INTERNATIONAL JOURNAL OF BUSINESS, 22(3), 2017 ISSN: 1083-4346

Customer Satisfaction Index as A Performance Evaluation Metric: A Study on Indian E-Banking Industry

Ragu Prasadh Rajendran[a] and Jayshree Suresh[b]
[a]*School of Management, SRM University,*
Kancheepuram - 603203, India
raguprasadh_rajendran@srmuniv.edu.in
[b]*Hand in Hand Academy for Social Entrepreneurship,*
Kaliyanur, Kancheepuram - 631601, India
jayshreesuresh@gmail.com

ABSTRACT

With India transforming into a more service and customer oriented economy, there is a need to augment the conventional financial measures with customer based metrics. Customer Satisfaction Index (CSI) is one such solution, which is a customer-based satisfaction benchmarking system and a standard metric widely implemented in the United States and Europe. The objective of this study was to apply the CSI as a performance evaluation metric in the Indian e-banking context. In the present study, the Customer Satisfaction Index for E-Banking (CSI-EB) model was developed with indigenous measurement scales which were derived by applying focus group technique and the model was then validated using the structural equation modelling (SEM) technique. The results showed perceived quality and perceived value as the antecedents of customer satisfaction; while customer complaints and customer loyalty as its consequences. The CSI-EB score computed was 70.7 indicating that the respondents were fairly satisfied with the e-banking services.

JEL Classification: M10

Keywords: customer satisfaction index; e-banking; perceived quality; perceived value; customer complaints; customer loyalty

I. INTRODUCTION

Performance evaluation is imperative to provide a true and fair picture of the financial health of an organization (Debasish, 2006). The performance evaluation system of businesses in India has been traditionally based on financial indicators which are criticized for being historic and lacking a futuristic outlook (Anand et al., 2005). The drawback of the financial measures is that they are lagging indicators of performance and do not focus on customer needs and satisfaction (Pandey, 2005). Hence, the focus shifted to quality and customer-based metrics to facilitate a more integrated and balanced approaches to performance measurement (Bititci et al., 2012). Since it is generic and universally measurable, customer satisfaction is the most commonly applied metric of the various non-financial customer metrics used by firms (Gupta and Zeithaml, 2006). Customer satisfaction measures are proved to be key indicators of customer retention, purchase behaviour, revenue growth and financial performance (Ittner and Larcker, 1998; Chenhall and Langfield-Smith, 2007). Customer Satisfaction Index (CSI) is one such non-financial measure used for quantifying and improving customer satisfaction across firms and industries (Fornellet al., 1996). The national CSIs such as American Customer Satisfaction Index (ACSI) and European Customer Satisfaction Index (ECSI) are the widely established indices used to frequently monitor the health of the economy, industries and individual firms (Neely, 1999; European Performance Satisfaction Index [EPSI] Report, 2007). They act as a complement to traditional indices such as price and productivity metrics (Fornell et al., 1996). Since there is no such standard metric for qualitative performance evaluation in India, an initiative was made through this study to develop and validate the Customer Satisfaction Index for E-Banking (CSI-EB) model in the Indian context.

Following the first section of Introduction, the second section briefly reviews the existing national CSIs and their applications in different regions and contexts. The third section describes the objective of the present study. The fourth section presents the conceptual framework and the variables used for this study. The fifth section elaborates the research methodology that was used to develop and validate the proposed CSI-EB conceptual model. The sixth section presents the analysis of study results and the final section comprises of concluding remarks followed by managerial implications and directions for further research.

II. LITERATURE REVIEW

With the changing economy, performance measures must also change. The research on performance measures underwent an evolution with the establishment of customer satisfaction indices at national level. Sweden was the first country to introduce a customer satisfaction based national economic indicator called Swedish Customer Satisfaction Barometer (SCSB) to raise the quality and competitiveness of its market and industries (Fornell, 1992). The idea was to provide a uniform and comparable measurement approach for regular benchmarking over time and across firms on how well they satisfy their customers (Fornell et al., 1996). A national CSI contributes to a greater and holistic view of economic output, which helps in monitoring and improving the standard of living and economic policy decisions (Anderson and Fornell, 2000).

The Swedish Customer Satisfaction Barometer (SCSB) introduced in 1989 was the first national CSI for consumer products and services. It was established based on customer inputs from 100 leading companies from over 30 industries representing almost 70 percent of the Swedish market (Fornell, 1992). Motivated by the SCSB, national CSIs were established for other countries. The American Customer Satisfaction Index (ACSI) was set up in 1994 as a representative of the entire U.S. economy comprising more than 200 firms from over 40 industries of seven important consumer sectors (Fornell et al., 1996). The European Customer Satisfaction Index (ECSI) was introduced in 1999 for 11 countries in the European Union based on inputs from 10 industries (Eklöf and Westlund, 2002). Encouraged by the successful progress and implementation of these national CSIs over the years, CSIs were established for Norway (Andreassen and Lindestad, 1998), Switzerland (Bruhn and Grund, 2000), Denmark (Martensen et al., 2000) and Turkey (Türkyilmaz and Özkan, 2007).

The quintessence of CSI is its theoretical framework comprising of customer satisfaction as the central component along with its antecedents and consequences have varied across countries. The SCSB model consists of two main drivers of customer satisfaction i.e. perceived performance and customer expectations which are theorized to positively influence customer satisfaction. The outcomes of customer satisfaction in SCSB are customer complaints and customer loyalty. They were derived based on Hirschman's (1970) exit-voice theory that a dissatisfied customer either exits or voices his complaint in an effort to receive restitution (Türkyilmaz and Özkan, 2007). Thus, an increase in satisfaction is expected to decrease customer complaints and increase customer loyalty (Fornell, 1992; Anderson et al., 1994).

The ACSI model is an extension of the SCSB theoretical framework adapted in the context of the U.S. economy. The fundamental distinctions between the SCSB and the ACSI are the inclusion of two distinct constructs; perceived quality and perceived value instead of perceived performance. Perceived quality and perceived value are expected to increase customer satisfaction (Anderson et al., 1994). Moreover, the ACSI model depicts perceived value as a mediator for both perceived quality and customer expectations towards customer satisfaction. Similar to SCSB, the outcomes of customer satisfaction in the ACSI model consist of customer complaints and customer loyalty (Fornell et al., 1996).

The ECSI, a modified adaptation of the ACSI is representative of the economies of 11 countries in the European Union which facilitates cross-country comparison of the CSI scores. The ECSI model consists of customer expectations, perceived quality, perceived value, customer satisfaction and customer loyalty modelled in a similar manner as in the ACSI (Eklöf and Westlund, 2002). There are two major distinctions between the ACSI and the ECSI. First, the ECSI model includes corporate image which is presumed to have a positive influence on customer satisfaction. Second, unlike ACSI, the ECSI model does not incorporate customer complaints construct as a consequence of satisfaction (Johnson et al., 2001).

Consequently, the other national CSIs which were developed later comprised of similar constructs as the SCSB, ACSI and ECSI, but with the addition of distinctive variables suitable to their countries and contexts. These CSIs were substantiated by using huge representative sample consisting of customers of leading companies from different industries. Hence, their measurement scales comprised of a standard set of generic questions (Fornell et al., 1996).

These national CSIs were applied by several researchers, of which ACSI and ECSI were the widely used models in marketing literature. Generally, researchers directly adopted these CSI models with original measurement scales for validation across various industries, contexts and countries (Kristensen et al., 2000; Winnie and Kanji, 2001; Yu et al., 2005; Terblanche, 2006; Slongo and Vieira, 2007; Balaji, 2009). To a greater extent, these studies were able to validate the CSI models except for certain relationships, specifically with respect to the customer expectations construct.

Apart from studies involving the direct usage of CSIs, there were few studies which had attempted to take a step further by deconstructing or expanding the perceived quality construct with the usage of industry-specific scales as it was deemed to be the most important antecedent of customer satisfaction (Hsu et al., 2006; Hsu, 2008; Ferreira et al., 2010; Hsu et al., 2013). They validated the proposition that a decomposed CSI model with relevant and in-depth measurement scales can have better explanatory power than the pure model. There were other similar studies which applied CSI models with original generic measurement scales or deconstructed quality scales (Bayol et al., 2000; Ryzin et al., 2004; Zaim et al., 2010; Bayraktar et al., 2012). Since there is a dearth of studies in India which had attempted to build the CSIs, it was considered as a worthwhile effort to develop and test a CSI model in the Indian context with in-depth, industry-specific measurements.

Even though, the banking sector in India has undergone a reformation over the past two decades, with the development of new products, technological advancement and introduction of alternate banking channels to serve customers, no CSI models with indigenous measurement scales were constructed so far to evaluate the satisfaction of customers with banking industry especially with e-banking services. With impetus from these existing research gaps, this study was undertaken to develop and test the CSI-EB model in the context of Indian e-banking industry.

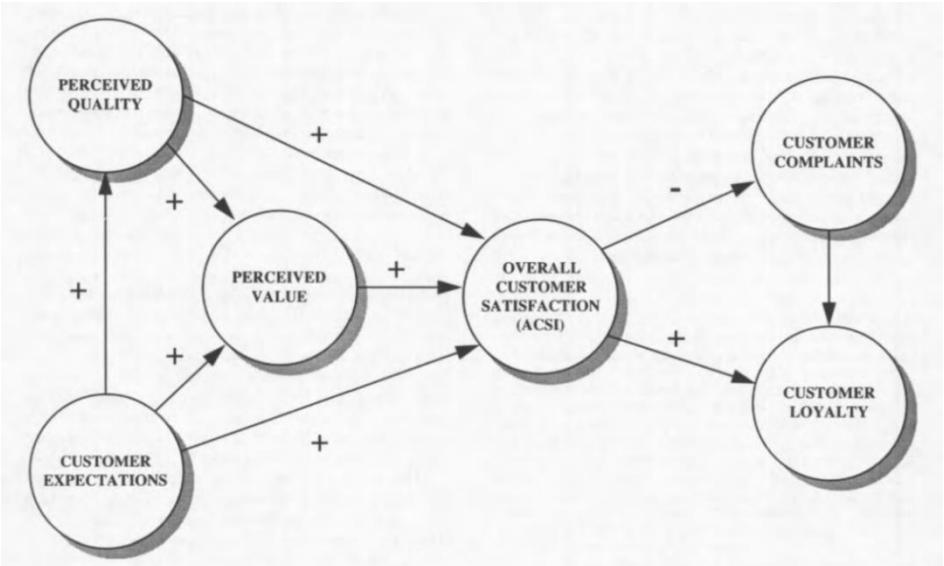
III. OBJECTIVE OF THE STUDY

The objective of the study was to apply the CSI as a performance evaluation metric in the Indian e-banking context. To accomplish this, a Customer Satisfaction Index model for E-Banking, named as CSI-EB model was established with indigenous measurement scales based on qualitative research and literature study. The model was further validated using the SEM technique and the CSI score was computed for e-banking industry to substantiate its applicability as a performance evaluation metric.

IV. CONCEPTUAL FRAMEWORK

The CSI-EB model which was based on the structural equation model (SEM) comprised of the antecedents and consequences of customer satisfaction. The CSI-EB framework was constituted based on the ACSI model as presented in Figure 1. It consisted of six constructs where customer satisfaction was the central component with customer expectations, perceived quality and perceived value as its antecedents; whereas customer complaints and customer loyalty as its consequences. The interrelationships among these constructs were established based on existing well-known CSIs.

Figure 1
The American Customer Satisfaction Index (ACSI) model



Source: Fornell et al. (1996)

A. Perceived Quality

Perceived quality is defined as "the consumer's judgment about an entity's overall excellence or superiority" (Zeithaml, 1988). It is the customer's evaluation of a product or service post purchase and experiences. Based on various theories like Expectancy-Disconfirmation Paradigm (EDP) (Oliver, 1977; 1980), Importance-Performance model (Barsky, 1992), Value-Precept theory (Westbrook and Reilly, 1983), etc., it was established that satisfaction is a function of the customers' perception of performance which is equivalent to quality (Cronin and Taylor, 1994; Fornell et al., 1996). Hence, perceived quality is presumed to have a positive influence on customer satisfaction (Fornell et al., 1996; Cronin et al., 2000; Johnson et al., 2001; Eklöf and Westlund, 2002).

B. Customer Expectations

Expectations are the consequences of customers' prior experience (Türkyilmaz and Özkan, 2007). Customer expectations represent the anticipated performance of the products and services by the customers which are formed by their prior consumption experience, non-experiential information through word-of-mouth, advertising and a projection of the firm's ability to deliver quality in the future (Fornell et al., 1996). Due to the predictive role of expectations, it is theorized to positively influence both perceived quality and customer satisfaction (Anderson et al., 1994; Johnson et al., 1995).

C. Perceived Value

Perceived value indicates the customer's assessment of a product or service based on the perceptions of what is received and what is given (Zeithaml, 1988). According to the equity theory, satisfaction is a function of the value of a product or service perceived by consumers, i.e. perception of a fair input-to-output ratio (Oliver and Swan, 1989). Hence, perceived value is considered to positively affect customer satisfaction (Cronin et al., 2000; Day and Crask, 2000; Johnson et al., 2001; Ryu et al., 2012). Perceived value is described as the perceived level of quality compared to the price paid and is assumed to be positively influenced by perceived quality and customer expectations (Fornell et al., 1996).

D. Customer Satisfaction

Customer satisfaction is a key performance indicator and differentiator of a business and is generally part of the balanced scorecard (Gitmanand McDaniel, 2005). It is a key indicator of the firm's historic, present and future performance (Fornell et al., 1996). The index measures the level of customer satisfaction and how well their expectations are met (Türkyilmaz and Özkan, 2007). This construct evaluated the customers' overall satisfaction, expectations' fulfilment, and perceived performance compared to their ideal provider (Fornell, 1992).

E. Customer Complaints

Customer complaints construct represents the customer complaining behaviour and their perception of complaint handling by the firm. Based on the Hirschman's (1970) exit-voice theory, dissatisfied customers either exit or voice their complaints in an effort to obtain restitution. Following this, the direct outcome of increased customer satisfaction is reduced incidence of complaints and improved customer loyalty (Fornell and Wemerfelt 1987). Hence, customer satisfaction is considered to negatively affect customer complaints (Fornell et al., 1996).

F. Customer Loyalty

Customer loyalty was the ultimate dependent variable in the conceptual framework. It indicates the customer's long-term commitment to purchase and use a product or service in the future, despite marketing and situational influences to cause switching (Oliver, 1999). It is expected that customer loyalty is negatively affected by customer complaints (Fornell et al., 1996). Since, it was widely proven in literature that satisfaction is an important predecessor to customer loyalty (Oliver, 1999; Caruana, 2002; Anderson and Srinivasan, 2003; Kumar and Srivastava, 2013), it is expected to positively affect customer loyalty.

V. METHODOLOGY

Chennai was selected as the study area, which has emerged as an important centre for banking and finance in the Indian Market with its vibrant banking culture and trading. The study was conducted in two phases by employing both descriptive and causal

research design. The initial phase of qualitative research involved building e-banking industry-specific measurement scales and then designing the CSI-EB model. The second phase involved the empirical validation of the proposed model and the consequent analysis of the derived quantitative results.

A. Qualitative Research

The focus group procedure was adopted for the initial phase of qualitative research to explore and operationalize the constructs in the conceptual framework. The focus group output was explored using content analysis to identify the key themes characterizing each construct and develop in-depth measurement scales for empirical validation of the proposed model.

Focus group is one of the efficient techniques that provide subjective and detailed understanding of the subject (Calder, 1977). It depends on the interaction between the participants which involve sharing their opinions and discussing other participants' experiences (Kitzinger, 1995). Focus groups are particularly useful to comprehend the participants' conceptualizations of a particular phenomenon and the language they use to describe them (Stewart and Shamdasani, 2014). Hence, it was chosen as the most appropriate technique to collate ideas for scale generation in this study.

1. Sample for Focus Group

The purposive sampling method was used to recruit the focus group participants who frequently used e-banking services. In this sampling, the participants' selection relies on the judgement of the researcher (Barbour, 2005). Purposive sampling was a more appropriate method since its goal is to focus on particular characteristics of the population that have the potential to provide rich, relevant and diverse information pertinent to the research questions (Ritchie et al., 2013). The selection criteria for the participants were that they must be e-banking customers for a considerable time period so that they had adequate knowledge and familiarity about the issue. The researcher tried to obtain a more representative sample by selecting the participants from varied demographic backgrounds and different banks.

Three parallel focus group discussions were conducted to improve the reliability of the data collected (Walden, 2009). Since the conventionally proposed size of a focus group is five to eight participants to ensure greater effectiveness and co-ordination (Krueger and Casey, 2014), the researcher selected a total of eighteen participants who were distributed across three focus groups with six participants each. Among the 18 participants, there were 11 males (61 per cent) and 7 females (39 per cent). Nine Participants aged below 35 years and seven participants aged between 35-50 years accounted for the majority of the sample i.e. 50 per cent and 39 per cent respectively. Only two respondents (11 per cent) were aged above 50 years.

2. Focus Group Procedure

The researcher administered four open-ended questions to the participants sequentially for discussion. The questions were related to the five constructs in the conceptual

framework, i.e., customer expectations, perceived quality, perceived value, customer complaints and customer loyalty. Each focus group lasted for about 90 to 120 minutes. The discussion was audio recorded which was then transcribed.

3. Questionnaire Design

The transcribed focus group output was analysed and the coding process was carried out which involved identifying significant and relevant data extracts and assigning them to appropriate codes. The researcher then analyzed the codes and grouped those with similar meanings and contexts into overarching themes. The final list of themes derived from a total of 47 codes and 282 pieces of verbatim text are presented in Appendix A. Based on these themes and codes, suitable items were generated for each construct. The content and face validity of the items were assessed by three marketing professors and two bank executives. Based on expert review and literature review, certain inapt items were dropped, some new items were added; while some were modified so as to obtain the final list of items for measurement of the various constructs in the conceptual model. A structured questionnaire was devised consisting of socio-demographic questions followed by the measurement scales consisting of generated items for all constructs which were evaluated using the 5-point Likert scale (1 - strongly disagree to 5 - strongly agree).

4. Measurement Scales

The customer satisfaction construct indicating a collective assessment of the e-banking services was measured using a generic three item scale employed by the existing national CSIs like ACSI and ECSI, which consisted of (1) overall customer satisfaction with e-banking services (2) satisfaction compared to your expectations (3) satisfaction compared to an ideal bank (Fornell, 1992; Fornell et al., 1996). The measurement items for other constructs were derived from the focus group study, which were structured and conceptualized based on expert review and relevant literature.

The perceived quality construct was measured using ten items which were incorporated into three dimensions (1) core products and services (2) customer service quality (3) online systems quality. The core products and services dimension represents the quality of e-banking services in terms of the range of products and services, its varieties and features. The customer service quality signifies the quality of assistance provided to customers; while the online systems quality denotes the quality of online infrastructure facilities in e-banking. The customer expectations construct indicating the anticipated performance of a product or service was also measured using the same measurement scale as perceived quality.

The perceived value construct was measured using nine items integrated into three dimensions (1) monetary value (2) temporal value (3) spatial value. The monetary value dimension represents the benefits gained by the customers in exchange for the price paid (Monroe, 1990). Temporal value dimension signifies the customer perception of time issues and flexibility in using e-banking services; while spatial value represents the customer perception of feasibility and flexibility in using e-banking at any location (Heinonen, 2007).

The customer complaints construct was measured using four item scale (1) complain to others (2) complain to the bank (3) efficiency of complaint handling (4) complaint handling in future.

The customer loyalty construct was measured using nine items incorporated into three dimensions (1) word-of-mouth (2) purchase intentions (3) price sensitivity. The word of mouth dimension signifies the level of customer's advocacy. Purchase intentions denote the customer's willingness to continue purchase and usage of e-banking; while price sensitivity indicates the customer's resistance to switch to other banks with better services and price (Zeithaml et al., 1996).

The list of items constituting the measurement scales for the constructs in the conceptual model is presented in Table 1.

B. Pilot Study - Testing Reliability and Validity of the Measurement Scales

A pilot study was conducted to assess the reliability and validity of the measurement scales for the constructs in the conceptual model.

1. Sample

The convenient sampling technique was used to draw the sample of customers who were long-term customers and regular users of e-banking. Out of 200 questionnaires administered, 167 valid responses were obtained which were subjected to reliability and validity assessment.

2. Scale Reliability

The reliability was tested using Cronbach's alpha reliability coefficient. The higher the Cronbach's alpha, the more internally consistent and reliable the generated scale is (Santos, 1999). The coefficient alpha value of 0.7 and above is considered acceptable (Nunnally and Bernstein, 1994), but lower thresholds have been used by researchers in the past (Nunnally, 1978). As briefed in Table 2, the reliability coefficients ranged from 0.678 to 0.841 indicating good internal consistency among the items of the constructs/dimensions, except the customer expectations construct whose coefficients were below 0.5 implying a poor reliability of its measurement items.

3. Scale Validity

The convergent validity of the measurement scales was tested using factor analysis. The loadings of the individual items were used to determine the validity of the measurement scales, wherein values greater than 0.5 are considered acceptable (Hair et al., 1998). As presented in Table 2, the factor loadings of the items ranged from 0.358 to 0.884. All the constructs and its dimensions except customer expectations exhibited a good construct validity with factor loadings greater than 0.5.

Table 1
Constructs and their measurement scales

Constructs	Measurement Items
Perceived Quality/ Customer Expectations	Core products and services
	The bank offers me a wide range of products and services through e-banking (e.g.: loans, insurance, fund transfer facility, etc.)
	The bank's products and service features are very attractive (e.g.: minimum account balance, interest rates, loan repayment schedule)
	The bank provides all the necessary services through e-banking
	Customer service quality
	The bank offers quick and excellent customer support in case of any problem
	The bank offers 24x7 help through phone and email
	The bank provides clear answers to my queries
	Online service quality
	The bank's online interface is user friendly
	E-banking offers quick response and faster delivery of services
	The bank's website has all the functions and information that I need
	Navigation in bank's website is very easy
Perceived Value	Monetary value
	The bank's products and services are reasonably priced with affordable service charges, interest rates, premiums, etc.
	The bank offers good value for money
	The bank's products and services are worth the price they charge compared to other banks
	Temporal value
	Using e-banking saves my time and effort
	E-banking is more efficient and relaxed process than visiting branch
	E-banking is very flexible as I can use its services anytime
	Spatial value
	I can easily access e-banking at any location
	I can use e-banking privately and safely at any place without any disturbances of other customers, staff, etc.
	I can access e-banking using any device with minimum resources and information

Customer Satisfaction	How satisfied are you with the e-banking services of your bank based on all your experiences?
	Considering all your expectations from e-banking, to what extent were they fulfilled by your e-bank?
	How well do you think your bank performs compared to your ideal e-banking service provider?
Customer Complaints	I complain to other customers if I experience a problem with my bank's service
	I complain to the bank if I experience a problem with its service
	The bank handles my complaints very efficiently
	The next time I have a complaint about the banking services, I feel it will be resolved well
Customer Loyalty	Word-of-mouth
	I say positive things about my bank to other people
	I recommend this bank to anyone who seeks my advice
	I encourage my friends and family to choose this bank
	Purchase intentions
	I consider this bank as the first choice
	I will switch to another bank if I experience a problem with my bank's service
	I will continue using this bank in the future
	Price sensitivity
	I will continue using the bank's e-services even if its prices increase somewhat
	I can pay a higher price for the benefits I receive from my bank
	I will switch to another bank if that offers better e-services at better prices

Table 2
Reliability and validity assessment of the measurement scales

Construct	Dimensions	Scale Items	Cronbach's Alpha	Factor Loadings
Perceived Quality	Core Product and Service Quality	Range of products and services	0.678	0.547
		Features of products and services		0.699
		Availability of necessary products and services		0.665

	Customer Service Quality	Quickly solve problems	0.753	0.600
		Availability of help		0.731
		Clear answer and solutions		0.778
	Online Systems Quality	User friendly	0.756	0.751
		Speed of responses		0.624
		Functions that customers need		0.677
		Easy navigation		0.631
Customer Expectations	Core Product and Service Quality	Range of products and services	0.494	0.841
		Features of products and services		0.358
		Availability of necessary products and services		0.395
	Customer Service Quality	Quickly solve problems	0.474	0.434
		Availability of help		0.531
		Clear answer and solutions		0.476
	Online Systems Quality	User friendly	0.450	0.425
		Speed of responses		0.414
		Functions that customers need		0.415
		Easy navigation		0.387
Perceived Value	Monetary Value	Reasonable price	0.807	0.708
		Good value for money		0.803
		Prices compared to others		0.832
	Temporal Value	Saves time	0.810	0.775
		Efficient		0.777
		Time flexibility		0.748
	Spatial Value	Compatibility	0.764	0.747
		Privacy		0.716
		Device and network availability		0.717
Satisfaction		Overall Satisfaction	0.831	0.628
		Satisfaction compared to expectations		0.884
		Satisfaction compared to ideal		0.861

Customer Complaints		Complain to others	0.687	0.812
		Complain to the bank		0.537
		Efficiency of complaint handling		0.529
		Complaint handling in future		0.563
Customer Loyalty	Word-of-Mouth	Say positive things	0.796	0.537
		Recommendation		0.840
		Encouraging others		0.852
	Purchase Intentions	First consideration	0.841	0.675
		Switching to others if any problem		0.872
		Continue usage		0.842
	Price Sensitivity	Continue despite increase in price	0.783	0.680
		Pay higher price than others		0.770
		Switch to others with better offers		0.782

Source: Authors' own findings.

Table 3
Discriminant validity

Latent Variable	PQ	EXP	PV	SAT	CC	LOY
PQ	0.674[a]					
EXP	0.414	0.494				
PV	0.789	0.449	0.759			
SAT	0.628	0.187	0.500	0.799		
CC	-0.495	-0.394	-0.415	-0.185	0.621	
LOY	0.557	0.318	0.577	0.515	-0.360	0.768

Source: Authors' own findings.
Note: [a] Diagonal elements are square roots of average variance extracted (AVE).

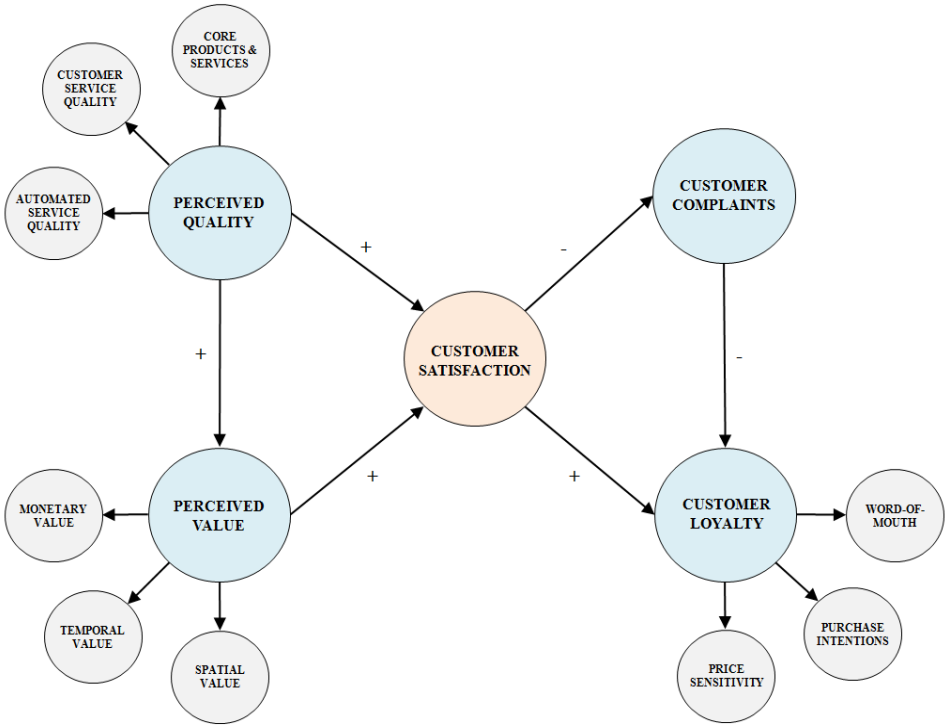
The discriminant validity was assessed using the average variance extracted (AVE), which should be greater than the variance shared between the constructs. This comparison was made in a correlation matrix as shown in Table 3, where the diagonal elements are the square root of AVE and the off-diagonal elements are the correlations

between the constructs. For adequate discriminant validity, the diagonal elements (square root of AVE) should be greater than the off-diagonal elements (correlation) in the corresponding rows and columns (Fornell and Larcker, 1981). All the constructs had adequate discriminant validity except for perceived quality (PQ) against perceived value (PV). Since both perceived quality and perceived value were found to have adequate convergent validity and reliability, they were retained for the main study.

C. CSI-EB Conceptual Model

The CSI-EB conceptual model was designed based on the reliability and validity results from pilot study. Since all the constructs except customer expectations exhibited acceptable reliability and validity, they were retained in the CSI-EB model. Overall, five constructs viz. customer satisfaction, perceived quality, perceived value, customer complaints and customer loyalty were used to devise the CSI-EB model for the Indian e-banking industry as shown in Figure 2.

Figure 2
CSI-EB conceptual model for Indian e-banking industry



Source: Prepared by the author.

D. Empirical Validation of the CSI-EB Conceptual Model

Based on the pilot study results, a refined questionnaire with finalized measurement items was used for data collection.

1. Sample

Similar to the pilot study, the convenience sampling technique was used to select the sample, based on the criteria that the respondents were long-term customers and regular users of e-banking services. Out of 400 questionnaires administered, 319 usable responses were obtained. Among the sample of 319, males made up the majority of the respondents i.e. 188 (59 per cent); and the rest were females i.e. 131 (41 per cent). There were 144 respondents (45 per cent) aged below 35 years; while 121 respondents (38 per cent) aged 35-50 years and only 54 respondents (17 per cent) aged above 50 years.

VI. RESULTS AND DISCUSSION

The CSI-EB conceptual model was tested using Maximum Likelihood Estimate (MLE), a co-variance based structural equation modelling technique (SEM). The MLE is a widely used approach for theory and hypotheses testing purposes (Hsu et al., 2006). Compared to other techniques like Partial Least Squares (PLS), it is both robust and unbiased, ideally applied for hard modelling situations; which is in concordance with the CSI research practice (O'Loughlin and Coenders, 2004). As proposed by Tenenhaus et al. (2005), SPSS AMOS 18.0 software was used for this analysis.

The model was tested statistically using the SEM technique to evaluate its level of consistency with the data. The fit statistics of the CSI-EB model built is presented in Table 4. The fit statistics indicated an adequate model fit with all the fit indices in recommended range, except the chi-square significance which is 0.000. However, it is very sensitive to large sample size (generally above 200) and is not relied upon as a criterion for acceptance or rejection (Vandenberg, 2006). Thus, it was established that the conceptual model is plausible and demonstrated a good fit with the sample data.

Table 4
Fit statistics of the CSI model

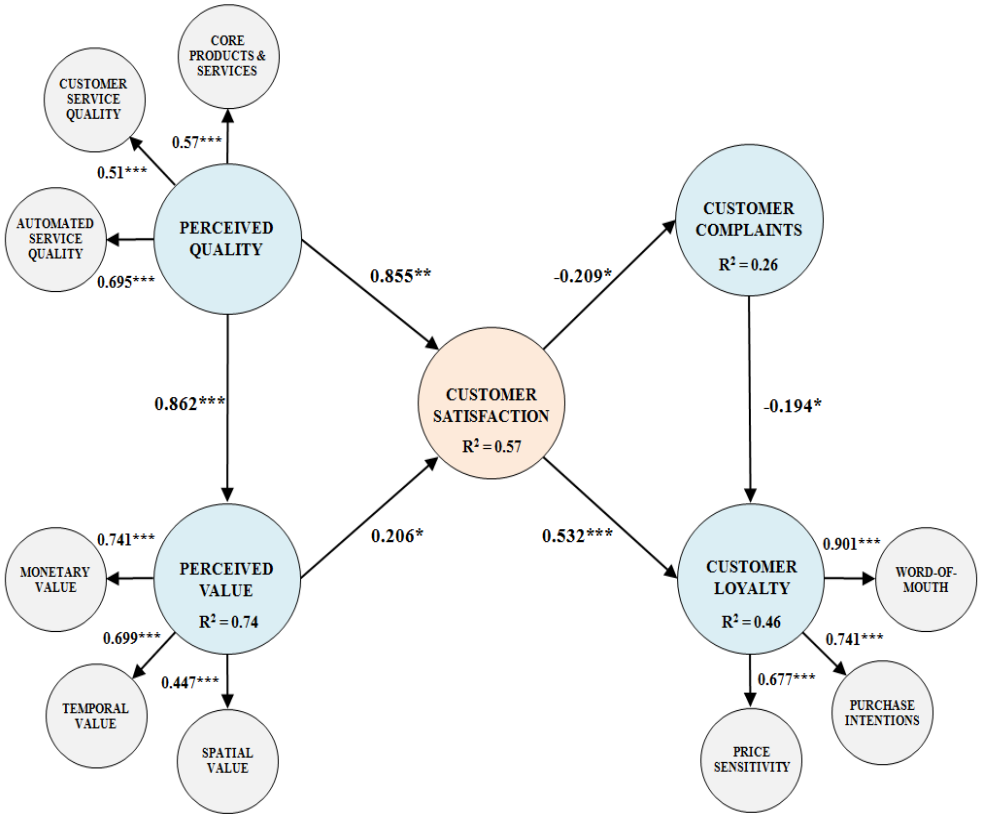
Fit Statistic	Obtained	Recommended
Chi-square (X^2)	1023.314	-
Df	545	-
X^2 significance	0.000	p <= 0.05 (Not mandatory)
X^2/df	1.878	< 5.0
GFI	0.903	> 0.9
NFI	0.921	> 0.9
RFI	0.916	> 0.9
CFI	0.944	> 0.9
RMSEA	0.053	< 0.06

Source: Authors' own findings.

Next, the model output was analysed to examine the interrelationships among the constructs. It involved reviewing the path coefficients and squared multiple correlations (R^2). The path coefficients represent the strength and significance of the relationships between variables, and R^2 values denote the amount of variance explained by the predictor variables (Hsu et al., 2013).

The overall model explained 57 percent of the variance in customer satisfaction and 46 percent of the variance in customer loyalty. Perceived value showed the highest explained variance of 74 percent; while customer complaints was the lowest with 26 percent. In view of the notion that a large number of factors might influence these constructs, the amount of variance explained by the model is equitable. The manifest variables of all the latent constructs in the model were significantly linked and had estimates greater than the acceptable limit of 0.5 (Hair et al., 1998). In addition, all the path coefficients were statistically significant as presented in Figure 3, which validated the theoretical soundness of the model.

Figure 3
CSI-EB conceptual model results with standardized estimates



Source: Authors' own findings.
Notes: *p < 0.05; **p < 0.01; ***p < 0.001.

Perceived quality emerged as the most important antecedent of customer satisfaction with a significant positive effect on customer satisfaction ($\beta = 0.855$, $p < 0.01$). Perceived quality also had a significant positive effect on perceived value ($\beta = 0.862$, $p < 0.001$) indicating their strong relationship. Perceived value had a significant positive effect on customer satisfaction ($\beta = 0.206$, $p < 0.05$) establishing it as the second important antecedent of customer satisfaction after perceived quality.

Customer satisfaction had a significant negative effect on customer complaints ($\beta = -0.209$, $p < 0.05$) validating that higher customer satisfaction led to lower customer complaints. Customer complaints had a significant negative effect on customer loyalty ($\beta = -0.194$, $p < 0.05$) indicating that lower customer complaints led to more loyal customers. Customer satisfaction had a significant positive effect on customer loyalty ($\beta = 0.532$, $p < 0.001$) substantiating customer satisfaction as an important antecedent of customer loyalty.

Based on the SEM model which was built in this study, the customer satisfaction index (CSI-EB) score[1] computed for the e-banking industry was 70.7 (on 0-100 point scale). This score was considerably lower than the ACSI score[2] of 80 for the U.S. banking industry and the ECSI score[3]of 78 points for the U.K. banking industry in 2016. The average ECSI score[3] for eight European nations including the U.K. in 2016 was 72.7 points; which was also marginally higher than the CSI-EB score obtained in this study. Thus, it was observed that the customer satisfaction score for the e-banking industry in India was almost 8-10 points lower when compared to other developed countries like U.S. and U.K. indicating the need for better quality and valuable e-banking services for improved customer satisfaction.

VII. CONCLUSION

On the basis of the analysis of the relationships among the variables, it was found that perceived quality was the leading antecedent of customer satisfaction compared to perceived value. This implies that the customers were more influenced by the quality attributes in the e-banking industry than the notion of benefits and sacrifices involved. Customer loyalty was found to be the most important positive consequence of customer satisfaction; while customer complaints was negatively related to both customer satisfaction and customer loyalty indicating that higher complaints and their poor management lead to customer attrition. Thus, the study was able to substantiate the relationships conceptualized in the CSI-EB model. The aggregate CSI score for the Indian e-banking industry is satisfactory, but lower compared to the developed countries like U.S., U.K. and other European nations.

VIII. MANAGERIAL IMPLICATIONS

The scope for extensive applicability of the CSI offers a wide range of implications of this study. First, the study tested the applicability of the CSI as a performance evaluation metric in the Indian context, which will boost the CSI research practice further. Second, the indigenous measurement scales developed for the constructs can be further explored, tested and improved. Third, the study has helped to devise an approach for developing and testing the CSI model which can be applied across different industries and regions.

The CSI has the capability to be used as a tool for assessing and improving the banks' performance. It will help bankers to identify specific areas of improvement, formulate appropriate strategies and improve optimization of resources to achieve increased customer satisfaction and loyalty. It will act as a complement to traditional performance metrics helping various stakeholders such as customers, banks and policy makers in decision making.

IX. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Due to time feasibility constraints, this study was limited to Chennai. A larger, geographically diverse sample can facilitate more representativeness to ensure lower bias and greater accuracy of results. Also, necessary caution should be taken during comparison of CSI scores across countries, since the CSI-EB score in this study was computed exclusively for e-banking industry based on a comparatively smaller sample.

For future research, additional variables like brand image, trust, commitment and affect can be incorporated in the CSI model with the aim of improving its explanatory power. The present study can be conducted on a large scale to establish annual CSI scores providing a performance overview of individual banks and entire banking industry. Also, similar CSI studies can be carried out for various industries such as hospitals, transportation, hotels, etc. which will help to achieve an improved national competitiveness, quality and greater satisfaction over time. Similar to developed countries, CSI research in India should be intensified with large scale implementation to realize its full potential and to promote it as a standard performance measure.

ENDNOTES

1. The formula for the CSI score inspired by the ACSI (Fornell et al., 1996) is

$$\mathrm{CSI} = 25 \times \frac{\sum_{i=1}^{3} w_i x_i - \sum_{i=1}^{3} w_i}{\sum_{i=1}^{3} w_i} \quad (1)$$

   Where x_i's are the measurement variable scores of the latent customer satisfaction, and w_i's are their corresponding unstandardized weights.
2. The ACSI score for the US banking industry can be obtained at: https://www.theacsi.org/news-and-resources/customer-satisfaction-reports/reports-2016/acsi-finance-and-insurance-report-2016
3. The ECSI scores for the banking industry of eight European countries can be obtained at: https://www.instituteofcustomerservice.com/research-insight/research-library/eucsi-a-european-customer-satisfaction-index-eight-countries-compared

APPENDIX

A: List of Final Themes and Codes

Codes	Frequency	Themes
Loan products and features	16	Core products and services
Variety of products and services	14	
Instant fund transfer	5	
Instant msg service and updates	4	
Insurance products and features	4	
Reward schemes, offers, points and gifts	4	
Auto sweep facility	3	
Balance statement update	2	
Bill payment facility	2	
Quickly solve problems	9	Customer service quality
Clear answers and solutions for queries	5	
24/7 customer support	3	
Delay in services	3	
IVR facility	2	
Quick online transactions	11	Online service quality
Userfriendly online interface	9	
All functions offered via e-banking	8	
Fast processing and operation	7	
Ease of using e-banking	6	
Easy navigation	5	
Website design and aesthetics	2	
Interest rates compared to other banks	12	Monetary value
Service charges	11	
Credit card service charges	3	
Minimum account balance	2	
Charges for deposit/withdrawal	2	

Time saving	14	Temporal value
Access anytime	10	
Relaxed process than visiting bank	8	
Minimum effort	5	
Access anywhere	11	Spatial value
Just a mobile or computer required	9	
Privacy while using e-banking	6	
No disturbance from others	5	
Safe fund transfer	2	
Efficiency of complaint handling	10	Customer complaints
Complain to the bank	7	
Complain to other customers	3	
Recommend to others	5	Word-of-mouth
Say positive things	3	
Encourage others	3	
Post online reviews and comments	2	
First choice for banking	7	Future usage intentions
Use only this bank in future	4	
Switch if any problem or dissatisfied	9	Price sensitivity
Continue despite price rise	3	
Ready to pay more compared to other banks	2	
Total	282	

Source: Authors' own findings.

REFERENCES

Anand, M., B.S. Sahay, and S. Saha, 2005, "Balanced Scorecard in Indian Companies," *Vikalpa*, 30(2), 11-25.

Anderson, E.W., and C. Fornell, 2000, "Foundations of the American Customer Satisfaction Index," *Total Quality Management*, 11(7), 869-882.

Anderson, E.W., C. Fornell, and D.R. Lehmann, 1994, "Customer Satisfaction, Market Share, and Profitability: Findings from Sweden," *Journal of Marketing*, 58(3), 53-66.

Anderson, R.E., and S.S. Srinivasan, 2003, "E-Satisfaction and E-Loyalty: A Contingency Framework," *Psychology & Marketing*, 20(2), 123-138.

Andreassen, T.W., and B. Lindestad, 1998, "The Effect of Corporate Image in the Formation of Customer Loyalty," *Journal of Service Research*, 1(1), 82-92.

Balaji, M.S., 2009, "Customer Satisfaction with Indian Mobile Services," *IUP Journal of Management Research*, 8(10), 52-62.

Barbour, R.S., 2005, "Making Sense of Focus Groups," *Medical Education*, 39(7), 742-750.

Barsky, J.D., 1992, "Customer Satisfaction in the Hotel Industry: Meaning and Measurement," *Hospitality Research Journal*, 16(1), 51-73.

Bayol, M.P., A. de la Foye, C. Tellier, and M. Tenenhaus, 2000, "Use of PLS Path Modeling to Estimate the European Consumer Satisfaction Index (ECSI) Model," *StatisticaApplicata*, 12(3), 361-375.

Bayraktar, E., E. Tatoglu, A. Turkyilmaz, D. Delen, and S. Zaim, 2012, "Measuring the Efficiency of Customer Satisfaction and Loyalty for Mobile Phone Brands with DEA," *Expert Systems with Applications*, 39(1), 99-106.

Bititci, U., P. Garengo, V. Dörfler, and S. Nudurupati, 2012, "Performance Measurement: Challenges for Tomorrow," *International Journal of Management Reviews*, 14(3), 305-327.

Bruhn, M., and M.A. Grund, 2000, "Theory, Development and Implementation of National Customer Satisfaction Indices: The Swiss Index of Customer Satisfaction (SWICS)," *Total Quality Management*, 11(7), 1017-1028.

Calder, B.J., 1977, "Focus Groups and the Nature of Qualitative Marketing Research," *Journal of Marketing Research*, 14(3), 353-364.

Caruana, A., 2002, "Service Loyalty: The Effects of Service Quality and the Mediating Role of Customer Satisfaction," *European Journal of Marketing*, 36(7/8), 811-828.

Chenhall, R.H., and K. Langfield-Smith, 2007, "Multiple Perspectives of Performance Measures," *European Management Journal*, 25(4), 266-282.

Cronin Jr, J.J., and S.A. Taylor, 1994, "SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality," *Journal of Marketing*, 58(1), 125-131.

Cronin, J.J., M.K. Brady and G.T.M. Hult, 2000, "Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments," *Journal of Retailing*, 76(2), 193-218.

Day, E., and M.R. Crask, 2000, "Value Assessment: The Antecedent of Customer Satisfaction," *Journal of Consumer Satisfaction Dissatisfaction and Complaining Behavior*, 13, 52-60.

Debasish, S.S., 2006, "Efficiency Performance in Indian Banking—Use of Data Envelopment Analysis," *Global Business Review*, 7(2), 325-333.

Eklöf, J.A., and A.H. Westlund, 2002, "The Pan-European Customer Satisfaction Index Programme: Current Work and the Way Ahead," *Total Quality Management*, 13(8), 1099-1106.

European Performance Satisfaction Index [EPSI] Report, 2007, "Pan European Customer Satisfaction Report 2007,"

Ferreira, I., J. Cabral, and P. Saraiva, 2010, "An Integrated Framework Based on the ECSI Approach to Link Mould Customers' Satisfaction and Product Design," *Total Quality Management*, 21(12), 1383-1401.

Fornell, C., 1992, "A National Customer Satisfaction Barometer: The Swedish Experience," *Journal of Marketing*, 56(1), 6-21.

Fornell, C., and D.F. Larcker, 1981, "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18, 39-50.

Fornell, C., and B. Wernerfelt, 1987, "Defensive Marketing Strategy by Customer Complaint Management: A Theoretical Analysis," *Journal of Marketing Research*, 24(4), 337-346.

Fornell, C., M.D. Johnson, E.W. Anderson, J. Cha, and B.E. Bryant, 1996, "The American Customer Satisfaction Index: Nature, Purpose, and Findings," *Journal of Marketing*, 60(4), 7-18.

Gitman, L.J., and C.D. McDaniel, 2005, *The Future of Business: The Essentials*, Mason, Ohio: South-Western.

Gupta, S., and V. Zeithaml, 2006, "Customer Metrics and Their Impact on Financial Performance," *Marketing Science*, 25(6), 718-739.

Hair, J.F., R.E., Anderson, R.L. Tatham, and C. William, 1998, *Multivariate Data Analysis* (5th ed.), Boston, MA: Pearson Education Inc.

Heinonen, K., 2007, "Conceptualising Online Banking Service Value," *Journal of Financial Services Marketing*, 12(1), 39-52.

Hirschman, A.O., 1970, *Exit, Voice, and Loyalty—Responses to Decline in Firms, Organizations, and States*, Cambridge, MA: Harvard University Press.

Hsu, S.H., 2008, "Developing an Index for Online Customer Satisfaction: Adaptation of American Customer Satisfaction Index," *Expert Systems with Applications*, 34(4), 3033-3042.

Hsu, S.H., W.H. Chen, and J.T. Hsueh, 2006, "Application of Customer Satisfaction Study to Derive Customer Knowledge," *Total Quality Management and Business Excellence*, 17(4), 439-454.

Hsu, S.H., M.H. Tsai, and Y.C. Wang, 2013, "Developing a Decomposed Customer Satisfaction Index: An Example of the Boutique Motel Industry," *Total Quality Management & Business Excellence*, 24(9-10), 1124-1140.

Ittner, C.D., and D.F. Larcker, 1998, "Are Non-financial Measures Leading Indicators of Financial Performance? An Analysis of Customer Satisfaction," *Journal of Accounting Research*, 36(3), 1-35.

Johnson, M.D., E.W. Anderson, and C. Fornell, 1995, "Rational and Adaptive Performance Expectations in a Customer Satisfaction Framework," *Journal of Consumer Research*, 21(4), 695-707.

Johnson, M.D., A. Gustafsson, T.W. Andreassen, L. Lervik, and J. Cha, 2001, "The Evolution and Future of National Customer Satisfaction Index Models," *Journal of Economic Psychology*, 22(2), 217-245.

Kitzinger, J., 1995, "Qualitative Research: Introducing Focus Groups," *BMJ: British Medical Journal*, 311, 299-302.

Kristensen, K., A. Martensen, and L. Gronholdt, 2000, "Customer Satisfaction Measurement at Post Denmark: Results of Application of the European Customer Satisfaction Index Methodology," *Total Quality Management*, 11(7), 1007-1015.

Krueger, R.A., and M.A. Casey, 2014, *Focus Groups: A Practical Guide for Applied Research*, Thousand Oaks, CA: Sage.

Kumar, R.K., and M. Srivastava, 2013, "The Antecedents of Customer Loyalty: An Empirical Investigation in Life Insurance Context," *Journal of Competitiveness*, 5(2), 139-163.

Martensen, A., L. Gronholdt, and K. Kristensen, 2000, "The Drivers of Customer Satisfaction and Loyalty: Cross-Industry Findings from Denmark," *Total Quality Management*, 11(4-6), 544-553.

Monroe, K.B., 1990, *Pricing: Making Profitable Decisions*, New York: McGraw-Hill.

Neely, A., 1999, "The Performance Measurement Revolution: Why Now and What Next?" *International Journal of Operations & Production Management*, 19(2), 205-228.

Nunnally, J.C., 1978, *Psychometric Theory*, New York: McGraw-Hill.

Nunnally, J.C., and I.H. Bernstein, 1994, "The Assessment of Reliability," *Psychometric Theory*, 3(1), 248-292.

Oliver, R.L., 1977, "Effect of Expectation and Disconfirmation on Postexposure Product Evaluations: An Alternative Interpretation," *Journal of Applied Psychology*, 62(4), 480-486.

Oliver, R.L., 1980, "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 17(November), 460-469.

Oliver, R.L., 1999, "Whence Consumer Loyalty?" *Journal of Marketing*, 63, 33-44.

Oliver, R.L., and J.E. Swan, 1989, "Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach," *Journal of Marketing*, 53(2), 21-35.

O'Loughlin, C., and G. Coenders, 2004, "Estimation of the European Customer Satisfaction Index: Maximum Likelihood versus Partial Least Squares: Application to Postal Services," *Total Quality Management and Business Excellence*, 15(9-10), 1231-1255.

Pandey, I.M., 2005, "Balanced Scorecard: Myth and Reality," *Vikalpa*, 30(1), 51-66.

Ritchie, J., J. Lewis, C.M. Nicholls, and R. Ormston, 2013, *Qualitative Research Practice: A Guide for Social Science Students and Researchers*, London: Sage.

Ryu, K., H.R. Lee, and W. Gon Kim, 2012, "The Influence of the Quality of the Physical Environment, Food, and Service on Restaurant Image, Customer Perceived Value, Customer Satisfaction, and Behavioral Intentions," *International Journal of Contemporary Hospitality Management*, 24(2), 200-223.

Ryzin, G.G., D. Muzzio, S. Immerwahr, L. Gulick, and E. Martinez, 2004, "Drivers and Consequences of Citizen Satisfaction: An Application of the American Customer Satisfaction Index Model to New York City," *Public Administration Review*, 64(3), 331-341.

Santos, J.R.A., 1999, "Cronbach's Alpha: A Tool for Assessing the Reliability of Scales," *Journal of Extension*, 37(2), 1-5.

Slongo, L.A., and V.A. Vieira, 2007, "An Analysis of the New Norwegian Customer Satisfaction Barometer (NEW NCSB) in a Brazilian Supermarket Context," *Revista De Administração Mackenzie*, 8(3), 173-194.

Stewart, D.W., and P.N. Shamdasani, 2014, *Focus groups: Theory and Practice* (Vol. 20), London: Sage.

Tenenhaus, M., V.E.Vinzi, Y.M. Chatelin, and C. Lauro, 2005, "PLS Path Modeling," *Computational Statistics & Data Analysis*, 48(1), 159-205.

Terblanche, N.S., 2006, "An Application of the American Customer Satisfaction Index (ACSI) in the South African Motor Vehicle Industry," *South African Journal of Business Management*, 37(4), 29-38.

Türkyilmaz, A., and C. Özkan, 2007, "Development of a Customer Satisfaction Index Model: An Application to the Turkish Mobile Phone Sector," *Industrial Management & Data Systems*, 107(5), 672-687.

Vandenberg, R.J., 2006, "Statistical and Methodological Myths and Urban Legends: Where, Pray Tell, Did They Get This Idea?" *Organizational Research Methods*, 9(2), 194-201.

Walden, G.R., 2009, *Focus Groups: A Selective Annotated Bibliography* (Vol. 2), Lanham, Md.: Scarecrow Press.

Westbrook, R.A., and M.D. Reilly, 1983, "Value-Percept Disparity: An Alternative to the Disconfirmation of Expectations Theory of Consumer Satisfaction," in R.P. Bagozzi and A.M. Tybout (eds.) *NA - Advances in Consumer Research*, (pp. 256-261) (Vol. 10), Ann Abor, MI: Association for Consumer Research.

Winnie, Y.L.W., and G.K. Kanji, 2001, "Measuring Customer Satisfaction: Evidence from Hong Kong Retail Banking Industry," *Total Quality Management*, 12(7-8), 939-948.

Yu, C.M.J., L.Y. Wu, Y.C. Chiao, and H.S. Tai, 2005, "Perceived Quality, Customer Satisfaction, and Customer Loyalty: The Case of Lexus in Taiwan," *Total Quality Management & Business Excellence*, 16(6), 707-719.

Zaim, S., A. Turkyilmaz, M. Tarim, B. Ucar, and O. Akkas, 2010, "Measuring Customer Satisfaction in Turk Telekom Company Using Structural Equation Modeling Technique," *Journal of Global Strategic Management*, 7(June), 89-99.

Zeithaml, V.A., 1988, "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52(3), 2-22.

Zeithaml, V.A., L.L. Berry, and A. Parasuraman, 1996, "The Behavioral Consequences of Service Quality," *Journal of Marketing*, 60(2), 31-46.