Factors of Service Quality and Service-Recovery Quality of Online Retailers

Sandeep Prabhu

Abstract:- The purpose of this research is to explore factors of 'service quality' and 'service-recovery quality' of online retailers in India; and to suggests measurement constructs for 'service quality' and 'service-recovery quality' from customer's perspective. Exploratory factor analysis (EFA) of customer responses of a survey of consumer attitudes is used for data analysis. In the first stage, concepts and constructs of the 'service quality' and 'service-recovery quality' for online retailers are identified through extensive literature review. In the second stage, survey of attitude measurement questionnaire was administered to customers, —who have experienced online shopping over a period of time. A 7-point Likert scale is used for capturing customer responses based on quota sampling technique. EFA is conducted using oblique rotation considering factor dependence. Factors thus identified are further studied for literature support, analyzed for validity and reliability. Exploratory factor analysis using principal component method, identified five factor structure of 'service quality' of online retailers as; e-reliability, e-servicescape, e-technology dissatisfiers, e-security and e-delivery. Research also explored factors of 'service-recovery quality' of online retailers as; e-support and e-compensation. The proposed factors of 'service quality' and 'service recovery quality' of online retailers can be useful in improving service product offers. The designed research constructs can be operationalized for better online shopping consumer experience. Considering retail customer channel shift from offline retail shops to online retail, this research is a latest consumer perspective towards online buying. Identified factors is useful inputs to design online retail service quality by improving retail operations.

Keywords: consumer behavior, exploratory factor analysis, online retail, service recovery, service quality

I. INTRODUCTION

Service gaps model, and SERVQUAL measurement scale are important milestones in the service quality literature. But, considering current shift of consumer buying to online buying, new approach to internet service quality of online retailers is required. Literature suggest various conceptual approaches. E-S-QUAL measurement scale is a well-received measurement scale of internet service quality of retail. This research explores factor structure of service quality and service recovery quality of online retailers and suggest factor structure from Indian consumer perspective.

II. LITERATURE REVIEW

Early literature in service quality differs with each other, on conceptualization and operationalization of the concept. Parasuraman (Parasuraman, Zeithaml, & Berry, 1985) made first effort to operationalize the service quality concept,

based on Grönroos philosophy of differential of customer expectations and customer perceptions; —and suggested service gaps model and SERVQUAL – a service quality measurement scale (Grönroos, 1984). SERVQUAL and allied service quality literature theorizes five factor structure of service quality as tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman, 1988).

Service quality operationalization has seen significant changes in its forms and formats over half a decade of literature (Prabhu, 2016). The initial efforts followed formation of alternative service quality scales, in deferring formats like; performance only scale SERVPERF (Cronin & Taylor, 1992), retail service quality scale RSQS (Dabholkar, 1995), internal service quality scale INTSERVQUAL (Frost & Kumar, 2000). There are substantial efforts to redefine service gaps with additions of newer gaps like; seven gaps model (Luk & Layton, 2002), fifteen gap model (Nwabueze, 2001). In last two decades application of ICT has reactivated service quality applications at industry and academic literature meaningfully.

Initial gaps-based service quality measure SERVQUAL scale was designed based on personal interactions between consumer and frontline service employees. On the contrary, online retail shopping does not need personal interactions per say, but a strong technology support. In this view the internet service quality of retailer should be different than older approach of SERVQUAL tool (Long & McMellon, 2004).

Online shopping is a major change in retail industry over past few years. This new distribution channel has changed the attitudes and perceptions of retail customers. Increasing number of customers all over the world are adopting to online shopping of goods. Internationally firms like Amazon, Alibaba; and India's geographical major Flipkart; and other players Croma, eBay, Jabong, Koovs, Myntra, OLX, PaytmMall.com, Quikr, Shopclues, Snapdeal, TataCLiQ, and many others are successfully changing the consumer channel behavior. In this backdrop, this research aims to organize online retail service quality literature and explore factors of online retail service quality.

A. Factors of internet service quality of retail.

In an early effort to understand online retail service quality, in-depth interviews of online consumers were conducted. These in-depth interviews identified five factors as performance–meeting expectations, access–ability of providing product variety, security – integrity to financial information and privacy, sensation–website interactivity,

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and information – credibility of information made available by the website (Trocchia & Janda, 2003). Considering that online retail service does not require interpersonal, face-to-face interactions; the factor structure of online retail is suggested as tangibility, assurance, reliability, purchase process, and responsiveness; here purchase process is emerged as a new factor for online service quality (Long & McMellon, 2004).

B. E-S-QUAL service quality measurement tool.

In 2004, Parasuraman suggested E-S-QUAL – a service quality measurement tool for online retail (Parasuraman, Zeithaml, & Malhotra, 2005). E-S-QUAL suggests, four factors of online retail service quality as efficiency, system availability, fulfillment, and privacy; where; efficiency is website accessing ease and speed, system availability is website's technical correctness, fulfillment is its adherence to website promise of product availability & delivery, and privacy is website safety for customer.

An extensive content analysis of 111 women apparel selling websites based on efficiency, options made available during browsing, search engine provided, alternative ordering methods, fulfillment, payment options, delivery, availability of system, privacy, responsiveness, contact provided, company contact details, personalization for customer, items suggestions, promotions, presence of virtual community, information, product size chart, description of products, graphic style, number of alternative images, picture size, and image size;— consistency indicated low online service attributes followed by the industry (M. Kim, Kim, & Lennon, 2006).

Website playfulness also have significant enhancing relationship with consumer attitude towards retail website, further leading to behavioral intentions. System quality, information quality, and service quality; all leads to playfulness, perceived ease-of-use, and perceived usefulness;— these further leads to consumer attitude, and further to consumer behavior (Ahn, Ryu, & Han, 2007). Study designed on extension of base technology acceptance model (TAM) (Davis, 1986), consumer repurchase intention in online shopping, suggests four factor structure of trust, perceived ease-of-use, perceived usefulness, and enjoyment (Chiu, Chang, Cheng, & Fang, 2009).

Online internet service quality, Customer satisfaction to Customer loyalty link.

Customer satisfaction and service quality link is extensively discussed in the literature, but in-view of online retail, e-CSI model proposes a customer satisfaction Index of online customer satisfaction signifying complex relationship of e-SQ, trust, perceived value, overall CSI, customer complaints, and customer loyalty (Hsu, 2008). Research indicates predictive relationship of online retail service quality represented as; – privacy/ security, website content/functionality, customer service, and atmospherics/experiential; – to e-shopping satisfaction and e-shopping intention (Ha & Stoel, 2012).

Another research in customer loyalty suggests reputation along with website quality as predictors to emotions and perceived risk, then leading to purchase intention. Reputation gets built up through traditional media exposure,

branding, and word-of-mouth, as well as social networking media. Social media reviews, product-price information all build up reputation of online retail websites. While website quality is suggested as website design, fulfillment/ reliability, customer service, and security/ privacy is internal source of information; reputation is external source of information (J. Kim & Lennon, 2013). E-service quality conceptualization based on earlier work by Dabholkar et al. (Dabholkar, Shepherd, & Thorpe, 2000) supports three research models involving – environmental quality, delivery quality, and outcome quality having predictive relation with, – 1. global e-service quality to behavioral intentions, – 2. direct behavioral intention and, – 3. formative e-service quality to behavioral intention (Carlson & O'Cass, 2011).

C. Research gap.

Online retail being a recent phenomenon, even though extensive literature on the topic is available, the changing e-retail shift from off-line to online retail makes it relevant to understand the factors of online retail service quality. Further the Indian industry perspective would be relevant considering large and dynamic market crowded by national and international online retailers. Currently no noteworthy literature is available on service quality and service recovery quality of online retail.

D. Objective.

The objective of this research is to explore factors of service quality and service-recovery quality of online retailers in India from consumer perspective, and suggest a scale for measurement of service quality and service-recovery quality for online retailers.

III. METHODOLOGY

The study is quantitative is nature and uses descriptive research design. It intends to improve upon E-S-QUAL measurement scale suggested by Parasuraman (Parasuraman et al., 2005). Exploratory factor analysis (EFA) is conducted to identify factors of online retail service quality and service-recovery quality in Indian context. 33 item structured questionnaires were developed in Indian context. Based on inputs from literature seven constructs of website convenience (8 items), website technical system (4 items), order processing (7 items), website privacy & security (3 items), recovery-response (5 items), recovery-solution (3 items), and recovery-customer care (3 items) is used for data collection. Likert's 1 (strongly disagree) to 7 (strongly disagree) *is* used consistently across all questions. Questionnaire has two parts; first part collecting demographic and behavioral data and second part, which is a main part – consisting of attitudinal questions. The questionnaire is administered to online retail populations inside to city of Pune, India. Population for the study is defined as customers of online retail companies selling goods, with experience of at least 5 online transactions on various multiproduct online retailer platforms.Population does not include customers of online service products like

internet banking or rail/ bus booking. Sample size for the study at 95% confidence level, approximate standard deviation of 0.75, assuming margin-of-error on 0.08 is arrived at 335. Formula used for determining sample size for the study is

$$n = \left(\frac{Z_{\alpha/2}\sigma}{B}\right)^2.$$

Alternatively, considering 33 items of the questionnaire suggested sample size is 330. The larger of the above two sample sizes (335) is used for this survey. Data is collected under cross-sectional design in the month of Jul-18 to Aug-18. Study adopts to quota sampling technique designed based of characteristics of gender, education group, age group, and income groups. Survey method of data collection involved data gathering using online Google forms, where respondents were contacted using phone and email method.

Current population of Pune district is 5.38 million (Census of India, 2011), while Pune city inhabits to 3.132 million (Pune Muncipal Corporation, 2011). Considering current penetration of online shopping in India at 28% (Statista, 2018), —active users of online shopping is approx.. 900000 in Pune. For sample size of 335, approx. 0.04% populations will be responding to the survey.

IV. DATA ANALYSIS & RESULTS

This research aims at exploring factors of service quality and service-recovery quality of online retailers. Data is analyzed in different stages, at first factor analysis was planned using principal component analysis with oblique rotation; if factors are found to be orthogonal by nature, solution from orthogonal rotation will be used.

The exploratory factor analysis has extracted 7 factors with eigenvalue above 1. These 7 factors explain 74.25% of total variance, indicating a good factor structure. Remaining 26 factors could explain only 25.75% explaining Table I.

Table I. Variance extracted by 7 factors

Factor	Initial Eigenvalues			Extraction SS Loadings			Rotation SS Loadings
	Total	% of Var	Cumu %	Total	% of Var	Cumu %	Total
1	14.350	43.484	43.484	14.350	43.484	43.484	5.571
2	2.943	8.917	52.401	2.943	8.917	52.401	6.822
3	2.026	6.139	58.540	2.026	6.139	58.540	7.987
4	1.825	5.529	64.069	1.825	5.529	64.069	7.399
5	1.397	4.232	68.301	1.397	4.232	68.301	2.536
6	1.283	3.887	72.189	1.283	3.887	72.189	5.259
7	1.012	3.066	75.254	1.012	3.066	75.254	8.521
8							
…	…	…	…				
33	0.048	0.145	100.00				

Contribution of every item scale is analyzed based on communalities values. Minimum communality of 59% is acceptable range, indicating all items are contributing to the factor structure (Table II).

Table II. Item wise communality extracted

	Communality		Communality
WBC1	0.613	PS1	0.867
WBC2	0.607	PS2	0.852
WBC3	0.649	PS3	0.648
WBC4	0.738	RR1_SR	0.813
WBC5	0.677	RR2_SR	0.744
WBC6	0.788	RR3_SR	0.764
WBC7	0.770	RR4_SR	0.751
WBC8	0.804	RR5_SR	0.774
WTS1	0.660	RS1_SR	0.812
WTS2	0.780	RS2_SR	0.800
WTS3	0.728	RS3_SR	0.751
WTS4	0.756	RCC1_SR	0.852
OP1	0.714	RCC2_SR	0.842
OP2	0.783	RCC3_SR	0.850
OP3	0.812		
OP4	0.669		
OP5	0.590		
OP6	0.743		

Factors arrived at are analyzed and researched for the extracted meaning. Based on item wording and underling meaning the factors are grouped in two concepts as, 'online retail service quality', and 'online retail service-recovery quality'. Five factor structure of 'Online retail service quality' are termed as; e-reliability, e-servicescape, e-technology dissatisfiers, e-security and e-delivery. Two factor structure of 'online retail service-recovery quality' are named as; e-support and e-compensation (Table III).

A. Validity and Reliability of the Instrument

Instrument is subsequently tested for validity and reliability. All correlations between factors are as expected, and technology dissatisfiers is inversely correlated with all other constructs. e- technology dissatisfiers are inversely related to online retail activities of e-reliability, e-servicescape, e-security, e-delivery, e-support and e-compensation (Table IV)

Later, the constructs are improvement over Parasuraman's internet service quality scale. The scale is separately content validated from 2 independent expert. Further, the instrument is tested for internal consistency using Cronbach alpha score. The factors arrived are checked for Cronbach alpha internal reliability indicator. Minimum alpha value of 67.3% is acceptable indicating internal reliability *of constructs all the constructs (Table III).*

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358

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Table III. Factor Loadings, Alpha score, Construct reliability and AVE score

Online Retail Service Quality	Factor name	Loadings (λ)	Cronbach alpha
1 My retailer is truthful about its product offerings.	e-reliability	0.509	0.897
2 My online retailer tells me what to do during transaction difficulties and failures.		0.496	
3 My retailer offers a meaningful guarantee.		0.479	
4 My retailer handles product return and exchange nicely.		0.444	
5 My online retailer picks up product return from me.		0.402	
6 My retailer's website is well organized.	e-servicescape	0.888	0.881
7 It is easy to get along with my retailer's website.		0.783	
8 All information is well organized on my retailer website.		0.749	
9 My online retailer's website is simple to use.		0.687	
10 I can quickly purchase products on my retailer's website.		0.491	
11 It is easy to surf around on my retailer's website.		0.382	
12 There are no technical difficulties while using my retailer's website.	e- technology dissatisfiers	-0.855	0.876
13 My retailer's website does not crash during use.		-0.798	
14 My retailer's website launches and runs immediately.		-0.771	
15 My online retailer's website loads fast.		-0.759	
16 My retailer's website is always available for buying.		-0.539	
17 My online retailer protects information about my Web-shopping.	e-security	0.787	0.673
18 My retailer does not share my personal information with anyone.		0.747	
19 My online retailer makes it easy to find what I need.		-0.377	
20 My retailer quickly delivers what I order.	e-delivery	0.801	0.909
21 My retailer's delivery duration is acceptable.		0.797	
22 My retailer makes accurate promises about delivery of products.		0.698	
23 My retailer keeps sufficient stock of the ordered products.		0.675	
24 My online retailer delivers products as promised.		0.593	
25 My online retailer delivers product as per order correctly.		0.576	
26 My retailer protects my payment related information.		0.494	

Online Retail Service-recovery Quality	Factor name	Loadings	
27 My retailer has customer service to contact them.	e-support	0.915	0.909
28 I can call my retailer's customer service anytime to solve any problem.		0.905	
29 My retailer has customer service care people available online.		0.897	
30 My retailer provides me with convenient options for return and exchange of products.		0.475	
31 My retailer compensates me when, my order doesn't arrive on time.	e-compensation	0.887	0.803
32 My retailer compensates me for any problems created by it.		0.762	
33 My retailer takes care of my problems promptly.		0.436	

Table IV. Nomological validity: correlations matrix

	e-reliability	e-servicescape	e- technology dissatisfiers	e-security	e-delivery	e-support	e-compensation
e-reliability	1.000						
e-servicescape	0.190	1.000					
e- technology dissatisfiers	-0.279	-0.432	1.000				
e-security	0.312	0.265	-0.255	1.000			
e-delivery	0.145	0.081	-0.167	0.061	1.000		
e-support	0.231	0.185	-0.299	0.306	0.111	1.000	
e-compensation	0.319	0.296	-0.330	0.387	0.123	0.283	1.000

V. DISCUSSION & CONCLUSION

Exploratory factor analysis indicates five factor structure of 'online retail service quality' as; e-reliability, e-servicescape, e- technology dissatisfiers, e-security and e-delivery. These five factors are the most important dimensions defining the concept. The research also suggests two important factors of 'online retail service-recovery' as; e-support and e-compensation. The first factor of 'service quality of online retailer's is e-reliability. This factor is about the truthfulness of product offerings made by the online retailers. This factor is also about uncertainty and fear of transaction failures. The customers look at the solutions under the situation of transaction failures. Since online customers are physically distanced from the retailer, he/she is looking at meaningful product and process related guarantees provided by the retailer. One of the prime concerns of the online customer is process and methodology of handling product returns and exchanges. E-reliability, being the first explored, it is the most important factor for consideration. The second important factor of service quality is e-servicescape. This factor is about organization of online retailer website. Costumers are looking forward to well organized website for efficient searching of product. The website should be easy to go-around and search for products. All relevant information for purchase decision making like; products, delivery schedule, payment methods should be easily available on the website. The website should be simpler to use. It should be quick to respond to search and purchases. Retailer website should be easy to surf, move around and if required pay and make purchases. The third factor, e- technology dissatisfiers, represents consumers apprehensions towards website crash, technical glitches. Customers are apprehensive of technical difficulties faced during online transactions. Possibilities of website crashes is one of the concerns for the customers. Customers expect good website launch speed, fast loading of pages during online transactions. Availability of website whenever required is also important for the customer. Fourth factor of service quality of online retailer is e-security. This factor is about customers confidence of protection of personal information, confidence of privacy of information. Finally, the fifth factor of online retail service quality is e-delivery. These are importance logistics concerns of the customers. This factor is about speed of delivery, accuracy of the delivery, expectations of product delivery duration. E-delivery is also about matching product delivery with promises made. Customer expects correct delivery of the products as well as payment processing.

One of the important components of service quality is service recovery strategy of the service firm. This study also suggests factors of service recovery. The first factor of service-recovery quality is e-support.

The online retailer should have customer support system, to get answer inbound customer calls. The call office employees should be available. The retailer should provide convenient options for product returns and exchanges along with efficient online support. The second service-recovery quality is e-compensation. Customer look forward to compensation for product delays, problems created from retailer end and, fast resolution of problems.

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