and Voima (2013) explain value as a process that makes the consumer better in some manner. That is, the consumer is left improved through the product or service. The various definitions are similar in that value is described as providing a benefit to the consumer, and that benefit is determined by the consumer.

The recent literature on value, as it relates to CCV, centers around value-in-use. Value-in-use refers to the value a consumer perceives during consumption as well as the process of CCV (Elliot, 2012). This is in contrast to value-in-exchange or value-in-offering, where a supplier attempts to assign a value to offerings hoping the customer will agree. The production of a product or service has potential value to the consumer, but may or may not provide the actual value (Grönroos & Voima, 2013). Grönroos and Ravald (2009) stated that value-in-use is more beneficial to both consumers and suppliers than value-in-exchange. This is because value-in-exchange only carries the potential for value, where value-in-use determines the actual value. The customer determines the level of value in value-in-use, and this value judgment varies by consumer experience (Yngfalk, 2013). Value-in-use being the predominant and most important source of value further supports the definition of value as a benefit to the customer based on the customer's judgment. This is the definition accepted for this research.

Co-creation of value (CCV)

The term *co-creation of value* (CCV) was introduced by Prahalad and Ramaswamy (2004). About the same time, Vargo and Lusch (2004) introduced the service-dominant logic, which encompasses the concept of CCV. The main idea in the service-dominant logic is that service defines all exchange whether the item is a good or a service. It describes an entirely customer-centric approach to marketing based on service expectations. Another important concept in the service-dominant logic is that value creation always includes the customer as co-creator and that competitive advantage can be a result. The service-dominant logic describes CCV as an important process in the shift away from selling features of goods to the quality of service provided. The concept of CCV involves customers collaborating with suppliers to determine and create value for either or both parties (Mobley, 2015). CCV requires working together to utilize shared experiences, shared knowledge, and shared problem resolution to produce value (Paswan, D'Souza, & Rajamma, 2014; Vega-Vazquez, Revilla-Camacho, & Cossío-Silva, 2013).

Most researchers agree that CCV includes the process of activities that customers and suppliers perform to create value together rather than just the outcome (Jürgens & Leuenberger, 2014). Constantinides et al. (2014) stated that CCV is simply any shared creativity between persons and that it includes the customer engagement process. A process definition is also favored by Galvagno and Dalli (2014), where the entire process of collaboration for the purpose of value creation is CCV. Elliot (2012) stated that CCV is the collaboration of customers and suppliers for the purpose of creating value. This definition includes both the results achieved and the process itself through collaboration. The accepted definition for this study is that of Nysveen and Pedersen (2014), who recognized the commonality among definitions and stated that CCV is "a collaborative or joint activity including both producers and consumers for the purpose of creating value" (p. 811).

Engagement in CCV

Fernandes and Remelhe (2016) examined factors that encourage individuals to participate in CCV with organizations. They found that intrinsic factors, such as experiences, curiosity, and enjoyment as well as knowledge motivators had the greatest relationship with engagement in CCV. Financial motivators were found to have the least relationship to engagement. Banyte et al. (2014) examined the relationship between initial engagement in CCV and motivators involving communication correctness, competence, and commitment. They found that communication had a strong relationship with willingness to engage in CCV while the other factors examined exhibited less of a relationship. Füller (2010) examined intrinsic motivators such as curiosity and extrinsic motivators such as financial rewards towards engagement in CCV. Intangible rewards were found to be more motivational than financial rewards in agreement with research by Fernandes and Remelhe (2016).

Roberts et al. (2014) found that four overall motivators caused individuals to participate in CCV through a qualitative study. These motivators were enjoyment and interest, product improvement, love of the product, and social status within the group. Jürgens and Leuenberger (2014) qualitatively examined engagement factors of CCV and, in agreement with other studies, found both intrinsic and extrinsic factors that motivate engagement. Intrinsic motivators included enjoyment and curiosity, while extrinsic motivators included financial gain and social recognition. Jaakkola and Alexander (2014) performed a case study to determine engagement factors in CCV and found that individuals became motivated to engage in CCV if they felt a drive to improve the organization's products or services. Ophof (2013) examined six motivating factors for individuals to engage in CCV (financial, learning, hedonic, personal, social, and psychological). Learning, hedonic, and personal factors were determined to have the greatest relationship with engagement in CCV.

Ind et al. (2013) examined the process by which individuals enter CCV and found that greater engagement occurs when trust is built within the group. Constantinides et al. (2014) quantitatively studied learning, social integrative, personal integrative, hedonic, and financial factors to determine their relationship with engagement in CCV. It was determined that an opportunity to improve the product, satisfaction with the process and results, community benefits, and enjoyment had the highest level of relationship with engagement in CCV.

Research related to factors that encourage engagement in CCV within the hotel industry is sparse. Zhang et al. (2015) researched motivators of customer engagement in CCV within the hospitality industry. The examination consisted of a literature review which was used to create a conceptual model for determining engagement motivators. The authors determined that there are three customer motivators for CCV engagement: brand, community, and financial reward. Chathoth et al. (2016) conducted a literature review of CCV research with the hospitality industry. They found that most of the research concentrated on the benefits derived from participation and suggested future research on the subject of methods to engage customers in CCV specifically for the hospitality industry. Morosan (2015) examined hotel customers' willingness to participate in CCV and stated that there is a dearth of empirical research within the hotel industry about factors that encourage participation in CCV.

The factors of engagement previously studied is not complete. The need for this study is specifically supported by Banyte *et al.* (2014) and Zhang *et al.* (2015) who mention customer satisfaction as a factor in initial CCV engagement that should be studied. This study answers that call, in part, by examining customer satisfaction as an antecedent to initial engagement in CCV.

Customer satisfaction

Definitions for customer satisfaction have been presented for decades in the academic literature, but agreement upon a single definition has not occurred (Vega-Vazquez *et al.*, 2013). There are two prevailing views of the concept of customer satisfaction (Prabhakar & Ram, 2013). One view is results based, where customer satisfaction is determined by the customer only after the use of the product or service. This view is based on the feeling the customer has towards the product or service based on meeting the customer's specific intended needs. The other view of customer satisfaction is process based. In this case, the customer makes a comparison between the expected performance of the product or service and the realized performance. The level of customer satisfaction in the process based view is evaluated by the difference between the expectation and realized results. A higher customer satisfaction would mean a greater positive difference between the customer's expectations and realized results. The process-based definition of customer satisfaction was adopted for this research, where customer satisfaction is the feeling as determined by the customer toward the product and organization based on the difference between expectations and realized results (Prabhakar & Ram, 2013; Yen, 2015).

Customer satisfaction and CCV

Research describing the relationship between customer satisfaction and CCV is dominated by evaluation of customer satisfaction as an outcome of the results of CCV. Mathis, Kim, Uysal, Sirgy, and Prebensend (2015) performed a quantitative study and found that individuals who CCV by collaborating with travel professionals had greater customer satisfaction with the vacation experience than those that did not. Hunt *et al.* (2012) determined that participation in CCV with an organization has a positive effect on the customers' satisfaction in both service and product-driven organizations. Grisseemann and Stokburger-Sauer (2012) determined that the degree of CCV as a process, rather than as an outcome, had a positive relationship with the level of customer satisfaction. Customer satisfaction and company performance were both found to be positively affected, as the degree of CCV increased. Flores (2012) examined CCV outcomes and determined that individuals who co-created value with the company had significantly higher levels of customer satisfaction. Vega-Vazquez *et al.* (2013) determined that there is a statistically significant positive relationship between CCV and customer satisfaction as an outcome. Banyte *et al.* (2014) examined engagement factors and outcomes and determined that a result from participation in CCV was increased customer satisfaction. No research could be found that examined the relationship between customer satisfaction and engagement in CCV where customer satisfaction was an antecedent to engagement. All of the existing research examines customer satisfaction as an outcome of CCV. This study examines the relationship where customer satisfaction is a factor in engaging customers in CCV.

Research Questions and Hypotheses

It was not known if, or to what degree, a relationship existed between customer satisfaction or its components (the independent variables), and initial customer engagement in CCV (the dependent variable) in the hotel industry (Banyte *et al.*, 2014; Zhang *et al.*, 2015). The main research question addressed this by asking; To what degree is there a relationship between customer satisfaction (based on service quality) and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States? Secondly, it was asked; To what degree is there a relationship between each component of customer satisfaction (reliability, assurance, tangibles, empathy, and responsiveness) and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States? The following hypotheses were developed to address the research questions:

- H1: There is a statistically significant relationship between overall customer satisfaction (comprised of reliability, assurance, tangibles, empathy, and responsiveness) and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.
- H2: There is a statistically significant relationship between the overall customer satisfaction component of reliability and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.
- H3: There is a statistically significant relationship between the overall customer satisfaction component of assurance and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.
- H4: There is a statistically significant relationship between the overall customer satisfaction component of tangibles and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.
- H5: There is a statistically significant relationship between the overall customer satisfaction component of empathy and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.
- H6: There is a statistically significant relationship between the overall customer satisfaction component of responsiveness and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

Method

Population and Sample Selection

The targeted population in this study was adult residents of the United States who had stayed in a hotel during the six months prior to responding to the survey. Hotel guests were chosen for this study because the instrument requires a service industry and previous research showed a need for examination of engagement factors within the industry. The six month restriction was used to ensure that participants all had a recent memory of a hotel stay. The largest sample size estimate generated to meet a 95% power

was 189, associated with a series of five Pearson correlations between customer engagement in CCV and the five subscale components of customer satisfaction. A sample of 200 was targeted and 256 collected. The study was administered by Qualtrics, a data analytics organization, using a database of online survey panels. The survey panels consist of individuals who have been previously screened so that participants can be targeted properly and quickly. Invitations to participate in the survey were sent randomly within the database to adult individuals who met the target requirements. Participants were asked their gender, race/ethnicity, age, and the reason for their hotel stay, prior to being presented with the instruments. The sample consisted of 157 females (63%) and 92 males (37%). There were 33 African Americans (13.3%), 11 Asians (4.4%), 196 Caucasians (78.7%), 2 Pacific Islanders (0.8%), and six multi-racial/multi-ethnic (2.4%) participants in the sample (one failed to respond). 22 participants were lodged for business reasons, 184 for pleasure, and 40 stayed for both business and pleasure (three failed to respond). The mean age of the participants was $M = 41.59$ ($SD = 14.44$). Results of a post hoc power analysis estimated all analyses in excess of 98%.

Measures

The independent variables in this study are customer satisfaction (based on service quality) and its components of reliability, assurance, tangibles, empathy, and responsiveness. Data for these variables were collected through the use of the SERVQUAL instrument developed by Parasuraman *et al.* (1991). Reliability, assurance, tangibles, empathy, and responsiveness are each subscales of the instrument and subscale scores are weighted to provide a measure of customer satisfaction. The SERVQUAL instrument measures customer satisfaction with service quality by determining the variation between customer expectations and actual perceived quality of service. The instrument aligns well with the accepted definition of customer satisfaction being the gap between expectations and actual experiences. The instrument has been used in many studies to determine customer satisfaction (Abdul *et al.*, 2014; Bourne, 2016; Peprah & Atarah, 2014). The SERVQUAL instrument has been thoroughly tested for face, convergent, discriminant, and predictive validity (Parasuraman *et al.*, 1991). It has also been shown to be reliable through the use of Cronbach's alpha.

The dependent variable in this study is customer engagement in CCV. Data for this variable were collected using the customer engagement behavior (CEB) instrument developed by Yu *et al.* (2015). The instrument was specifically created to measure customer engagement as it relates to CCV. The instrument has been tested for reliability as well as convergent, discriminant, nomological, and bias validity and found to be robust. The two instruments were presented to the participant within a single online survey.

Data Preparation

SERVQUAL subscale and total scores and CEB scores were all evaluated for normality through skewness and kurtosis calculations, and by examining their frequency histograms and normal Q-Q plots. Table 1 provides descriptive statistics with z -tests of the statistical significance of skewness and kurtosis (Meyers *et al.*, 2013). Values of z were calculated by dividing the skewness and kurtosis measures by their standard errors, and these z -scores were evaluated for significance using a two-tail test and stringent level of

significance ($z = \pm 3.30, p < .001$). Distributions of SERVQUAL subscales and total scores as well as CEB total scores all showed some signs of negative skewness or leptokurtosis. The Q-Q plots for these variables also showed visible deviations from normality. All distributions were found to be significantly skewed, and several were also significantly leptokurtic.

Table 1

Descriptive Statistics for SERVQUAL Scores and CEB Scores with z-Score Tests of the Significance of Skewness and Kurtosis

Variable	N	Min	Max	M	SD	Skewness (z)	Kurtosis (z)
SERVQUAL							
Tangibles	243	-3.25	1.75	-0.30	0.80	-0.68 (-4.36)	0.86 (2.77)
Reliability	238	-4.00	1.00	-0.52	0.84	-1.00 (-6.35)	1.26 (4.00)
Responsiveness	237	-4.25	1.75	-0.43	0.93	-1.15 (-7.28)	2.01 (6.37)
Assurance	244	-3.75	1.75	-0.42	0.89	-1.12 (-7.65)	2.38 (7.66)
Empathy	242	-4.00	1.80	-0.47	0.94	-1.20 (-7.70)	1.78 (5.66)
Total	231	-2.85	0.98	-0.41	0.70	-1.16 (-7.26)	1.30 (4.07)
CEB Total	249	1.13	6.88	4.81	1.19	-0.68 (-4.38)	0.05 (0.17)

Note. Values in parentheses are values of z calculated by dividing skewness and kurtosis measures by their standard error values. Values exceeding ± 3.30 are significant at the .001 level (2-tail).

A log₁₀ transformation was used to reduce skewness and kurtosis and normalize the distributions and was then re-reflected. The re-reflected log₁₀ transformed values are easily interpreted by remembering that lower values indicate less of the item being measured and higher values indicate an increase in the item being measured—just as is true with the raw values. Normal Q-Q plots were also inspected to assess the normality of the distributions. Table 2 presents descriptive statistics for the variables, along with skewness and kurtosis results that were used in evaluating distribution normality. That table also provides the results of z -tests of the statistical significance of skewness and kurtosis using a stringent, two-tail test of significance ($z = \pm 3.30, p < .001$). Although four of the log₁₀ transformed SERVQUAL subscales still showed significant leptokurtosis, none of the transformed variables were significantly skewed. It was determined that all of the re-reflected log₁₀ transformed distributions provided a reasonably good approximation to the normal curve. All other tests of the assumptions for the analyses were performed and satisfied including elimination of outliers, linearity, and homoscedasticity.

Table 2
Descriptive Statistics for SERVQUAL Scores and CEB Scores with z-Score Tests of the Significance of Skewness and Kurtosis

Variable	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>	Skewness (<i>z</i>)	Kurtosis (<i>z</i>)
SERVQUAL							
Tangibles	243	-3.25	1.75	0.30	0.80-0.68	(-4.36)	0.86 (2.77)
Reliability	238	-4.00	1.00	-0.52	0.84-1.00	(-6.35)	1.26 (4.00)
Responsiveness	237	-4.25	1.75	-0.43	0.93-1.15	(-7.28)	2.01 (6.37)
Assurance	244	-3.75	1.75	-0.42	0.89-1.12	(-7.65)	2.38 (7.66)
Empathy	242	-4.00	1.80	-0.47	0.94-1.20	(-7.70)	1.78 (5.66)
Total	231	-2.85	0.98	-0.41	0.70-1.16	(-7.26)	1.30 (4.07)
CEB Total	249	1.136	884.811	1.19	-0.68	(-4.38)	0.05 (0.17)

Note. Values in parentheses are values of *z* calculated by dividing skewness and kurtosis measures by their standard error values. Values exceeding ± 3.30 are significant at the .001 level (2-tail).

Data Analysis Procedures

Pearson correlations and ordinary least squares multiple regression analysis were used in this study. To address H1, a Pearson correlation between SERVQUAL total scores and CEB total scores was assessed for statistical significance using the .05 level of significance and a two-tailed test. H1 was also addressed using an ordinary least squares multiple regression analysis. The value of R^2 from this analysis measured the proportion of variance in CEB total scores (the dependent variable) that was explained by an optimally weighted linear combination of the five SERVQUAL subscales (the independent variables) and R^2 was tested for significance at the .05 level of significance with an *F* test.

To address H2 through H6, the same two statistical methods were used, with only the variables changing from one analysis to the next. A Pearson correlation was used to evaluate the relationship between overall customer engagement in CCV (the dependent variable, measured by CEB total scores) and each of the five components of customer satisfaction based on service quality (the independent variables, measured by the subscales of the SERVQUAL instrument). Five additional Pearson correlations were calculated and all used the same dependent variable (CEB total scores). The analyses differed only in that different SERVQUAL subscales served as independent variables in each analysis. To maintain an acceptable Type I error rate (.05) in the series of five tests, each correlation was tested for significance using the .01 level of significance and a two-tail test. H2 through H6 were also addressed by using ordinary least squares multiple regression to test the significance of the regression coefficients in which CEB total scores served as the dependent variable and the five subscales of the SERVQUAL served as independent variables. To maintain an acceptable Type I error rate (.05) in the series of five tests, each regression coefficient was tested using a two-tail *t*-test evaluated for significance at the .01 level. These tests of the significance of the regression coefficients assessed the degree to which each of the SERVQUAL subscales explained significant

unique variance in the CEB, variance that was not explained by the other SERVQUAL subscales.

Data reliability and validity

The data were examined for reliability and validity using Chronbach's alpha coefficient values for SERVQUAL subscales and total scores and CEB total scores. All alpha coefficients were .80 or stronger, indicating the internal consistency reliability of the measures was good to excellent (Heale & Twycross, 2015).

Results

Hypothesis 1

H1 states, there is a statistically significant relationship between overall customer satisfaction (comprised of reliability, assurance, tangibles, empathy, and responsiveness) and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

A Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL total scores (measuring overall customer satisfaction) was found to be statistically significant, $r(229) = .409, p < .001$ (two-tail). The correlation was of medium strength as determined by Cohen's (1988) standards, with 16.7% of the variance in customer engagement in CCV explained by overall customer satisfaction. The hypothesis was accepted.

H1 was also addressed using an ordinary least squares multiple regression analysis in which CEB total scores served as the dependent variable and the five SERVQUAL subscales served as independent variables. The significance of R^2 was the focus of this analysis as that test assessed the significance of the relationship between customer engagement in CCV (CEB total scores) and an optimally weighted combination of the five components of customer satisfaction (SERVQUAL subscales). Following listwise deletion of missing data, there were 230 cases available for the analysis. Table 3 provides correlations among the variables, and Table 4 summarizes the regression model. The result of the F test was significant, $R^2 = .187, F(5, 224) = 10.28, p < .001$. This multivariate relationship was strong, with 18.7% of the variance in customer engagement in CCV explained by an optimally fitted linear combination of the five components of customer satisfaction measured by the SERVQUAL instrument.

Table 3

Pearson Correlations Between CEB Total Scores and SERVQUAL Subscales (Tangibles, Reliability, Responsiveness, Assurance, and Empathy)

		CEB Total	Tangibles	Reliability	Responsive	Assurance	Empathy
CEB Total	Pearson Corr.	1					
	Sig.(2-tailed)						
Tangibles	Pearson Corr.	.193**	1				
	Sig.(2-tailed)	.003					
Reliability	Pearson Corr.	.412**	.398**	1			

	Sig.(2-tailed)	.000	.000				
Responsive	Pearson Corr.	.365**	.317**	.688**	1		
	Sig.(2-tailed)	.000	.000	.000			
Assurance	Pearson Corr.	.324**	.265**	.596**	.697**	1	
	Sig.(2-tailed)	.000	.000	.000	.000		.000
Empathy	Pearson Corr.	.314**	.378**	.558**	.649**	.717**	1
	Sig.(2-tailed)	.000	.000	.000	.000	.000	

Note. $N = 230$ following listwise deletion of cases with missing data. These are correlations analyzed in the OLS multiple regression analysis of CEB total scores on five SERVQUAL subscales using log10 data transformations. Correlations listed in this table differ slightly from corresponding bivariate correlations reported elsewhere in this chapter because listwise deletion used in multiple regression analysis resulted in the loss of data from participants who did not show valid scores on all six variables. **Correlation is significant at or beyond the 0.01 level (2-tailed).

Table 4
Summary of Regression Model in the Ordinary Least Squares Multiple Regression of CEB Scores on SERVQUAL Subscales (Tangibles, Reliability, Responsiveness, Assurance, and Empathy)

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	.502	.150		3.352	.001
	Tangibles	.026	.100	.018	.263	.793
	Reliability	.339	.108	.278	3.146	.002
	Responsiveness	.140	.132	.104	1.060	.290
	Assurance	.061	.139	.043	.438	.662
	Empathy	.077	.133	.055	.584	.560

Note. Significance levels shown are two-tail.

Hypothesis 2

H2 states, there is a statistically significant relationship between the overall customer satisfaction component of reliability and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

The Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL reliability subscale scores (measuring the reliability component of customer satisfaction) was found to be statistically significant, $r(236) = .446, p < .001$ (two-tail). The correlation was moderately strong, with 19.9% of the variance in customer engagement in CCV explained by the reliability component of customer satisfaction. The hypothesis was accepted.

A *t*-test was used to test the significance of the regression weight for the SERVQUAL reliability independent variable in the multiple regression of CEB total scores (measuring

overall customer satisfaction) on the five SERVQUAL subscales (measuring the tangibles, reliability, responsiveness, assurance, and empathy components of customer satisfaction). The regression coefficient for SERVQUAL reliability was statistically significant, $t = 3.15$, $p = .002$ (two-tail), indicating that the reliability component of customer satisfaction explained significant unique variance in customer engagement in CCV (variance that was not explained by the other components of customer satisfaction).

A hierarchical multiple regression analysis was performed to determine the exact percentage of variance in CEB total scores that was uniquely explained by the SERVQUAL reliability subscale. CEB total scores served as the dependent variable in this hierarchical multiple regression analysis. Independent variables entered in block 1 of the analysis were SERVQUAL tangibles, responsiveness, assurance, and empathy. Entered in block 2 was the SERVQUAL reliability subscale. With the four subscales entered in block 1, $R^2 = .151$, $F(4, 225) = 9.98$, $p < .001$. At block 2, with the addition of the SERVQUAL reliability subscale, $R^2 = .187$, indicating that the reliability component of customer satisfaction explained 3.6% of the variance customer engagement in CCV that was not explained by the other components of customer satisfaction. The increase in R^2 from block 1 to block 2 was relatively small, but statistically significant, $F(1, 224) = 9.90$, $p = .002$.

Hypothesis 3

H3 states, there is a statistically significant relationship between the overall customer satisfaction component of reliability and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

The Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL assurance subscale scores (measuring the assurance component of customer satisfaction) was found to be statistically significant, $r(239) = .413$, $p < .001$ (two-tail). The correlation was of medium strength, with 17.1% of the variance in customer engagement in CCV explained by the assurance component of customer satisfaction. The hypothesis was accepted.

A t -test was used to test the significance of the regression weight for the SERVQUAL assurance independent variable in the multiple regression of CEB total scores (measuring overall customer satisfaction) on the five SERVQUAL subscales (measuring the tangibles, reliability, responsiveness, assurance, and empathy components of customer satisfaction). This t -test failed to reach statistical significance, $t = 0.44$, $p = .662$ (two-tail), indicating that the assurance component of customer satisfaction did not explain significant unique variance in customer engagement in CCV.

Hypothesis 4

H4 states, there is a statistically significant relationship between the overall customer satisfaction component of tangibles and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

The Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL tangibles subscale scores (measuring the tangibles component of customer satisfaction) was found to be statistically significant, $r(239) = .227$, $p < .001$ (two-tail). The correlation approached medium strength, with

5.2% of the variance in customer engagement in CCV explained by the tangibles component of customer satisfaction. The hypothesis was accepted.

A *t*-test was used to test the significance of the regression weight for the SERVQUAL tangibles independent variable in the multiple regression of CEB total scores (measuring overall customer satisfaction) on the five SERVQUAL subscales (measuring the tangibles, reliability, responsiveness, assurance, and empathy components of customer satisfaction). This *t*-test failed to reach statistical significance, $t = 0.26$, $p = .793$ (two-tail), indicating that the tangibles component of customer satisfaction did not explain significant unique variance in customer engagement in CCV.

Hypothesis 5

H5 states, there is a statistically significant relationship between the overall customer satisfaction component of empathy and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

The Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL empathy subscale scores (measuring the empathy component of customer satisfaction) was found to be statistically significant, $r(238) = .369$, $p < .001$ (two-tail). The correlation was of medium strength, with 13.6% of the variance in customer engagement in CCV explained by the empathy component of customer satisfaction. The hypothesis was accepted.

A *t*-test was used to test the significance of the regression weight for the SERVQUAL empathy independent variable in the multiple regression of CEB total scores (measuring overall customer satisfaction) on the five SERVQUAL subscales (measuring the tangibles, reliability, responsiveness, assurance, and empathy components of customer satisfaction). This *t*-test failed to reach statistical significance, $t = 0.58$, $p = .560$ (two-tail), indicating that the empathy component of customer satisfaction did not explain significant unique variance in customer engagement in CCV.

Hypothesis 6

H6 states, there is a statistically significant relationship between the overall customer satisfaction component of responsiveness and initial customer engagement in CCV among consumers who have recently stayed in a hotel and live in the United States.

The Pearson correlation between CEB total scores (measuring overall customer engagement in CCV) and SERVQUAL responsiveness subscale scores (measuring the responsiveness component of customer satisfaction) was found to be statistically significant, $r(234) = .399$, $p < .001$ (two-tail). The correlation was of medium strength, with 15.9% of the variance in customer engagement in CCV explained by the responsiveness component of customer satisfaction. The hypothesis was accepted.

A *t*-test was used to test the significance of the regression weight for the SERVQUAL responsiveness independent variable in the multiple regression of CEB total scores (measuring overall customer satisfaction) on the five SERVQUAL subscales (measuring the tangibles, reliability, responsiveness, assurance, and empathy components of customer satisfaction). This *t*-test failed to reach statistical significance, $t = 1.06$, $p = .290$ (two-tail), indicating that the responsiveness component of customer satisfaction did not explain significant unique variance in customer engagement in CCV.

Summary of Findings and Conclusion

The broad purpose of this study was to better understand antecedents to customer engagement in CCV so that organizations can increase participation. Many organizations find gaining participation in collaboration difficult (Handrich & Heidenreich, 2013). Understanding which factors have a relationship with engagement adds to the knowledge base and allows more informed decisions to be made. The specific purpose of this study was to determine if, and to what degree, a relationship existed between customer satisfaction, each component of customer satisfaction, and initial customer engagement in CCV in the hotel industry. The single factor of customer satisfaction was examined through this study because it was not known if there was a relationship with customer engagement in CCV (Banyte *et al.*, 2014).

The results of the study indicate that customer satisfaction has a significant positive relationship with customer engagement in CCV. They also show that the components of customer satisfaction, based on service quality, within the SERVQUAL instrument (reliability, assurance, tangibles, empathy, and responsiveness) all have a significant relationship with customer engagement in CCV. That is to say that as customer satisfaction (or any of the examined subscales) increases, customer engagement in CCV also increases. These are new results that have not been produced empirically in the past. As such, this study advances research on the topic of engagement in CCV.

Practical Implications

Results from this research show that customer satisfaction is significantly and positively related to customer engagement in CCV. This implies that customer satisfaction can be an antecedent to engagement. The aim of this research was to attempt to help business leaders develop strategies to gain customer willingness to engage in CCV. The study explored one possible factor, customer satisfaction, which has a relationship with engagement in CCV. Because the results are both robust and significant, organizational leaders can use them with confidence within the population chosen. They should keep in mind, even though customer satisfaction has been shown to be related to engagement in CCV, that this is only one factor that has a relationship. The results of this study should be synthesized along with other studies examining co-creation engagement to develop the most effective strategies.

Banyte *et al.* (2014) found that communication, competence, commitment, and correctness all were factors that encouraged engagement in CCV. They specifically mention customer satisfaction as a possible factor that should be studied. This research furthers their results and also adds to them because some of the attributes within their studied factors can contribute to customer satisfaction. Zhang *et al.* (2015) found that brand fondness, community, and financial incentives motivated customers to engage in CCV within the hotel industry. The current research contributes to, and extends their research as well. Several other authors who empirically researched factors to encourage engagement in CCV suggest that there is little empirical data available, the factors for engagement are not fully studied, and that those factors should be researched (Chathoth *et al.*, 2016; Fernandes & Remelhe, 2016; Lazarus *et al.*, 2014; Morosan, 2015). This study answers that call by developing significant research on one engagement factor, customer satisfaction.

Previous research has found that encouraging engagement in CCV is important (Frow *et al.*, 2015; Gouillart, 2014; Ophof, 2013). All factors should be examined to determine the best methods of increasing engagement. This research examined customer satisfaction as an engagement factor in CCV and found a significant positive relationship. This implies that leaders could gain additional benefits from increasing customer satisfaction beyond those benefits already heavily researched, such as loyalty, return business, and word of mouth. Namely, they may be able to increase engagement in CCV as well. The results imply this by showing that as customer satisfaction increases, so does engagement in CCV.

The results of this research have extended the knowledge involving factors that encourage engagement in CCV. The sample was more than adequate to gain significant results that practitioners can use to help develop methods to engage their customers in collaboration that leads to value. This is important because organizations that do not engage their customers may have a competitive disadvantage to those that do.

Future implications

The results of this study address a small portion of the needed research to develop sound strategies for customer engagement in CCV. Determining and evaluating each factor is important because a successful CCV program can increase organizational performance significantly (Ophof, 2013). Just as important, faster innovation can contribute to the quality of life for society in general.

The results may be used in the future to help companies collaborate with their customers. Since no previous research on the subject is available (Banyte *et al.*, 2014), organizations may have targeted unsatisfied customers for participation rather than satisfied individuals. All customers could have been targeted equally for participation. Because this study clearly shows that satisfied customers are more willing to engage in CCV, leaders can target those more likely to participate in the future. They may also want to integrate CCV programs into customer satisfaction enhancement programs. Future strategic plans to collaborate in value creation with customers should include measures of customer satisfaction to help leaders to determine who is most likely to engage. This could help streamline the process, reducing costs and increasing effectiveness. The future strategic plans should also include other factors for engagement in CCV so companies can best determine which customers are most likely to collaborate and ensure that those who would participate are being invited.

The results of this study have helped to provide a direction for future development of methods to engage customers in CCV. The result that customer satisfaction has a significant and positive relationship with engagement in CCV has furthered the understanding of implementation strategies. Future strategies should become more useful with the addition of this new knowledge.

Recommendations and Limitations

It is hoped that organizational leaders will use this study to help guide them in creating strategies for engaging customers in CCV. These leaders will need to consider the limitations of this study to make the best decisions. The data were retrieved from a very specific group of individuals. While the sample was widespread (the United States), it only included individuals with recent hotel stays. This limits the generalization of the

results to one industry. The sample, being a convenience sample, creates possible weakness in the research as well. A convenience sample includes individuals who have chosen to participate after an invitation. This can lead to self-selection bias in the study results. However, the sampling technique is not unusual and the resulting power exceeding 95% can give organizational leaders confidence in the robustness of the results.

A portion of the research needed to fully understand engagement in CCV, specifically customer satisfaction, has now been revealed to have a significant relationship with customer engagement in CCV. The subject is important and more research should be completed to further the area of study. This study could be replicated using other service areas such as airline travel, accounting, restaurants, insurance, and entertainment industries. Research in other industries would complement this research and increase overall generalization. Other possible engagement factors should be explored to develop the full picture of what is needed to encourage engagement in CCV. This could include characteristics such as education level, employment status, and personality type. These recommendations are meant to make understanding and implementation easier and faster for all levels of the organization.

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