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Customer Satisfaction as Mediator Between Website Service Quality and Repurchase Intention: An Emerging Economy Case

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Abstract. The purpose of this research is to develop a research model to understand the important dimensions of website service quality and its influence on repurchase intention. The study also analyzes the mediating effect of customer satisfaction on repurchase intention. The results of empirical analysis confirmed that website quality can be conceptualized as a composite of navigation, ease of understanding, information usefulness, website design, ease of use, security and privacy, ease of ordering, and customization. Second, website quality positively affects repurchase intention and customer satisfaction. Third, website service quality can affect repurchase intention by enhancing mediators like customer satisfaction, as it has full mediating effect on repurchase intention. This study has developed the instrument dimensions of website service quality in online shopping context. The study has also refined the scale of repurchase intention by including “cash-on-delivery” (COD) mode of payment as a new dimension to inculcate confidence for online shopping in emerging economies.

Supplemental Material: The online appendix is available at <https://doi.org/10.1287/serv.2016.0159>.

Keywords: website service quality • customer satisfaction • repurchase intention • online shopping • Internet marketing • navigation • ease of use • information usefulness • website design

1. Introduction

The rapid growth of Internet across the globe has led to a reflective impact on marketing. This has stimulated business houses to adopt e-commerce as a medium to interact with consumers. Similarly, consumers are also inching toward adoption of online shopping with ever-increasing interest to depend on this mode for buying goods. To attract customers and make them visit and revisit their websites, online retailers are venturing on attempts to design their websites according to the consumer’s needs. With the adoption of online shopping, consumers’ expectations have become intricate, and website service quality has emerged as an important factor having positive correlation with the probability of visiting and revisiting the website. Previous studies have proved that higher website service quality can lead to higher profitability (Cristobal et al. 2007). Therefore, it becomes imperative for the online retailers not only to instill confidence among people to purchase online but also encourage them to repurchase. A number of previous studies have focused on online repurchase intention in the technology acceptance model (TAM) and perceived ease of use, perceived usefulness, security and privacy, usability, and functionality based on TAM that can be considered as factors of website service quality (Chen et al. 2010, Zhang et al. 2011).

There is a growing preference to switch over to online shopping in almost all the countries of the world including India. In developed countries there is higher level of penetration of online shopping, while in developing countries it is still in emerging stage but has high prospects of growth. Despite accelerating rate of adoption in online purchasing, Bisen and Singh (2013) have assessed that it is nearly 0.1% of total retail volume in India. This indicates that online retailers in India have yet to come up to the expectation of consumers in satisfactorily delivering quality service. Online retailers in India also lack an accurate measurement tool to investigate the weakness factors in their online service systems. A study by Singh et al. (2006) predicted that websites that adapt to Indian culture were shown to be perceived more favourably. Nair (2009), in his study of Bangalore metropolitan area, indicated that security, communication, and gullibility are the antecedents of perceived trust. Perceived trust and technological comfort are antecedents of actual online buying. Srivastava (2014) studied the mediating role of customer satisfaction between service quality and repurchase intention and findings of the study revealed that customer satisfaction is not a mediator between service quality and repurchase intention in the case of online shopping in India. As evident from these studies, most of these researchers have focussed on online shopping adoption and customer satisfaction.

These studies are also restricted to a specific geographic location with limited sample size. There is limited research reported on website service quality in online shopping context. Further, most of the academic research reported so far has been carried out in countries that adopted online shopping much earlier than India (Tandon et al. 2015a). There has been an accelerating increase in the growth of online shopping in India and in emerging markets of Asia over the past few years, but the research in these markets is somewhat less observed compared to Western countries (Omar et al. 2011). Moreover, emerging markets have diverse institutional contexts in terms of their socioeconomic and regulatory aspects; therefore, the models developed in Western countries need to be validated across these diverse cultures (Palvia 2013, Omar et al. 2011). Accordingly, to fill this gap, the present study attempts to understand important dimensions of website service quality that lead to repurchase intention and customer satisfaction. Consequently, website quality instruments identified and established in developed nations need to be validated in developing nations also so that these may have broad acceptance under diverse cultural scenario. Wolfinbarger and Gilly (2003) also explained problems found in e-service quality instruments by “Little commonality exists among the scales developed for measuring website characteristics to consumers. Some scales focus exclusively on the website interface, while as others attempt to measure the entire purchase transaction” (p. 185). Most of the reported research has considered only simple bivariate links between website qualities and repurchase intentions. There is sparse research focussing on the role of mediating variables like customer satisfaction toward repurchase intention in developing nations. Keeping this in mind, the present study focuses upon understanding the assessment of website service quality on repurchase intentions through customer satisfaction as mediating variable. This study contributes to the literature by examining mediating role of customer satisfaction in the relationship between website service quality and repurchase intention and also refines the existing scale of repurchase intention by analyzing “cash-on-delivery” (COD) mode of payment, which is exclusive in developing countries like India.

2. Theoretical Background and Hypotheses Development

2.1. Internet Penetration and Online Retailing in India

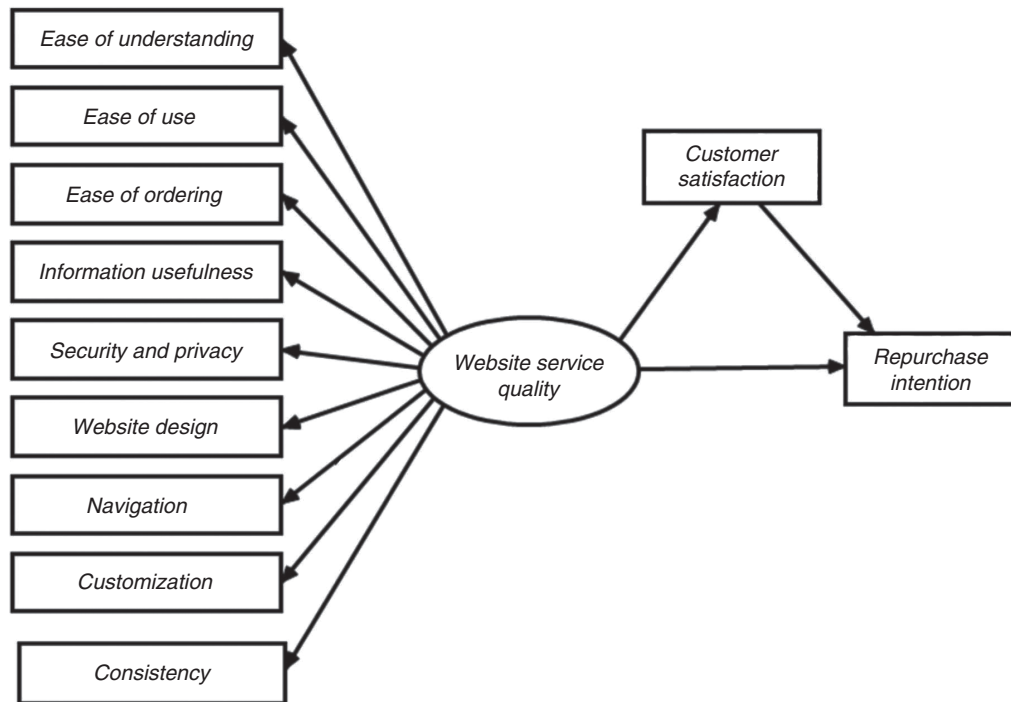
Online shopping has been growing at an overwhelming rate in India, but methodical studies focussing on customer perceptions of online website quality are missing. In 2012, the size of India’s e-commerce market was USD 10 billion, while that of the e-tailing market was USD 0.6 billion. The market size of online retail sector has been pegged at \$3.5 billion in 2014 and is expected to be about \$76 billion by 2021, i.e., more than a hundredfold. In 2012 approximately 120 million Indian consumers accessed the Internet at least once a month (also referred to as active user base). The Internet browsing behaviour of Indians has undergone major transformation in the past two years. Indian consumers today are not only spending longer hours on the Internet but are also performing activities other than accessing emails and casual browsing that were missing a few years ago. For creation of this vast user base, credit is due to the travel portals, online retailers (estimated 200 active e-retailing sites), social media, and the migration to the Internet of government services like Indian Railways reservations and online filing of income tax returns (Bisen and Singh 2013). Online retailers over last few years have invested time, money, and effort to ensure that consumers transact online through multiple means; they have offered convenient online interfaces, attractive offers, and services like COD, equated monthly installments (EMIs), hassle-free returns, etc., and advertised in the mass media (Bisen and Singh 2013). Indian e-commerce sales are expected to reach USD 100 billion by 2020 from USD 22 billion in 2015. With growth in the e-commerce industry, online retail is estimated to reach USD 70 billion by 2020 from USD 3 billion in 2014 (Indian Brand Equity Foundation 2016). Growing aspirations, changing lifestyles, increase in purchasing power of people, and awareness about global brands and fashion trends have driven people to shop online. An important facet of this trend is the rise of the Internet-habituated consumer in cities and towns beyond the top 20 cities. While there is a concentration of demand in the top 8–10 cities, Indian online retailing companies have witnessed an extended clientele in other cities and towns, which account for nearly 50% of the sales for several players.

Drawing literature from previous studies as theory foundation, the present study progressively integrates literature of website quality in online shopping and their relationship with repurchase intention to propose a conceptual model on website quality in India. A conceptual model is proposed to examine the impact of web service quality on repurchase intention and customer satisfaction. Figure 1 shows the model relationships and hypotheses. The individual components are discussed, and related hypotheses are stated in Section 2.2.

2.2. Website Service Quality

Online retailers with experience have realized that the key determinants of success or failure are not merely website design but also website service quality (Zhou et al. 2009, Bai et al. 2008, Aladwani and Palvia 2002, Shin et al. 2013). Aladwani and Palvia (2002, p. 469) have defined website quality as “users’ evaluations of a website’s features meeting users’ needs and reflecting overall experience of website.” A number of researchers

Figure 1. Hypothesized Model



have demonstrated that website quality leads to satisfaction (Wolfenbarger and Gilly 2003, Lee and Lin 2005, Shin et al. 2013). Website service quality is the perceived as an overall quality of an online shopping site according to customer's viewpoint. Therefore, while evaluating an online retailer's website, understanding which aspects of the website are preferred by the consumer has become the main concern of online retailers.

2.3. Theories of Website Service Quality

Customer-perceived service quality can be defined as a global judgement or attitude related to the superiority of a service relative to comparative offerings (Parasuraman et al. 1988). The attributes (tangibles, reliability, responsibility, assurance) developed by Parasuraman et al. (1988) constitute the base of global measurement device for service quality: SERVQUAL. But SERVQUAL may not be adequate for measuring service quality across the industries and situations, not to state online service quality. The instrument lacks unique facets of online service quality, since the five dimensions address customer-to-employee interactions but not customer-to-website interactions (Yang et al. 2004). Parasuraman and Grewal (2000) proposed that research is needed on whether the definitions and relative importance of SERVQUAL dimensions change when customers interact with technology rather than with service personnel (p. 171). Consequently, a number of researchers have identified key attributes that best fit in online business environment. Zeithaml et al. (2000, 2002) identified dimensions of e-service quality: efficiency, reliability, fulfillment, privacy, responsiveness, compensation, and contact. The first four were classified as core service scale and the remaining three as recovery scale. Parasuraman et al. (2005) also developed a 22-item E-S-QUAL scale comprising four dimensions: efficiency, fulfillment, system availability, and privacy. Further, Parasuraman et al. (2005) developed submodel E-RecS-QUAL for service recovery quality consisting of responsiveness, compensation, and contact. Loiacono et al. (2007) developed WebQual™ comprising informational fit-to-task, interactivity, trust, ease of understanding, intuitive operations, visual appeal, consistency, and online completeness. The scale has also been empirically validated in several different countries, including the United States, China, Australia, Cyprus, Hong Kong, Korea, South Africa, Netherlands, and the United Kingdom.

2.4. Website Service Quality Dimensions

Online shopping is a confound process involving the interaction of man and machine. It is divided into sub-processes like navigation, downloading, online payment, and customer interactions. Online shoppers, therefore, anticipate a high level of service quality. Ranganathan and Granapathy (2002) identified the key dimensions of website service quality as information content, design, and security and privacy. Wolfenbarger and Gilly (2003)

validated an instrument to measure e-service quality based on website design, reliability/fulfillment, privacy/security, and customer service. A five-item scale representing attitude toward website and loyalty intentions was also conceptualized in the study. Barnes and Vidgen (2001) provided an index of website service quality and structured it into five dimensions: usability, design, information, trust, and empathy. Yoo and Donthu (2001) measured website service quality on four dimensions: ease of use, aesthetic design, processing speed, and security. Santos (2003) asserted that it is crucial to provide a well-organized, well-structured navigable site with concise and understandable content to enhance online purchase. Lee and Lin (2005) modified SERVQUAL model for online shopping and included website design, reliability, responsiveness, and trust in overall service quality. Mithas et al. (2006) emphasized website structure, website content, and website functionality as important dimensions of website service quality. Ahn et al. (2007) stated that the website service quality is a multidimensional construct comprising information quality, system quality, and service quality. Floh and Treiblmaier (2006) emphasized that website service quality includes web design, structure, and content. Swaid and Wigand (2009) found that e-service quality is a measure of website design, information quality, usability, reliability, responsiveness, assurance, and presentation. Wang et al. (2010) underlined web aesthetics and web usability as important dimensions of website service quality. Treiblmaier and Pinterits (2010) accentuated the role of enjoyment, usefulness, and ease of use in website service quality. Zhou et al. (2009) highlighted the significance of website design and service quality affecting consumers' online repurchase behavior. Results of their study confirmed that service quality has significantly stronger effects on consumers' trust and satisfaction, both leading to their repurchase intention, but explained variance of trust and satisfaction in the study were around 50% depicting that there may be other factors that may affect these two constructs. Kuo et al. (2009) studied the relationships among service quality, perceived value, customer satisfaction, and post-purchase intention with respect to mobile value-added services. Results of the study confirmed that service quality influences customer satisfaction, which, in turn, influences post-purchase intention. Service quality has an indirect positive influence on post-purchase intention also. Udo et al. (2010) found website content and service convenience as important dimensions of website service quality. Shin et al. (2013) identified website service quality as a composite of six dimensions of shopping convenience, site design, information usefulness, transaction security, payment system, and customer communications.

All these scales have emphasized important aspects of website service quality but have been developed in countries that adopted online shopping prior to India. Taking cognizance of the previous studies, the present paper has identified ease of use, security and privacy, navigation, website design, ease of understanding, consistency, and information usefulness as important website service quality factors. In general, information usefulness is one of the reasons that many consumers benefit from online shopping. Website design and navigation provide physical environment of an online shopping website triggering online purchase. Security and privacy in terms of online transactions and personal information is important to build confidence in online shopping. For developing nations like India where online shopping has picked up only recently, ease of ordering has been added as an additional website service quality factor. Therefore, to assess the contribution of each dimension, website service quality is conceptualised as a composite of nine dimensions (*ease of use, security and privacy, ease of ordering, navigation, website design, ease of understanding, customization, consistency, and information usefulness*), and the following hypothesis is proposed:

Hypothesis 1 (H1). *Website service quality is a multidimensional construct comprising website design, security and privacy, navigation, information usefulness, customization, ease of use, ease of ordering, and ease of understanding.*

2.5. Customer Satisfaction

Customer satisfaction has been defined as "customer's fulfillment response," which is an evaluation as well as an emotion-based response (Oliver 1997, p. 13). It is sign of customer's belief of the probability of service leading to a positive outcome. Bansal et al. (2004) found website characteristics, the specific website's value, and its relative value as important drivers of website satisfaction. Ha et al. (2010) highlighted the role of positive attitude in the formation of a customer-satisfaction and repurchase intention. There is a significant relationship between website quality and user satisfaction, and this relationship affects the actual use of online services (Li and Jiao 2008, Gounaris et al. 2010, Udo et al. 2010).

It becomes imperative to identify which factors of website service quality have the most positive effect on customer satisfaction. According to Shankar et al. (2003), customer satisfaction is relationship specific, derived from the effect of a series of discrete service encounters or transactions with online vendors over a certain time period. A customer's decision to be loyal to a website depends on these service encounters. These encounters may vary across countries. In this research, *website design, security and privacy, navigation, information usefulness, ease of use, customization, consistency, ease of ordering, and ease of understanding* are selected as indicators of *website*

service quality because when consumers visit an online store, these factors may be important encounters. Thus, to investigate the effect of *website service quality* on *customer satisfaction* in Internet shopping, the following hypothesis is proposed:

Hypothesis 2 (H2). *Website service quality will have a significant positive effect on customer satisfaction.*

2.6. Repurchase Intention

Repurchase intention has received much research attention in the past few years and is widely used in models related to technology acceptance. Boulding et al. (1993) specified the common behavioral dimensions examined in the literature are purchase/repeat purchase intentions or actual purchase/repeat purchase behavior, tendency to present word of mouth (WOM), and inclination to make additional purchases from the same source. High service quality leads to favourable repurchase intention, whereas low service quality leads to unfavourable repurchase intention. Zhang et al. (2011) suggested that positive customer experiences are directly related to repurchase intentions. Lee and Lin (2005) examined the relationship among e-service quality dimensions, customer satisfaction, and repurchase intentions. The results of the study found that overall service quality and customer satisfaction are significantly related to repurchase intentions. Chang et al. (2009) tested the relationships among perception of e-service quality and customer satisfaction and found significant effect of e-service quality on customer satisfaction, which leads to customer loyalty. Chau and Kao (2009) concluded that the dimensions of service quality have a significant and positive impact on customer satisfaction and future repurchase intentions. Shin et al. (2013) concluded that website quality is a crucial factor to enhance repurchase intention in the customer perspective. Repurchase intention directly influences both revenue and profitability of the firm (Hsu et al. 2012). Therefore, the present study focuses on *repurchase intentions* as the final dependent variable in the proposed model.

Hypothesis 3 (H3). *Website service quality will have a significant positive effect on repurchase intention.*

Hypothesis 4 (H4). *Customer satisfaction will have a significant positive effect on repurchase intention.*

2.6.1. Cash-on-Delivery Mode of Payment. The current increase in online shopping in India may be accredited to a recent method of payment popularly known as “cash-on-delivery” (COD) mode of payment. Credit card payment is the most common method of e-business transactions in developed countries, but in developing countries the number of credit card users is comparatively less despite continued Internet penetration. This has remained a challenge for the companies wishing to engage in e-business in these regions. The limited use of credit and debit card compelled online retailers to address this problem, and an alternative nonelectronic payment method, COD mode of payment, was adopted by them. COD removed the distrust and inhibitions about delivery of faulty product, as the consumers get to inspect the product and be satisfied before paying online. COD mode of payment also persuaded online retailers for speedy delivery of the right product, thereby ensuring better services to enhance customer satisfaction. COD is a well-admired mode of payment in developing Asian countries. Hussain et al. (2007) discussed issues regarding methods of payments for Internet purchases in India, China, and Pakistan and concluded that the majority of consumers in these countries consider COD as most convenient and more time saving than credit card. Chiejina and Olamide (2014) found the role of “pay-on-delivery” payment option as a major trust builder between Nigerian consumers and online merchants. Thakur and Srivastava (2015) studied the barriers to online shopping and found that consumers do not trust online channels to share their banking details and prefer making payments through COD. Jain (2014) studied the consumer decision-making process in the Indian environment and concluded that the majority of consumers feel secure while shopping online, and the most preferred mode of payment is cash-on-delivery mode of payment. Tandon et al. (2015b) studied customer satisfaction with respect to online shopping and highlighted that COD mode of payment has enhanced satisfaction with respect to online shopping and is persuading consumers to repurchase online. Jadhav and Khanna (2016) also mentioned that COD followed by debit card and net banking are the modes of payment, but COD was analyzed as a single item in the construct of perceived ease of use. COD is also a common mode of payment in Australia with a share of 24% in total payments (Wolner-Rößlhuber et al. 2013). COD, though stated and mentioned in different studies, has not been empirically validated to date. Therefore, to fill this gap, the present study introduces COD in the construct of repurchase intention and customer satisfaction. The same has been validated through composite reliability and average variance extracted (AVE) also.

2.7. Interrelationship Among Website Service Quality, Customer Satisfaction, and Repurchase Intention

Previous studies have concentrated on the role of website quality of online shopping websites and have suggested that positive emotions created by website quality lead to more favourable behaviours. In the present study, it is proposed that website quality is antecedent of customer satisfaction and repurchase intention. Further, customer satisfaction also mediates the relationship between website quality and repurchase intention. This presumption was formed on the basis of previous studies that website quality of online shopping is a predictor of repurchase intention (Shin et al. 2013, Udo et al. 2010) as well as a significant indicator of customer satisfaction (Lee and Lin 2005, Zhou et al. 2009, Shin et al. 2013). Gounaris et al. (2010) substantiated that e-satisfaction mediates the effect of e-service quality on customer's behavioural intentions, namely site revisit, word-of-mouth communication, and repeat purchase. Udo et al. (2010), in a study of the United States, found that the indirect or mediating influence of satisfaction on web service quality and behavioural intention is indeed stronger than the direct influence of web service quality on behavioural intentions. Shin et al. (2013) confirmed that website quality can affect repurchase intention by enhancing customer satisfaction in online transactions.

In the present study, to test the direct and indirect effects of web service quality on repurchase intentions, the following hypothesis is proposed:

Hypothesis 5 (H5). *Customer satisfaction plays a mediating role between website service quality and repurchase intentions in the context of online shopping (WSQ → CUSAT → RI).*

3. Research Methodology

3.1. Measurement Development

To achieve the above-mentioned objectives of the study, a self-administered questionnaire was developed having 10 constructs. Measurement items were adopted from literature wherever possible. Items of questionnaire and source are provided in the appendix. Standard procedures for measurement development were applied wherever needed involving the use of multi-item indicators for reliability and unidimensionality.

Navigation was measured using five items developed by Wolfinbarger and Gilly (2003) and Bansal et al. (2004). *Website design* was measured using three items developed by Zhou et al. (2009) and Wolfinbarger and Gilly (2003). *Security and privacy* was measured using four items from Chen et al. (2010). *Information usefulness* was measured using two items from Shin et al. (2013). *Ease of use* and *ease of understanding* was measured using items from Loiacono et al. (2007) and Tandon et al. (2015a). *Ease of ordering* was a new scale item included in the scale of *website service quality*. These items were included in the scale due to their importance in developing countries where online shopping is still in a nascent stage. The items of *customer satisfaction* and *repurchase intention* were developed from Udo et al. (2010) and Shin et al. (2013). "I intend to repurchase from online stores by using cash-on-delivery" and "next time I would like to purchase products online by paying through cash-on-delivery" were new scale items befitting Indian and other developing countries scenario. These items were not analyzed in the context of online shopping until recently (see Table A.1 in the appendix).

3.2. Data Collection Procedures

To get accurate responses and reduce ambiguity, a preliminary questionnaire was distributed to a pilot group of 50 people selected on the basis of convenience sampling. This pilot group consisted of academicians and management experts. The pilot group not only answered the questions but also suggested some changes in the language and significance of questions. Their suggestions were incorporated to refine the questionnaire. The final questionnaire had close-ended questions on a five-point Likert scale. Population of this research comprised North Indian Internet savvy consumers who also shop online. A total of 2,000 questionnaires were administered to service-class people, businessmen, and youth including students in the northern states of India. Of these, 410 usable questionnaires were retained for analysis. This survey was carried from February 2014–February 2015.

4. Data Analysis

4.1. Frequency Distribution for Respondent's Demographics

Table 1 shows the basic characteristics of the consumers surveyed. Out of the total 410 users of online shopping, 54.90% were male and 44.9% were female. Among the respondents, 62.2% were between 18–30 years of age, followed by 24.6% in middle age group of 31–45 years of age, and the remaining 13.2% were above 45 years of age. A substantial number of respondents (46.8%) indicated that they have been shopping online from one to three years, followed by 38.0% who had been shopping through the Internet for one year. The majority of respondents (45.4%) had purchased two to five products from the Internet, followed by 39.5% who had

Table 1. Frequency Distribution for Respondent’s Demographics

Demographic characteristics N = 410	Response	Valid percentage
<i>Gender</i>		
Male	225	54.09
Female	184	44.90
<i>Age</i>		
18–30	225	62.2
31–45	101	24.6
Above 45	54	13.2
<i>Education qualification</i>		
Undergraduate	101	24.6
Graduate	97	23.7
Post graduate	212	51.7
<i>Nature of consumer</i>		
Student	158	38.5
Self-employed	48	11.7
Service	204	49.8
<i>Annual income</i>		
Less than 3.5 lakhs	165	40.2
3.5–6 lakhs	187	45.6
More than 6 lakhs	58	14.1
<i>Number of hours spent on Internet in a week</i>		
Less than 7 hours	115	28.0
8–16 hours	157	38.3
More than 16 hours	138	33.7
<i>Number of years of online shopping</i>		
Less than 1 year	156	38.0
1–3 years	192	46.8
More than 3 years	62	15.2
<i>Hours spend on online shopping in a month</i>		
Less than 2 hours	171	41.7
2–6 hours	186	45.4
More than 6 hours	53	12.9
<i>Number of products purchased online in a month</i>		
Less than 2	78	19.0
2–5	170	41.5
More than 5	162	39.5

purchased more than five products from the Internet in the last year. From the above analysis, it appears that a considerable number of respondents were well educated, i.e., postgraduates and graduates, of young age and enjoying average income.

4.2. Validity and Reliability of Measures

To purify the scale of service quality, exploratory factor analysis (EFA) was performed. For EFA, the principal component analysis (PCA) with varimax rotation and eigenvalue greater than 1 and factor loadings greater than 0.5 were considered and further retained for confirmatory factor analysis. The Kaiser–Mayer–Olkin (KMO) value of 0.843 at significance level of 0.000 was attained using Bartlett’s Sphericity Test suggesting the intercorrelation matrix contained adequate common variance to make factor analysis useful. CFA was performed on all the retained constructs. Based on the analysis, all the items having loadings >0.50 were retained for further analysis. Therefore, NAV5 of navigation, EASEORD 4 of ease of ordering, and CUSAT4 and CUSAT5 of customer satisfaction were completely dropped due to low factor loadings. The results confirmed the dimensionality of the solution and suggested discriminant validity (average variance extracted >0.50 in all occasions) and composite reliability (values > 0.70) in all occasions. Finally, two supplementary tests of discriminant validity were conducted. First, the correlation between constructs ranged between 0.14 to 0.46 and correlations of no pair of measures exceeding the criterion (0.9 or above) (Hair et al. 1995). Further, the AVE estimate of each construct was larger than the squared correlations among the constructs in the corresponding rows and columns (Fornell and Larcker 1981).

4.3. Measurement Model

Website quality was conceptualized as second order construct in the model comprising *ease of ordering, ease of understanding, ease of use, information usefulness, navigation, security and privacy, website design, and customization*. A second order confirmatory analysis was performed to determine the importance of each section. Tables 2 and 4

Table 2. Dimensionality, Reliability, and Validity Statistics

Variables	Items	Standardized estimate	S.E.	C.R.	Composite reliability	AVE
<i>Ease of understanding</i>	EASEUND1	0.650	0.120	9.943	0.801	0.502
	EASEUND2	0.72	0.033	16.052		
	EASEUND3*	0.752				
	EASEUND4	0.700	0.115	10.460		
<i>Ease of ordering</i>	EASEORD1	0.730	0.144	8.817	0.802	0.506
	EASEORD2	0.810	0.133	10.167		
	EASEORD3*	0.620				
<i>Ease of use</i>	EASEUSE1	0.670	0.068	12.689	0.80	0.573
	EASEUSE2*	0.740				
	EASEUSE3	0.850	0.067	13.669		
<i>Information usefulness</i>	EASEINFO1*	0.800			0.79	0.557
	EASEINFO2	0.650	0.087	9.879		
	EASEINFO3	0.780	0.165	9.847		
<i>Navigation</i>	NAV2	0.73	0.144	8.817	0.805	0.509
	NAV3	0.66	0.056	13.229		
	NAV4*	0.75				
	NAV5	0.710	0.070	11.860		
	SANDP1	0.630	0.124	8.828		
<i>Security and privacy</i>	SANDP2	0.780	0.165	9.847	0.804	0.507
	SANDP3	0.710	0.070	11.855		
	SANDP4*	0.721				
	WEBD1*	0.689				
<i>Website design</i>	WEBD2	0.785	0.095	10.783	0.759	0.514
	WEBD3	0.671	0.029	13.942		
	CUSTOM1	0.780	0.160	9.847		
<i>Customization</i>	CUSTOM2*	0.750			0.738	0.585
	CUSAT1*	0.750				
<i>Customer satisfaction</i>	CUSAT2	0.780	0.160	9.847	0.82	0.604
	CUSAT3	0.800	0.04	26.061		
	RI1	0.686	0.029	36.557		
<i>Repurchase intention</i>	RI2*	0.861			0.823	0.609
	RI3	0.785	0.095	24.783		

Note. S.E.: standard error, C.R.: critical ratio.

*Regression weights are fixed to 1; thus standard error and critical ratios are not calculated.

depict the estimated results for the first order and second order confirmatory analysis. The overall fit indices demonstrated an adequate fit with the data (CMIN/df = 2.969, GFI = 0.89, TLI = 0.89, CFI = 0.88, RMSEA = 0.06) indicating that model is found to qualify goodness-of-fit indices as various fit indices are within the prescribed limits. This signifies that consumers assess website quality according to eight basic dimensions and supports the perspective that website quality has eight basic dimensions with subdimensions allied with them in the consumer’s mind.

Table 3. Correlation Matrix

	Mean	Std. dev	CS	RI	CUSTOM	WEBD	SANDP	NAV	INFOUSE	EASE USE	EASE ORD	EASE UND
CS	3.93	0.59	<i>0.777</i>									
RI	4.08	0.89	0.54	<i>0.780</i>								
CUSTOM	3.47	1.07	0.19	0.15	<i>0.764</i>							
WEBD	3.87	0.94	0.42	0.39	0.26	<i>0.716</i>						
SANDP	3.45	1.11	0.28	0.14	0.29	0.21	<i>0.712</i>					
NAV	3.85	0.88	0.35	0.41	0.37	0.41	0.41	<i>0.713</i>				
INFOUSE	3.87	0.89	0.41	0.34	0.30	0.46	0.23	0.46	<i>0.746</i>			
EASEUSE	4.30	0.73	0.31	0.40	0.19	0.32	0.17	0.38	0.32	<i>0.756</i>		
EASEORD	3.50	1.13	0.15	0.11	0.31	0.13	0.15	0.22	0.29	0.15	<i>0.711</i>	
EASEUND	4.00	0.87	0.38	0.42	0.16	0.33	0.39	0.49	0.36	0.40	0.28	<i>0.70</i>

Notes. Figures in italics are square root of AVE. CS: customer satisfaction, RI: repurchase intention, CUSTOM: Customization, WEBD: website design, SANDP: security and privacy, NAV: navigation, INFOUSE: information usefulness, EASEUSE: ease of use, EASEORD: ease of ordering, EASEUND: ease of understanding.

Table 4. Second Order Factor of Website Quality

First order	Path	Second order	Estimate	Standardized estimate	S.E.	C.R.	P
EASEUND	←	WEBSITE_QUALITY	1	0.638			
EASEORD	←	WEBSITE_QUALITY	0.71	0.32	0.122	5.831	***
EASEUSE	←	WEBSITE_QUALITY	0.818	0.543	0.081	10.048	***
INFOUSE	←	WEBSITE_QUALITY	1.12	0.588	0.104	10.8	***
NAV	←	WEBSITE_QUALITY	1.195	0.749	0.087	13.676	***
SANDP	←	WEBSITE_QUALITY	0.996	0.473	0.114	8.741	***
WEBD	←	WEBSITE_QUALITY	1.015	0.548	0.101	10.039	***
CUSTOM	←	WEBSITE_QUALITY	1.047	0.462	0.132	7.95	***

Note. Goodness of fit statistics (CMIN/df = 2.472, GFI = 0.97, TLI = 0.94, CFI = 0.96, RMSEA = 0.06).

4.4. Path Analysis

Subsequent to measurement purification, the path relationships within the research model were analyzed by structural equation modelling (SEM) using AMOS 20. The overall fit indices of the research model were acceptable (CMIN/df = 2.472, GFI = 0.97, TLI = 0.94, CFI = 0.96, RMSEA = 0.06).

The results of the SEM as shown in Table 5 provide support for Hypotheses 2–4. Website service quality has a significant positive effect on customer satisfaction (H2 = 0.56, $p \leq 0.001$) and repurchase intention (H3 = 0.55, $p \leq 0.001$). The results of the study also support H4, which states that customer satisfaction has a significant positive effect on repurchase intention (H4 = 0.951 $p \leq 0.001$).

Hypothesis H5 assumes that customer satisfaction plays a mediating role between website service quality and repurchase intention in the context of online shopping (WSQ → CUSAT → RI) Table 6 shows the results of the mediating effect of customer satisfaction. The parameter estimate of the relationship between website quality and repurchase intention after adding customer satisfaction as mediating variable reduced (Std. loading = 0.044, $p = 0.393$, $p \geq 0.001$) and the estimate of model became insignificant. The overall fit indices of the mediated research model are acceptable (CMIN/df = 3.36, GFI = 0.951, TLI = 0.898, CFI = 0.929, RMSEA = 0.07). To test this mediating role, Sobel test was conducted (MacKinnon et al. 1995). The Sobel test statistic for testing mediation was 5.568 and is significant at $p < 0.0001$. This result indicates that customer satisfaction depicts the full mediating effect on the relationship between website service quality and repurchase intention. The implication of these results is that although the direct effect of website quality on repurchase intention and customer satisfaction is significant but the mediating effect of customer satisfaction on website quality and repurchase intention seems stronger. This further indicates that website quality can positively affect repurchase intention by enhancing mediating variables. The structural model with standardized weights is shown in Figure 2.

Table 5. Results of Hypotheses Testing

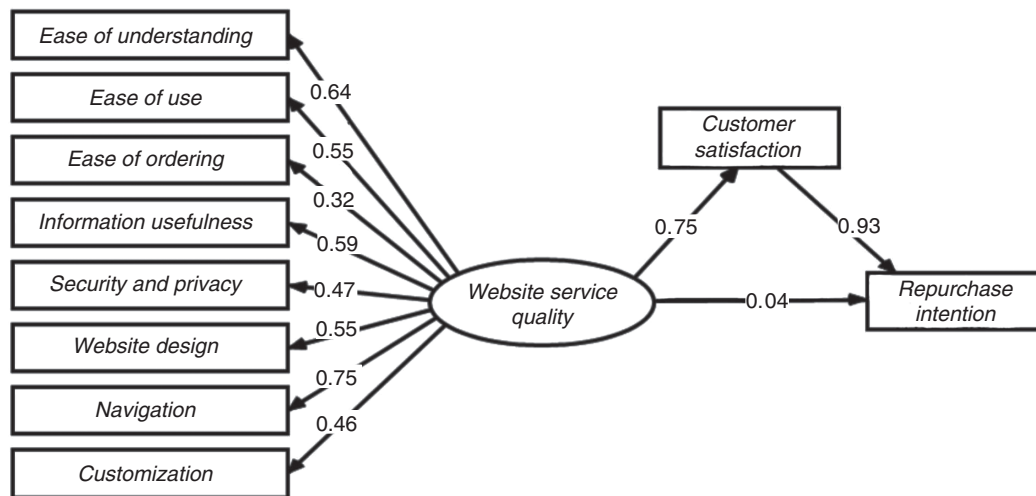
Hypotheses	Influence relation	Independent variable	Path	Dependent variable	Standardized estimate	S.E.	p-value	Result
H2	Direct	WSQ	→	CS	0.57	0.84	0.000	Support
H3	Direct	WSQ	→	RI	0.61	0.08	0.000	Support
H4	Direct	CS	→	RI	0.95	0.05	0.000	Support

Table 6. Model After Mediation

Influence relation	Independent variable	Path	Dependent variable	Standardized estimate	p-value	Result
Direct	WSQ	→	RI	0.044	0.393	Support
Indirect	WSQ	→	RI	0.747	0.000	
Total	WSQ	→	CS	0.932	0.000	

Note. Goodness of fit statistics (CMIN/df = 3.36, GFI = 0.951, TLI = 0.898, CFI = 0.929, RMSEA = 0.07).

Figure 2. Hypothesized Model with Path Coefficients



5. Discussion and Conclusions

In Section 5.1, the findings in Indian Internet shopping context are discussed. The limitations of the present study and topics for future research are also reported.

5.1. Website Service Quality

Website service quality is one of the fundamental determinants of the success of online shopping. Consequently, in spite of substantial research in the construct of *website service quality*, an aggregate model is lacking in Indian and developing economies context as switch over to online purchase in these countries has picked up recently and is lagging in comparison to its active adoption by Western consumers. To fill this gap, the present study empirically examined the construct of *website service quality* in context of online shopping and its relationship to *repurchase intention*. Further, the mediating effect of *customer satisfaction* was also examined.

The study identified key dimensions leading to *website service quality*. The structural model indicated that *navigation*, *ease of understanding*, *information usefulness*, *website design*, *ease of use*, *security and privacy*, *customization*, and *ease of ordering* emerged as significant dimensions of *website service quality*. The results of validation through AVE and composite reliability procedure indicated that the proposed eight-factor website service quality scale has appropriate reliability and validity in every aspect.

Navigation emerged as an important significant variable in the present study. This finding for India is supported by results of similar studies in other countries (Wolfenbarger and Gilly 2003, Bansal et al. 2004, Santos 2003). Customers consider websites that are easy to follow and navigate as a prerequisite for making an online purchase. Since online shopping requires mass penetration and consumers have to make choices without the help of sales personnel, websites must be designed such that navigation and finding required content is easier. As pointed out by Yang et al. (2004), the sequencing, placement, and naming of hyperlinks and navigational menus should be based on customer intuition. A well-designed navigational structure in terms of time required to obtain desired results can facilitate customer satisfaction and lead to repurchase.

Next in importance were *ease of understanding* and *information usefulness*. The *ease of understanding* of the structure of an online shopping website, its functions, interface, and its content encourage online shopping. These findings, too, are supported by previous studies (Loiacono et al. 2007, Santos 2003, Shin et al. 2013, Tandon et al. 2015b). This leads us to comprehend that all the terms and conditions concerned with products should be provided in clear and understandable language. Adequate explanations, wherever necessary, need to be provided. To purchase products online, consumers search for product information. It is imperative that to enhance *customer satisfaction* and *repurchase intention* online, retailers start providing accurate and up-to-date information about the products.

Further, in the order of significance are the *website design*, *ease of use*, and *security and privacy* indicating their relative importance for online repurchase. *Website design* is usually the first determinant observed by online shoppers. *Website design* characteristics such as graphics, aesthetics, store layout, arrangement of hyperlinks, and proper display of products all contribute to *website service quality*. Earlier studies have considered *website design* as a vital service quality factor leading to repurchase (Wolfenbarger and Gilly 2003, Lee and Lin 2005,

Zhou et al. 2009, Shin et al. 2013, Udo et al. 2010). As depicted by the present study, poorly designed web pages, complicated language, and incomplete description of products lead to abandonment of shopping cart. Therefore, online stores need to pay careful attention to this aspect. Online *security and privacy* is still perceived as a major concern for online shoppers. Consumers expect clear and vivid statements about *security and privacy* matters. Although there is an essential improvement in online security technologies, confidence of consumers can be managed using encryption and online card guarantee. E-retailers must provide best online security as it is the fundamental requisite.

Customization and ease of ordering emerged as significant variables affecting *website service quality*, yet their effect was mild compared to other variables. *Ease of ordering* was found least significant of all the variables of website quality. This indicates that consumers still find difficulty in placing, tracking, replacing, and cancelling the orders once placed. This difficulty can be reduced by improving the quality of information and instructions about payment, and providing virtual tours through the website.

5.2. Interrelationship Between Website Service Quality, Customer Satisfaction, and Repurchase Intention

In the present study, it was hypothesized that *website service quality* has both a direct effect on *customer satisfaction* and *repurchase intention* as well as indirect effect on *repurchase intentions*. *Website quality* is positively associated with *repurchase intention*. This is consistent with findings in previous studies (Zhou et al. 2009, Kuo et al. 2009, Shin et al. 2013, Udo et al. 2010), but opposes the study of Srivastava (2014), where *customer satisfaction* did not emerge as a mediator between *service quality* and *repurchase intention*. Similarly, the findings of this study also indicate that *customer satisfaction* acts as a mediating variable between *website service quality* and *repurchase intention*. This suggests *customer satisfaction* positively influences customer's intention to repurchase. Both *customer satisfaction* and *repurchase intention* explain a large proportion of model's variance. The findings of the present study reflect that online retailers need to devise strategies focusing on mediators like *customer satisfaction* that enhance *website service quality* which, in turn, can lead to *repurchase intention*. COD emerged significant in the construct of *repurchase intention* and is consistent with few studies like Tandon et al. (2015a) and Hussain et al. (2007) where COD was mentioned as a significant variable influencing online purchase. Therefore, it needs to be validated further in depth across different cultures with different technologies.

6. Implications and Conclusions

The purpose of this research was threefold: (1) understanding the online customers' perception and expectation from *website service quality*; (2) developing and testing an instrument on dimensions of *website service quality*; and (3) examining the relationship among *website service quality*, *customer satisfaction*, and *repurchase intention*. As reflected through results, *website service quality* plays an important role in stimulating online purchase. By studying consumer's perceptions, online retailers can understand major concerns of online shoppers. In addition, *customer satisfaction* assists understanding of efficacy and acceptance of online shopping and acts as a mediator stimulating online purchase. This has sharpened our understanding of online shopping success factors. In Sections 6.1 and 6.2 theoretical and practical implications are discussed.

6.1. Theoretical Implications

The conclusions drawn from this study have important implications for researchers as well as academicians. This study has higher relevance for developing countries including India, where online shopping has picked up recently and is lagging in comparison to active adoption by Western countries. The model that emerged from this study can be extended to all developing countries to have an overall assessment of factors leading to online purchase.

First, this study has refined the relationship among *website service quality*, *customer satisfaction*, and *repurchase intention*. Most of the previous studies have considered the scale development of *website service quality* as a predictor for satisfaction without considering the mediating role of *customer satisfaction*. Few researchers (Shin et al. 2013, Udo et al. 2010) have incorporated *customer satisfaction* as a mediator in *website service quality* and *repurchase intention* in online shopping context, but their studies have focussed on Chinese and Korean consumers. Because *customer satisfaction* helps in stimulating online purchase, it is taken as a mediator in the present study. *Website service quality* is an important marketing phenomenon for inducing positive attitude as well as a significant factor for *customer satisfaction* leading to *repurchase intention*.

Second, *website service quality* can be conceptualized as an amalgamation of eight dimensions, namely, *navigation*, *ease of understanding*, *ease of use*, *information usefulness*, *website design*, *security and privacy*, *customization*, and *ease of ordering*, which are at the second level of abstraction. *Navigation* is the most important factor, and *ease*

of ordering emerged as least important factor to overall *website service quality*. This indicates that if people have difficulty in navigating and understanding the contents of websites, they may abandon their shopping cart or quit online shopping. The importance of site quality factors is different from results of previous studies where customer communication (Shin et al. 2013), website content (Udo et al. 2010), reliability (Yang et al. 2004, Santos 2003, Lee and Lin 2005), assurance (Swaid and Wigand 2009), convenience (Kim et al. 2009), and responsiveness (Yang et al. 2004) were the important factors. The study is also different from the work of Zhou et al. (2009), where only the impact of website design and service quality on trust and satisfaction were considered.

Third, the study has refined the scale of repurchase intention by including COD mode of payment as a new dimension to inculcate confidence for online shopping. The COD model has been adopted by Indian online retailers to reduce the fear of credit/debit card thefts under Indian conditions besides neighbouring countries. Though stated in previous studies, COD was not validated empirically until recently. This research fills this gap by empirically analyzing COD in the construct of repurchase intention and customer satisfaction.

6.2. Practical Implications

The findings of this study are valuable to online retailers also. Understanding the constructs in the proposed research model is crucial for online retailers in India as well as emerging economies so that they can yield high consumer acceptance.

As reflected in the study, *customer satisfaction* leads to a significant increase in *repurchase intention*. Therefore, online retailers need to endeavour to satisfy consumers through good website service quality. This study helps the online retailers to understand the definite role of website quality in inducing beneficial repurchase intention. In this context, online retailers should provide the best website service quality. The results of the study confirmed that impact of *navigation* followed by *ease of understanding*, *information usefulness*, and *website design* were high on *website service quality*. Therefore, these dimensions need to be considered by online retailers while improving the quality of their websites. Online retailers can reinforce their website service quality by giving particular attention to easily navigable pages, website design, easy-to-understand content, and an online user manual to understand online shopping. Online retailers need to make their websites user friendly by adding graphics and interaction-related issues besides including basic and advanced search options to increase the number of online shoppers. Instead of best assertions provided by e-retailers, security and privacy is a matter of concern. One such challenge handled admirably by online retailers is COD mode of payment as a secure and trustworthy way to overcome the fear of security and privacy. COD model is encouraging people to adopt online shopping with reduced chances of delivery of defective products. Customers can check the product and then make payment. FAQ page can be regularly updated and customer support staff well trained to handle problems of customers' regional dialects. Further, return procedures and product tracking systems need to be simplified to instill confidence in new consumers. As highlighted in the study, *customer satisfaction* mediates the relationship between *website service quality* and *repurchase intention*. Thus, a focus on these factors through *customer satisfaction* will increase the chance of repurchase.

The study underlines the thrust to be given to cash-on-delivery mode of payment. The majority of India's population do not have credit cards, and those who do have them do not frequently use them for online transactions. Therefore, through COD mode of payment an online retailer can connect to customers, even if they do not have the means to make an online payment. As people in villages and small towns are also accepting online shopping, COD is the only mode of payment where online retailers can achieve a competitive advantage. Moreover, consumers also prefer COD, as they assume it is a convenient, recognizable, and trusted payment method. For encouraging consumers to shop online, a focus on COD mode of payment and the need to extend it to remaining pincodes in the country are also proposed. But all the shipping and courier costs must be exhibited at the time of accepting an order. In addition, online retailers need to embark upon the concerns related to security of online transactions by increasing the structural, technological, and legal framework for secure online transactions.

As reflected in the study, indirect effect of *website service quality* on *repurchase intention* through *customer satisfaction* is also significant. This makes us understand that online shoppers are concerned with *customer satisfaction* if *website service quality* is good. Therefore, online retailers should also focus on *customer satisfaction* rather than focussing only on *website service quality*. In simple words, satisfied customers may revisit the website and recommend the website to their peers, which may result in increase in sales.

7. Limitations and Further Areas of Research

The limitations of the present study stem from the geographical and time constraints. Future research could make several extensions of the current study. First, to verify the dimensions emerged in this study and the

future studies may concentrate on diversified customer environments. Second, the instrument developed in this study can be further used to investigate how customers perceive cash-on-delivery mode of payment significantly triggering online repurchase intentions across the countries.

The current research focuses on website service quality dimensions perceived by customers who have purchased online. However, the majority of consumers in India use the Internet for information search. These consumers may have some distinctive perceptions of service quality. Few respondents may feel comfortable by paying through debit card/credit card while others may purchase only through the cash-on-delivery model. Both groups can be compared, as those paying online may not be more concerned about security and privacy. Thus, further studies can extend this scale to understand the perceptions of both groups.

Appendix. Measurement Scale Items and Their Literature Support

Table A.1. Measurement Scales

Scale	Items
<i>Ease of understanding</i> (Loiacono et al. 2007, Tandon et al. 2015b)	The language used by online retailing websites is easy to understand (EASEUND1). **Display pages lead to further understandable information (EASEUND2). Process of transaction of online retailing website is understandable (EASEUND3). It is easy to place orders online (EASEUND4).
<i>Ease of ordering</i>	**The website makes it easy to track orders placed online (EASEORED1). **The websites have detailed instructions to modify orders placed online (EASEORD2). **The websites have detailed instructions to cancel orders placed online (EASEORD3).
<i>Ease of use</i> (Loiacono et al. 2007)	It was easy for me to learn internet shopping (EASEUSE1). Internet shopping websites are easy to use (EASEUSE2). Navigation through online shopping websites is easy for me (EASEUSE3).
<i>Information usefulness</i> (Shin et al. 2013, Bansal et al. 2004)	Online shopping websites provide me rich information on features and quality of products (INFOUSE1). Information provided by online shopping websites help me to purchase product (INFOUSE2). Online retailers provide useful information about products (INFOUSE3).
<i>Navigation</i> (Wolfinbarger and Gilly 2003, Bansal et al. 2004)	Pictures of products are downloaded quickly (NAV2). The search function at the websites is helpful (NAV3). The websites allow easy return to the previous display pages (NAV4). The websites make it easy to recognise key information (NAV5).
<i>Security and privacy</i> (Chen et al. 2010, Shin et al. 2013)	The websites have adequate security measures (SANDP1). I feel safe while using my credit card/debit card on the websites (SANDP2). I trust that the websites will not give my personal details to other websites without my permission (SANDP3). Online shopping websites offer user memberships for surfing on the password protected web pages within the website (SANDP4).
<i>Website design</i> (Zhou et al. 2009, Wolfinbarger and Gilly 2003)	The attractive colour scheme of online shopping websites facilitates shopping (WEBD1). The graphics displayed in websites provide ease for ordering product (WEBD2). Shopping online is an exciting experience (WEBD3).
<i>Customization</i> (Wolfinbarger and Gilly 2003)	The websites allow me to customize my product before ordering (CUSTOM1). The website responds to customer needs (CUSTOM2).
<i>Customer Satisfaction</i> (Udo et al. 2010, Shin et al. 2013)	I am satisfied with the quality of products offered online (CUSAT1). Online shopping is a satisfying experience as it offers customised product at my convenience (CUSAT2). **I am satisfied with cash-on-delivery mode of payment (CUSAT3).
<i>Repurchase intentions</i> (Shin et al. 2013)	I would like to re-buy products from online retailers continuously (RI1). **I would continue to pay through cash-on-delivery continuously (RI2). **Next time I would like to repurchase products online by paying through cash-on-delivery (RI3).

**New scale items

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