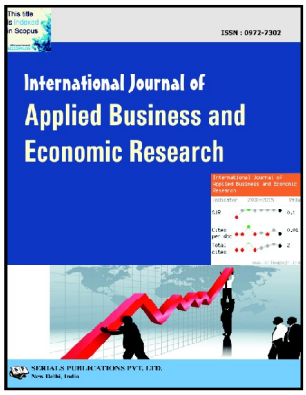

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Customer Satisfaction and Online Retail Service Quality: A SEM Approach

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Abstract: Background/Purpose of the Study: The measurement of Service quality has evolved from Importance Performance Analysis (Martilla and James, 1977) to SERVQUAL (Parasuraman et al., 1985) and SERVPERF models (Cronin and Taylor, 1992). Moreover, service quality in retail environment has been modified to a new scale 'Retail Service Quality' or RSQ (Dabholkar, 1996). In an online retail environment, service also encompasses the 'Ease of Use' of the electronic platform in the absence of physical interaction (Panda and Swar, 2014). It is an established fact that good marketers strive towards enhancing customer satisfaction which is also an outcome of service quality. Hence this paper aims at using an Online Retail Service Quality (ORSQ) scale and builds its relationship with customer satisfaction on an online environment.

Methodology: The paper has made an attempt to adopt Retail Service Quality (RSQ) model for online retail environment with addition of required variables. In addition it has used Structural Equation Modeling (SEM) to build relationship of ORSQ with Customer Satisfaction.

Findings: The empirical study suggests that ORSQ scale consist of Reliability, Ease of Use, Problem Solving and Policy is positively related to customer satisfaction. The construct 'physical appearance', which was earlier considered in RSQ scale, has been dropped for online environment. The construct 'personal interactions' has been replaced by 'ease of use'. The findings suggest that ORSQ is an antecedent to Customer Satisfaction in an online environment.

Key words: Service Quality, Online Retail, Customer satisfaction, Ease of Use

INTRODUCTION

Service quality has been found to be critical in building consumer satisfaction, increasing customer retention and hence improving sales and profit. However, quality has been interpreted differently and defining quality

in services and measuring service quality has been a big challenge to retailers (Finn and Lamb, 1991). To differentiate themselves the retailers can use service quality as an effective tool (Chao et al., 2007). Parasuraman et al. (1988) proposed a scale with 22 statements to measure the gap between consumers' perceptions and expectations. Many practitioners have recently focused on improving online service quality to attract more potential buyers and also to retain existing buyers to survive in today's competitive market. Organizations should focus on online service including all aspects of service occur during, before, and after the actual transactions (Zeithaml, 2002). Internet can be used properly to increase the overall service offerings and to provide online customer service with a variety of benefits like, ease of ordering products/services, enquiring about the availability of product/service, finding and comparing of competitive prices, and making a rationale purchase decision (Griff and Palmer, 1999). But just use of internet is not enough; online retailers must use the online platforms to expand their loyal customer base by understanding what really quality means to online shoppers. Several researches have studied issues related to service quality in the context of offline retail setting. However, when it comes to online retail there are few. Hence this paper aims at modifying the existing Retail Service Quality (RSQ) dimensions to suit online retailing and builds its relationship with customer satisfaction on an online retail environment.

REVIEW OF LITERATURE

Service Quality

The measurement of Service quality has evolved from Importance-Performance Analysis (Martilla and James, 1977) to Service Quality (SERVQUAL) model (Parasuraman et al., 1985) and Service Performance (SERVPERF) (Cronin and Taylor, 1992) models. Service quality can be defined as the customers' overall impression of the relative inferiority/superiority of a service provider (Parasuraman et al., 1988). This impression is often considered similar to the customer's overall attitude towards the organization (Bitner, 1990). The Service Quality scale developed by Parasuraman et al. (1988) has also been used in various sectors including retail services. However, in a later stage to apply specifically in retail environment, the service quality has been modified to a new scale 'Retail Service Quality' or RSQ (Dabholkar et.al., 1996).

Retail Service Quality (RSQ) versus Online Retail Service Quality (ORSQ)

The service quality model developed by Parasuraman et al. during 1985 focused on the five dimensions of SERVQUAL, known as tangibility, assurance, reliability, empathy and responsiveness. This scale has been applied to various studies. Later, Dhabolkar et.al, in 1996 argued that SERVQUAL is more appropriate for pure service rather than retail stores. Hence, based on the literature, Dhabolkar, Thorpe and Rentz (1996) came with a new scale specifically for retail format. The scale consisted of five key dimensions which include: personal interaction, reliability, physical aspects, problem solving and policy.

However, few dimensions like physical aspects and personal interaction suggested by Dabholkar et al., (1996) in RSQ are not relevant in online environment. In an online retail environment 'physical aspects' and 'personal interactions' can be replaced by interactions on websites. And in such online retail environment 'ease of use' of the website is relevant for online shopping (Panda and Swar, 2014).

Customer Satisfaction

Customer satisfaction is an output, generating from the comparison of expected service performance with perceived service performance (Churchil and Surprenant, 1982). Parasuraman et al (1994) suggest that satisfaction generally influenced by three factors like product quality, service quality, and price. They conducted several researches on satisfaction and found that overall satisfaction is a function of various transactions.

Customer satisfaction is considered as a discrepancy between customer's perception after purchase and their expectations before purchase (Anderson & Sullivan, 1993; Oliver, 1977, 1980), and it will be significant when perceptions exceed expectation. Customer satisfaction is found to be dependent on service quality delivered to the customer and is one of the most important instruments to enhance customer value (Sivadas & Baker-Prewitt, 2000). With increase in customer value, the satisfaction level of customer also goes up which eventually benefits the retailers in retaining their customer (Zeithaml, Berry, & Parasuraman, 1996; Cronin, Brady, & Hult, 2000), and in generating more sales for them (Aaker & Jacobson, 1994).

Service Quality and Customer Satisfaction

Managing service quality and ensuring customer satisfaction are two major challenges for today's service marketers (Hung, Huang, & Chen, 2003; Anderson & Sullivan, 1993). There is no doubt that customer satisfaction is a powerful tool like service quality and it can be achieved by meeting customer expectations (Jayasankaraprasad & Kumar, 2012; Homburg, Koschate, & Hoyer, 2006; Bahia, Paulin, & Perrien, 2000). Researchers felt that there is a positive association between service quality perceptions by the customer and customer satisfaction (Taylor & Baker, 1994; Cronin & Taylor, 1992) and concluded that ensuring service quality will lead to increase in the satisfaction level of customer. Service quality has also been found to be an antecedent to customer satisfaction (Kitapci, Dortyol, Yaman, & Gulmez, 2013; Jayasankaraprasad & Kumar, 2012; Amin & Isa, 2008; Caruana et al., 1998; Anderson & Sullivan, 1993; Carman, 1990; Parasuraman et al., 1985, 1988).

Perry John Forsythe (2016) conducted a study on construction service and found that customer satisfaction is closely related to service quality. Similarly, Charles k. Ayo Aderonke Atinuke Oni Oyerinde J. Adewoye Ibukun O. Eweoya, (2016) revealed that in online banking, e-service quality has a strong influence on customer satisfaction. While conducting a survey on hotel services, Carol Lu, Celine Berchoux, Michael W. Marek and Brendan Chen (2015) explored that service quality and customer satisfactions are closely related. In their study on banking services Hashim Zameer, Anam Tara, Uzma Kausar and Aisha Mohsin (2015) also concluded that there is a positive association between the service quality and customer satisfaction.

The study conducted by Yasser Mahfooz (2014) also reported that there is a positive and significant association between retail service quality and customer satisfactions. Beom Joon Choi and Hyun Sik Kim (2013) indicated that service quality has a significant influence on customer satisfaction, and in turn, it influences customer loyalty. Michel Rod Nicholas J. Ashill Jinyi Shao Janet Carruthers, (2009) conducted a study on Internet banking service in New Zealand and revealed that service quality has significant influence on customer satisfaction. Parikh (2006) used the RSQ scale in Indian retail and found that the scale was reliable to measure service quality in retail sectors.

RESEARCH OBJECTIVES

The objective of the paper is to explore the antecedent of customer satisfaction in online retail environment. The scale has been designed by modifying the existing RSQ scale developed by Dabholkar et al., (1996).

RESEARCH HYPOTHESES

One of the constructs 'Reliability' in Retail Service Quality (RSQ) scale has been found to be significant in predicting customer satisfaction (Jamal & Anastasiadou, 2009; George & Kumar, 2014). According to Yuen & Chan (2010), when retailers deliver what they promises, then the retailers become more reliable and this increases customer satisfaction. This has helped us to develop our hypothesis as:

H1: Reliability is positively associated with customer satisfaction.

Problem solving is about the interaction between employees and customers and employees engagement in service recovery and complaint handling process to ensure positive customer evaluation (Evanschitzky et al., 2008; Kelley & Davis, 1994). Moreover, problem solving has a significant impact on customer satisfaction if the employees helped customer in solving their problem (Yuen and Chan, 2010; Das et al., 2010). So, our proposition is:

H2: Problem solving is positively associated with customer satisfaction.

Policy, in retail services includes credit facilities, quality of offerings and delivery options (Evanschitzky et al., 2008). Here, it has been found that retail stores with good facilities enhance favorable consumer perception and satisfaction (Thang and Tan, 2003). Hence, we developed the following hypothesis:

H3: Policy is positively associated with customer satisfaction.

To understand consumer behavior many researchers have used 'attitude', which is an important construct of Technology Acceptance Model (TAM). Technology Acceptance Model (TAM) (Davis et al., 1989) has very beautifully explained the concept of the behavioral intentions of the consumer (Shin, 2010; Legris et al., 2003). The constructs of TAM include 'ease of use', 'usefulness' and 'attitude' to understand the factors lead to retail service quality. According to Minjoon Jun, Zhilin Yang and DaeSoo Kim (2004), 'Ease of use' had significant and positively related to service quality. So, 'ease of use' has been used as an additional construct for online retail service quality (ORSQ) in the study. This has helped us to develop our hypothesis as:

H4: Ease of use is positively significant with customer satisfaction.

Similarly, during initial screening we dropped the 'physical aspects' dimension, which is of no relevance in online settings. Hence, the authors have proposed a new model with four dimensions for retailers to evaluate the online retail service quality like reliability, ease of use, problem solving and policy. These four dimensions together consist of Online Retail Service Quality (ORSQ) that influence customer satisfaction.

RESEARCH METHODOLOGY

This paper used ORSQ model of service quality by modifying the constructs from RSQ as suitable for online retailing. In addition it has used Structural Equation Modeling (SEM) to build relationship of ORSQ dimensions with Customer Satisfaction. To achieve this, the authors initially developed the scale with 22

items on the basis of existing literature. The authors adopted the scale from the existing model of RSQ scale developed by Dabholkar (1996) and customer satisfaction (Maxham and Netemeyer, 2002; Oliver and Swan, 1989). To collect the data, a questionnaire has been designed with a five-point likert scale (1 = strongly disagree and 5= strongly agree). The questionnaires were distributed to 410 customers and 355 usable questionnaires were collected, with an 86.58 percent response rate. Confirmatory factor analysis was conducted to analyze the data and SEM has been used for the validation of the proposed model. For this purpose, we have calculated goodness of fit index (GFI), adjusted goodness of fit index (AGFI), chi-square, comparative fit index (CFI) and root mean square error of approximation (RMSEA).

DEMOGRAPHIC ANALYSIS

Table 1 gives an overview of the demography of the sample, out of 355 respondents, 64 percent (227) were male and the remaining 36 percent (128) were female. When it comes to age group, 56 percent of the respondents were in the range of 16-34 years; 20 percent were 35-44 years; 12 percent were 45-54 years; 9 percent were 55-64 years and 3 percent were more than 65 years. With regards to educational qualifications, 33 percent were graduates, 48 percent were under graduates and 19 percent were post-graduations. With respect to the average frequency of usage of Internet, 65 percent of the respondents had purchased once in three months or once in a month. 20 percent, 2- times in a month; 11 percent, once a week; 4 percent shop more than once a week.

Table 1
Demographic Analysis

Demographic Characteristics	*Measures*	*Frequency*	*Valid Percentage*
Gender (n=355)	Male	227	64
	Female	128	36
	Total	355	100
Age in years (n=355)	16-24	85	24
	25-34	113	32
	35-44	71	20
	45-54	43	12
	55-64	32	9
	More than 65	11	3
	Total	355	100
Education (n=355)	High School or lower	71	20
	College	99	28
	Graduate	117	33
	PG	68	19
	Total	355	100
On an average, how often do you use retailers' site for online shopping, or otherpurposes? (n=355)	Once in three months	135	38
	Once a month	96	27
	2-3 times in a month	71	20
	Once a week	39	11
	More than once a week	14	4
	Total	355	100

Source: Primary data

DEVELOPMENT OF THE INSTRUMENT

The scale for measuring the respective constructs used in this study are adapted from the studies done in the past and modified as per requirement that have been validated to be reliable. The final measurement scale consists of 22 variables as shown in Table 2. Before testing the hypotheses, the scales were tested for reliability using Cronbach's alpha (Nunnally, Bernstein, & Berge, 1967).

(1) Construct Reliability (CR): The constructs 'reliability', 'policy', 'problem solving' and 'ease of use' were tested for construct validity by finding out their Cronbach's alpha value and all the constructs' alpha values were more than 0.70 and hence, all the constructs were found to be reliable (Nunnally, 1978) (Table 3). Mean, standard deviation and the factor loadings of the complete model have also been calculated (as shown in Table 2).

Table 2
Factors and factor loading of the Scales

Constructs	*Items*	*Mean*	*S.D*	*Loading*
Reliability (R)	R1: Online store keep its promise. (Example: delivery is done before the promised time.	3.15	1.373	.938
	R2: Online store provides its services as promised	3.32	1.236	.823
	R3: Online store performs the service right the first time	3.19	1.257	.715
	R4: Online store has merchandise available as per customer requirement	3.10	1.310	.880
	R5: Online store provides error-free transaction records	2.96	1.261	.844
Ease of Use (EU)	EU1: Use of websites made me competent.	3.35	1.525	.683
	EU2: Website is easy to operate	3.46	1.186	.909
	EU3: Web site is flexible for interaction	3.38	1.181	.888
	EU4: Website interaction is understandable and clear	3.31	1.110	.764
	EU5: Use of Web site is easy	3.42	1.125	.841
Problem Solving (PS)	PS1: Online store allows its customer to returns and exchanges	3.46	1.296	.859
	PS2: Online store shows sincere interest in solving customer problem	3.35	1.288	.803
	PS3: Employees engaged at the helpdesk (callcentres, chat etc.) are able to process customer complaints quickly	3.38	1.355	.872
Policy (P)	P1: This online store offers high quality merchandise.	3.61	1.243	.893
	P2: The online store has the provision of cash on delivery facilities.	3.70	1.194	.893
	P3: This online store delivery charges are reasonable.	3.66	1.237	.966
	P4: This online store accepts most major credit cards and online payment avenues.	3.61	1.306	.950
	P5: This online store has easy and quick return and exchange policies.	3.79	1.209	.878
Customer Satisfaction (CS)	CS1: Shopping merchandise from online store is a good idea.	2.98	1.259	.875
	CS2: Shopping from the online store is a pleasant experience.	3.13	1.167	.920
	CS3: I like shopping from the online store.	2.96	1.307	.908
	CS4: Experience of online shopping from the store gives me overall satisfaction.	2.97	1.352	.925

Source: Primary data

(2) Validity Analysis: A Validity analysis was mainly done through convergent and discriminant validity.

(i) Convergent Validity: To confirm convergent validity, the variable must produce similar results on different ways of measure (O'Leary-Kelly & Vokurka, 1998). For this purpose we have calculated Cronbach's alpha (construct reliability-CR) and average variance explained (AVE). The criteria for convergent validity are: the CR should be more than 0.70, the AVE should also be more than 0.50 and the CR should be more than AVE (Hair, Ringle, & Sarstedt, 2010). In our case the above criteria satisfied (as shown in Table 3). Thus, all pre-requisites of convergent validity satisfied for all individual constructs.

(ii) Discriminant Validity: The discriminant validity of the scales was assessed as per the guidelines given by Fornell and Larcker (1981). As per the guidelines the square root of the AVE from the construct should be more than the correlation between the construct and other constructs in the model. As shown in Table 4 all the diagonal values exceeded the inter-construct correlations; therefore the discriminant validity was acceptable. Thus, we conclude that the scales have sufficient construct validity.

Table 3
Validity Estimates

Constructs	*Construct Reliability*	*Average Variance Explained (AVE)*	*Reliability*	*Construct Validity*
Reliability	.923	0.711	Yes	Yes
Ease of Use	.898	0.674	Yes	Yes
Problem Solving	.881	0.714	Yes	Yes
Policy	.962	0.814	Yes	Yes
Customer Satisfaction	.949	0.823	Yes	Yes

Source: Primary data

Table 4
Correlations of Latent Variables
Constructs

Constructs	*AVE*	*Reliability*	*Ease of Use*	*Problem Solving*	*Policy*	*Customer satisfaction*
Reliability	0.711	**.843**				
Ease of Use	0.674	.325	**.821**			
Problem Solving	0.714	.486	.538	**.845**		
Policy	0.814	.612	.447	.544	**.902**	
Customer Satisfaction	0.823	.575	.525	.697	.306	**.907**

Source: Primary data

VALIDATION OF THE MODEL

After qualifying both the reliability and validity test of individual constructs as well as the overall measurement model, we have proceeded to find out the fitness of the overall measurement model based on model fit indices generated as a part of AMOS output. Model fit indices were used to assess the overall goodness of fit of the structural model: comparative fit index (CFI), goodness of fit index (GFI), adjusted goodness of

fit index (AGFI), chi-square and root mean square error of approximation (RMSEA). The overall fit indices of the research model have been shown in Table 5. The fit indices for the full model are: comparative fit index (CFI)=.960, goodness of fit index (GFI)=.871, adjusted goodness of fit index (AGFI)=.836, chi square=2.92*** and root mean square error of approximation (RMSEA)=.074.

Table 5
Model Fit Indices (Proposed Model)

Indices	*Recommended Value*	*Model Fit Indices*	*Remarks*
GFI	≥ 0.90	.871	Almost fits
CFI	≥ 0.95	.960	Appropriately fit
CMIN/df	<3	2.92	Appropriately fit
AGFI	≥ 0.80	.836	Appropriately fit
RMSEA	≤ 0.08	.074	Appropriately fit

Source: Primary data

The significance of the individual paths was examined to test the hypotheses and the same has been summarized in Table 6. It shows that all the construct relationship is significant. The results in the Table 6 indicate that the pathways from reliability to customer satisfaction (β = 0.447, CR=14.013) (H1), problem solving to customer satisfaction (β = 0.356, CR=13.393) (H2), policy to customer satisfaction (β = 0.097, CR=5.988) (H3) and ease of use to customer satisfaction (β = 0.194, CR=8.103) (H4), are significant. This shows that all the hypotheses are found significant for the model.

Table 6
Results of SEM and Hypothesis Testing

Hypothesis: Construct relationship	*Standardized Regression Weight*	*Critical Ratio*	*p-value (Sig)*	*Status*
H1: Reliability → Customer Satisfaction	.447	14.013	***	Sig
H2: Problem Solving → Customer Satisfaction	.356	13.393	***	Sig
H3: Policy → Customer Satisfaction	.097	5.988	***	Sig
H4: Ease of Use → Customer Satisfaction	.194	8.103	***	Sig

Source: Primary data

Note: Sig=significant

The proposed model is as follows:

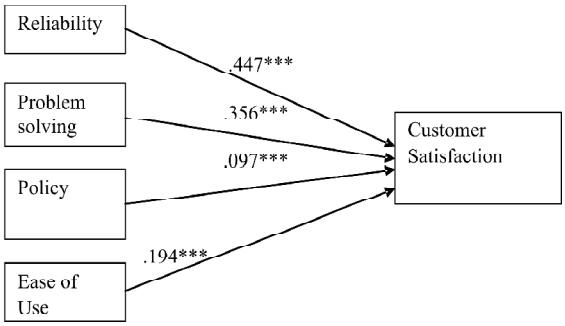

Figure 1: Structural Model

DISCUSSION AND CONCLUSION

The objective of the study was to explore the relationship between customer satisfaction and each of the dimensions of ORSQ in online retail formats. The online retail service quality model consists of four dimensions such as reliability, problem solving, policy and ease of use has been shown in the proposed model. The study hypothesizes (H1 to H4) that the constructs i.e. reliability, problem solving, policy and ease of use are positively associated with customer satisfaction. The significant outcome for H1 in this study consistent with previous studies (Ninh Nguyen, Hoang Long Nguyen, Tuan Khanh Cao & Thi Thu Hoai Phan, 2016; Yasser Mahfooz, 2014), whereby there is a positive association between reliability and customer satisfaction. Similarly, the H2 of the study is also supported by (Thenmozhi, 2014; Ninh Nguyen et al. 2016). Where as the outcome for H3 in this paper is inconsistent with the past studies (Ninh Nguyen et al. 2016), wherein they found that policy is not significant with customer satisfaction. However, their study was conducted in an offline setting. The findings of our study with respect to H4 was also supported by (Panda and Swar, 2014; Ribbink et al., 2004; Morris and Turner, 2001), they concluded that 'ease of use' as one of the important dimensions of customer usage of computer technologies which enhance customer satisfaction in online retail shopping format. The results indicate that all the four pathways (H1 to H4) of online retail service quality found to be positive and significant with customer satisfaction (Table 6). Hence, the overall online retail service quality is positively influenced customer satisfaction.

IMPLICATIONS OF THE STUDY

The findings can help the online retailers to improve their customer satisfaction in online retail formats. And by focusing on the determinants of online retail service quality, they can also revisit their strategy to strengthen their customer base and make them happy by considering their impact on customer satisfaction. This study has a number of important implications for understanding and dealing with improving online retail service quality and customer satisfaction. The online retail managers should focus on each of the dimensions of ORSQ to enhance customer satisfaction. Hence, the strategist should focus on reliability, problem solving, ease of use and policy dimensions respectively to strengthen their online retail service quality and in turn to improve their customer satisfaction.

LIMITATIONS OF THE STUDY AND THE WAY FORWARD

The present study was conducted in India. So, similar kind of study can be extended to other countries to understand if ORSQ can be used to measure service quality across different cultures. Finally, the same research issues addressed in this paper may need to be explored in the business-to-business online formats. Moreover, the results provide strong support for the theoretical framework for the determinants of online retail service quality and the relationships among each of these dimensions and their association with customer satisfaction. For the success of retailers, delivery of quality service is essential as service quality will lead to customer satisfaction and like service quality, customer satisfaction is also critical for the success of any kind of retail business. So, the online retailers may focus to enhance the satisfaction level of their customer by improving their online service quality. Online retailers and researchers will definitely find our proposed model as a platform for further research to understand their customers and also to improve service quality and customer satisfaction in online retail settings.

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