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## AN INVESTIGATION OF RELATIONSHIP AMONG E-TAILING SERVICE QUALITY, E-SATISFACTION, E-TRUST AND CUSTOMERS COMMITMENT

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**Abstract:** *The purpose of this study is to propose and demonstrate an integrative model of e-tailing service quality, e-satisfaction, e-trust and commitment. Customer's commitment is fundamental to the survival and profitability of e-tailing. Perhaps, study variables have considerable importance on e-tailers performance. The data were collected from a sample of 383 students at universities in China during the first quarter of 2014. We used confirmatory factor analysis (CFA) and structural equation modeling (SEM) to evaluate the hypotheses about the relationship among model constructs. Thus all the hypotheses developed in the study were positively confirmed except one, reinforcing the theory and previous research in this field. This study reveals interesting implications in the e-tailing service quality, e-satisfaction, e-trust and customers commitment that are useful to both academicians and practitioners.*

**Keywords:** *service quality, e-satisfaction, e-trust, e-tailing, customer commitment*

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## **1. INTRODUCTION**

In response of e-commerce market competitiveness commitment has great recognition and importance in the literature of relationship marketing. It is a key precursor to the accomplishment of valuable outcomes for instance, future intentions (Kim et al., 2005), and profitability (Anderson and Weitz, 1992). Customer commitment refers as an attitude that reflects the desire to maintain a valued relationship (Moorman, 1992; Morgan and Hunt, 1994). Moreover, it is also conceptualized as a “pledge of continuity” from one party to another (Dwyer et al., 1987). Consequently, it is argued that the commitment lies potential for scarifies or sacrifice that one party faces in the event that the relationship ends (Anderson and Weitz, 1992), or for the sake of alternative seeking from the market (Gundlach et al., 1995). Sometimes commitment refers as a resistance to change (Pritchard et al., 1999), and a sort of attitude change (Ahluwalia, 2000). Particularly, marketing scholars and researchers used various definitions and perspective to characterize two important components of commitment (Gundlach et al., 1995). The first component of commitment is based on liking and identification and second component is based on dependence and switching cost that are called affective and continuance commitment respectively (Allen, N. J., & Meyer, 1990).

The affective commitment is based on the “affective or emotional attachment to the organization such that the strongly committed individual identifies with, is involved in, and enjoys membership in the organization” (Allen, N. J., & Meyer, 1990). Thus the essence of affective commitment is that customers indulge to acquire an emotional attachment to their partner in a consumption relationship. As customer like to any specific brand or service providers (e-tailers), at that movement they are experiencing the psychological state of affective commitment (Fullerton, 2003). While continuance commitment in exchange relationship is built on the side bets, switching costs and scarcity of alternatives (Allen, N. J., & Meyer, 1990).

The core concept of marketing paradigm has been investigated by researchers in both business to business (Morgan and Hunt, 1994), and consumer’s context (Verhoef et al., 2002). In recent years, internet has had a profound impact on the subject of marketing. Recently most of the consumers feel comfortable buying products through online mechanism. Therefore, e-tailers have attempted to design website to attract customers to

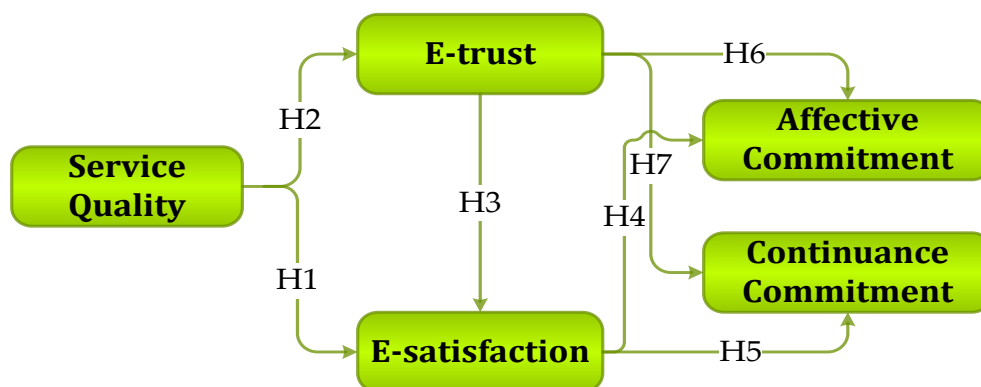


visit and revisit their sites. Some studies have investigated the factors that could affect customers purchase behavior on the Web (Poddar et al., 2009).

The purpose of this study is to propose and demonstrate a model of the commitment for online retailers, incorporating e-tail service quality, e-satisfaction and e-trust. This research intends to focus on consumer's attitude and behaviors intentions towards e-tailing, not a specific brand or manufacturer. We maintain that e-tailing service quality have different impact on consumer's e-satisfaction, e-trust which in turn leads to customer's commitment. This study begins with the introduction, proposed model and the hypotheses. We then describe the research methodology, present our research results and discussion, and conclude with managerial implications, limitations and suggestions for future research.

## 2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

This study draws from previous theories to develop hypotheses with regard to the impact of e-tailing service quality on e-satisfaction, e-trust and commitment. We derive a structural equation model (Fig.1), which illustrates the hypothesized relationships discussed in the subsequent sections.



**Fig.1 Theoretical Framework**

### 2.1 Relationship between e-tailing service quality, e-trust and e-satisfaction

Service quality refers as “availability of communication mechanisms for accepting consumer's complaints and timely resolution of them with responsiveness, assurance and follow up services” (Ahn et al., 2007; Bhattacharjee, 2001). Moreover, it is the customer evaluations and judgments about the quality of online service delivery (Santos, 2003) and Zeithaml et al. (2002) e-service quality as the extent to which a website facilitates efficient and effective shopping, purchasing and product delivery. In addition, Bhattacharjee (2001)



suggested to providing assistance to consumers in using product effectively, complementary products and services, and joint problem solving. In fact in online shopping there is lack of face to face communication between customers and retailers. Thus it is eventually more necessary for online retailers to provide mechanisms of online services in finding, ordering and delivering products to online customers (Ahn et al., 2005). The service quality has some important characteristics such as reliability, responsiveness, tangibles, empathy and assurance (Barnes and Vidgen, 2001; Pitt et al., 1995). It is the most critical factor for success or failure of the e-commerce (Yang, 2001).

Cronin and Taylor (1992) argued that service quality is the determinant of customer satisfaction, thus customer satisfaction has strong influence on customer purchasing intentions. However, service quality has more significant effect on customer satisfaction rather than purchasing intentions.

Anderson et al. (1994) found that service quality has positive impact on customer satisfaction and consequently on firm's profitability. Rust and Zahorik (1993) examined that service quality improvement leads to significant improvement in perceived quality which turn in increase in customer satisfaction. Service quality is the critical factor for the success of website and it is the antecedent of customer satisfaction in online shopping (Lin, 2007). Pointed out link between service quality factors and trust and highlighting that service quality issues contribute to each of the ten major online trustbusters (Sultan, F., & Mooraj, 2001). Therefore, we proposed consequent hypothesis.

**H1: Service quality positively influences e-satisfaction**

**H2: Service quality positively influences e-trust**

## **2.2 The relationship between e-trust and e-satisfaction**

In the context of e-tailing, online customer satisfaction is quite difficult before gain their trust. Therefore, trust also affects e-satisfaction in this regard. According to Berry (2000), trust is very essential for satisfaction. In fact, online consumer who trusts on e-tailers will be satisfied and more willing to commit on it. Yoon (2002) stated that satisfaction is the antecedent of trust. Researchers have been considered trust as critical determinants of developing relationship between buyers and sellers (Sirdeshmukh et al., 2002; Verhoef et al., 2002). It is also investigated that trust has direct influence on the post purchase satisfaction. Specifically in the context of online shopping trust might be the fundamental



element for initiating the transaction. Thus customer perceives a higher level of risk in e-tailing than in traditional retailing in the shape of delivery, information disclosure and payment. In this regard online customer prefers to make transaction with those e-tailers they can trust more (Singh and Sirdeshmukh, 2000). It is found that trust is the predictor of e-satisfaction in e-commerce (Harris and Goode, 2004; Jin and Park, 2006). Therefore, we propose subsequent hypothesis.

**H3: E-trust positively influences e-satisfaction**

**2.3 The relationship between e-satisfaction and commitment**

Satisfaction refers as “an overall evaluation based on the total purchase and consumption experience with a good or service over time” (Anderson et al., 1994). Thus, e-satisfaction is the precursor of customers’ commitment; actually it is the result of customer’s evaluations regarding the product and the key elements of their decision to repurchase (Kasmer, 2005). Consequently, customer satisfaction is one of values for customers that they expect from firm to deliver in the context of exchange. We would expect that commitment is one of the favorable consequences of satisfaction (Bansal et al., 2004). Similarly online customers over all evaluations of satisfactory consumption experiences make a positive impact on the degree of commitment in the relationship (Brown et al., 2005). Previously, it is observed that satisfaction has positive influence on commitment (Vasudevan et al., 2006; Abdul-Muhmin, 2005). In line with these authors, we propose that in the context of online shopping e-satisfaction is positively associated with affective and continuance commitment. Thus, we propose subsequent hypotheses.

**H4: E-satisfaction positively influences affective commitment**

**H5: E-satisfaction positively influences continuance commitment**

**2.4 The relationship between e-trust and commitment**

Trust refers as “a willingness to rely on an exchange partner in whom one has confidence” (Moorman et al., 1992). Practically it is observed that expectation of trustworthiness results from the ability to expertise, reliability and intentionality. Morgan and Hunt (1994) defined trust as the confidence in the exchange partner’s ability, reliability and integrity (Allen and Meyer, 1990). Trust is the determinant of commitment and successful business relationship (Morgan and Hunt, 1994). It is found that trust influenced positively on commitment (Tellefsen, 2002). Therefore, it is suggested that trust influenced firms to focus on the



positive motivation to stay in the relationship based on the feeling of connectedness and identification with each other (affective commitment), less due to continuance (continuance commitment) reasons to stay with the supplier (De Ruyter et al., 2001). Thus, we propose subsequent hypotheses.

**H6: E-trust positively influences affective commitment**

**H7: E-trust positively influences continuance commitment**

### **3. RESEARCH METHODOLOGY**

#### **3.1 Questionnaire design**

In this study we have reviewed the literature to explore valid measures for this study related constructs and adapted existing scales to measure e-tailing service quality (Ahn et al. 2005) influence on e-satisfaction (Fornell et al. 1996; Kim et al. 2009), e-trust (Garbarino and Johnson 1999; Ribbink et al. 2004) and commitment (Fullerton, 2003). Firstly, scales from literature were explored in English, therefore initial questionnaire was developed in English. Then, English version questionnaire were translated into Chinese by two Chinese Master and Ph. D students. Further, Chinese version questionnaire were translated back into English, hence this version of questionnaire was counter checked against the original English version for discrepancies and their rectification. This approach has been adopted to facilitate appropriate measurement development and to confirm meaning consistency, to improve understandability of the survey and proper use of terminology in Chinese. In this study all the indicators in the questionnaire were measured using a 7-Point Likert scale ranging from strongly disagree to strongly agree (1= strongly disagree; 7= strongly agree).

#### **3.2 Sampling and data collection**

Fung Business Intelligence Center reported that Chinese online customers are young people and over 60% were aged 30 or below in 2012. It is highlighted that middle aged customers preferred to buy online due to more buying power (Fung Business Intelligence Center 2013). Particularly, it is recommended that universities students are likely to be the first and more attractive potential consumers segment of e-commerce due to their high education level and income (Lightner et al. 2002). Data for this study were obtained through survey from universities different locations such as libraries, research labs, canteens and mini markets in mainland China. In our study 430 respondents have completed the survey, after sorting and



removing errors 383 valid and usable questionnaires left for data analysis. The response rate was 89 percent. The profile of respondents and their characteristics are stated in Table 1.

**Table 1- Respondent profile (n=383). Source: Own**

Demographics Variable	Category	Sample	Percentage
Gender	Male	222	58.0
	Female	161	42.0
Age (Years)	Below-20	79	20.6
	20-29	299	78.1
	30-39	5	1.3
Education Level	High School	3	0.8
	Bachelor	218	56.9
	Master	147	38.4
	Ph. D	15	3.9
Profession	Students	383	100
Shopping Experience (Years)	Under 1	48	12.5
	1-4	239	62.4
	Over 4	96	25.1

### 3.3 Construct development

In this study we used Kaiser-Meyer-Olkin (KMO) to measure sampling adequacy and the Bartlett test of sphericity. The results that showed KMO value of 0.895 with the significance of Bartlett's test at 0.000 level, indicates the data for exploratory factor analysis (EFA) fitting. We used maximum likelihood analysis for data reduction and promax rotation with Kaiser Normalizations for clarifying the factors. Hence EFA was conducted with specifying four numbers of factors. The cumulative variance explanation reaches 66%. All the items have strong loadings on the construct in the pattern matrix which are >0.30 (Hair et al., 1998). The results of EFA are shown in Table 2.

The internal consistency reliability of all items was examined by Cronbach alpha and item to total correlations. Therefore, the alpha coefficients and item to total correlations for each construct are shown in Table 3. The Cronbach's alpha of all measurement constructs ranges from 0.94 to 0.84. A Cronbach's alpha of value 0.7 or higher is commonly considered as a cut off for reliability (Nunnally 1978; Hair et al. 2006). Convergent validity has been examined based on measurement items standardized factor loadings, composite reliability and the variance extracted measures. The results of convergent validity test are also presented in Table 3. Standardized factor loadings of all items in each construct range from i.e. service quality (0.904-0.825), e-satisfaction (0.889-0.858), e-trust (0.907-0.623), affective



commitment (0.916-0.694) and Continuance commitment (0.866-0.680) that exceed the recommended level of 0.60 (Hair et al. 1998). The composite reliabilities (CR) range from 0.94 (service quality) to 0.87 (continuance commitment) which exceed the recommended level of 0.70. The average variance extracted (AVE) measure ranges from 0.76 (e-satisfaction) to 0.57 (E-trust) which is better than recommended value of 0.50 (Hair et al. 1998). The higher value of AVE, CR and factor loadings results, therefore adequately demonstrates the convergent validity of the measurement items.

**Table 2- Results of exploratory factor analysis (EFA) . Source: Own**

Construct Name & Items	Service Quality	e-Satisfaction	e-Trust	Affective Commitment	Continuance Commitment
SRQ1	0.748				
SRQ2	0.874				
SRQ3	0.895				
SRQ4	0.901				
SRQ5	0.898				
SRQ6	0.824				
S1		0.812			
S2		0.884			
S3		0.868			
T1			0.590		
T2			0.620		
T3			0.579		
T4			0.823		
T5			0.824		
T6			0.758		
AF1				0.825	
AF2				0.916	
AF3				0.784	
AF4				0.694	
CC1					0.598
CC2					0.892
CC3					0.812
CC4					0.562

Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 6 iterations. \*(SRQ: Service Quality, S: Satisfaction, T: Trust, AF: Affective Commitment, CC: Continuance Commitment)





**Table 3- Results of internal reliability and convergent validity tests. Source: Own**

Internal Reliability				Convergent Validity		
	Construct items	Cronbach $\alpha$	Item Total Correlation	Standardized Factor Loadings	Composite Reliability	Variance Extracted
Service Quality	SRQ1	0.94	0.803	0.839	0.94	0.74
	SRQ2		0.804	0.825		
	SRQ3		0.861	0.898		
	SRQ4		0.867	0.904		
	SRQ5		0.834	0.846		
	SRQ6		0.830	0.841		
E-Sat	S1	0.90	0.813	0.889	0.90	0.76
	S2		0.808	0.858		
	S3		0.810	0.866		
E-Trust	T1	0.86	0.642	0.623	0.89	0.57
	T2		0.638	0.695		
	T3		0.567	0.649		
	T4		0.687	0.805		
	T5		0.694	0.907		
	T6		0.670	0.820		
Aff. Commitment	AF1	0.88	0.680	0.658	0.88	0.64
	AF2		0.818	0.823		
	AF3		0.765	0.867		
	AF4		0.743	0.842		
Cont. Commitment	CC1	0.84	0.648	0.752	0.87	0.62
	CC2		0.751	0.866		
	CC3		0.756	0.838		
	CC4		0.526	0.680		

### 3.4 Convergent Validity

We used CFA to test convergent validity. In CFA, convergent validity can be assessed by testing each individual item's standardized coefficient greater than the twice its standard error shows that measurement model is significant (Anderson and Gerbing, 1988). In this study all the factor loadings for the indicators measuring the same construct are statistically significant (i.e. greater than twice their standard error), that reflects as evidence supporting



the convergent validity of those indicators. In our study all t-tests were significant showing that all indicators are effectively measuring the same construct in the presence of high convergent validity.

### 3.5 Discriminant validity

Discriminant validity measures the extent to which individual items intending to measure one latent construct do not at the same time measure a different latent construct (DeVellis, 1991). In the study Tab.3 can be seen that the average communalities (Average Variance Extracted-AVE) used to measure each construct are greater than the variance shared with other constructs. Therefore, it is demonstrated that the discriminant validity of all scales is adequate. Moreover, all AVE exceeded 0.50, which indicating strong construct validity. In overall, the measurement results are satisfactory and recommend that it is appropriate to proceed with the investigation and evaluation of the theoretical framework.

## 4. ANALYSIS AND RESULTS

We used SPSS AMOS-IBM version 21 to analyze the data and demonstrate structural equation modeling (SEM) of this study. It is a powerful multivariate analysis technique used to measure latent variables and investigate causal relationship among proposed model variable. Specifically, SEM allows conducting confirmatory analysis (CFA) for theory development and testing. The overall model fit indices are  $\chi^2 = 413.018$ ,  $df=214$  ( $p$ -values=0.00),  $GFI=0.92$ ,  $AGFI=0.90$ ,  $NFI=0.94$ ,  $CFI=0.97$ ,  $RMSEA=0.049$  indicating that model is acceptable with no substantive differences. Moreover, fit indices of structural model are presented in Table 4. The factor correlation matrix and standardized parameter estimates of hypothesized paths are presented in Table 5 and 6 respectively.

**Table 4- Fit indices for structural model. Source: Own**

Fit Index	Scores	Recommended cut-off values
<b>Absolute fit Measures</b>		
Minimum fit function chi-square ( $\chi^2$ )	413.018 ( $p=0.00$ )	The lower, the better
Degree of freedom (d.f)	214	
$(\chi^2)/d.f$	1.90	<5
Goodness-of-fit index (GFI)	0.92	>0.80
Root mean square residual (RMSR)	0.049	<0.05
<b>Incremental fit measures</b>		
Adjusted goodness-of-fit index (AGFI)	0.90	>0.80
Tucker-Lewis index (TLI)	0.96	>0.90
Normal fit index (NFI)	0.94	>0.90
Comparative fit index (CFI)	0.97	>0.90



Parsimonious fit measures		
Parsimonious normed fit index (PNFI)	0.792	The higher, the better
Parsimonious goodness-of-fit index (PGFI)	0.711	The higher, the better

Table 5- Factor Correlation Matrix. Source: Own

Factor	Service Quality	E-Trust	Aff. Commitment	E-Satisfaction	Cont. Commitment
Service Quality	1.000				
E-Trust	.171	1.000			
Aff. Commitment	.192	.500	1.000		
E-Satisfaction	.584	.279	.369	1.000	
Cont. Commitment	-.103	.429	.571	.060	1.000

Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization.

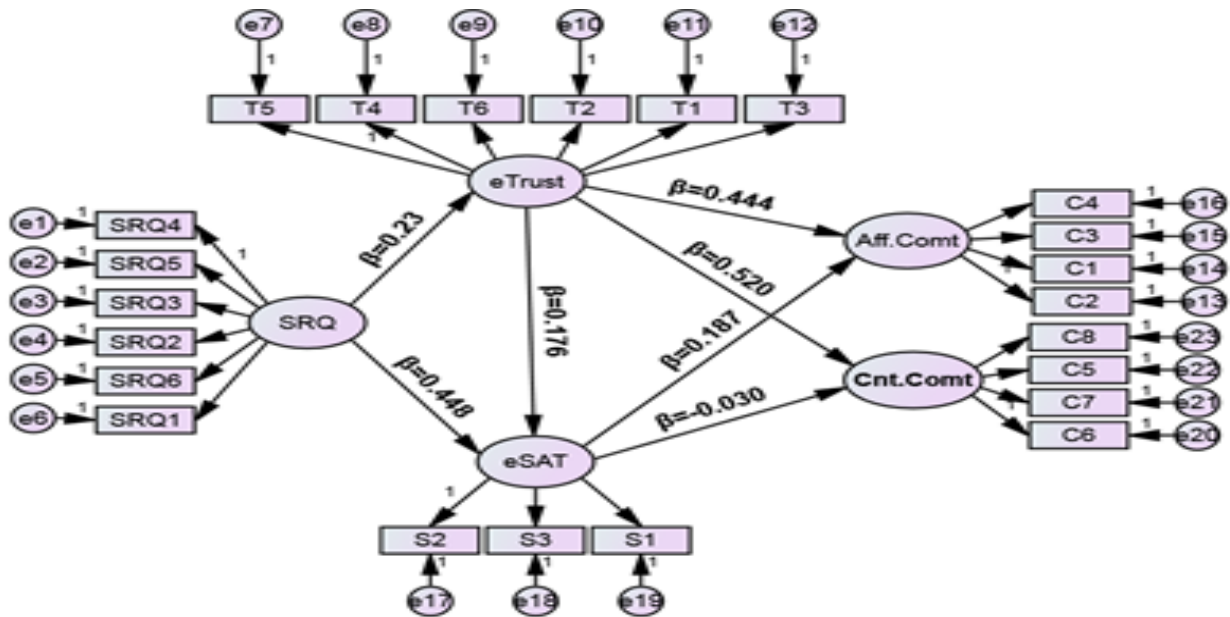


Fig. 2 Structural equation modeling of the Study

Table 6- Standardized parameter estimates of hypothesized paths. Source: Own

Path	Hypotheses	Co-efficient Estimate	Standard Error	t-value	p-value
Service Quality => E-satisfaction	H1	0.448	0.039	11.580	P<0.001
Service Quality => E-trust	H2	0.224	.051	4.428	P<0.001
E-trust=> E-satisfaction	H3	0.176	.039	4.535	P<0.001
E-satisfaction => Affective commitment	H4	0.187	.064	2.941	P<0.005
E-satisfaction => Continuance commitment	H5	0-.030	.077	-.384	P=701
E-trust => Affective commitment	H6	0.444	.056	7.966	P<0.001
E-trust => Continuance commitment	H7	0.520	.067	7.786	P<0.001



**H1: Service quality positively influences e-satisfaction** ( $\beta=0.448$ ;  $p<0.001$ ). The result of our study supports the finding of (Cronin and Taylor, 1992; Anderson et al., 1994; Lin, 2007) who found that service quality is the determinants and critical success factor of satisfaction.

**H2: Service quality positively influences e-trust** ( $\beta=0.224$ ;  $p<0.001$ ). Sultan and Mooraj (2001) identified that service quality contributes in online shopping customers trust. This study confirms the belief that as service quality increases on e-tailers website it will enhanced the online customers trust.

**H3: E-trust positively influences e-satisfaction** ( $\beta=0.176$ ;  $p<0.005$ ). Our study supports the finding of (Harris and Goode, 2004; Jin and Park, 2006; Singh and Sirdeshmukh, 2000) and confirms that e-trust is essential for e-satisfaction.

**H4: E-satisfaction positively influences affective commitment** ( $\beta=0.187$ ;  $p<0.005$ ). This study found that e-tailing satisfaction is significantly associated with affective commitment. As Bansal et al. (2004) explained that online shopping customers' commitment is the consequence of satisfaction. The result of study supports the findings of (Vasudevan et al., 2006; Abdul-Muhmin, 2005).

**H5: E-satisfaction positively influences continuance commitment** ( $\beta=0.030$ ;  $p>0.005$ ). In our study e-satisfaction has not significantly associated with continuance commitment.

**H6: E-trust positively influences affective commitment** ( $\beta=0.444$ ;  $p<0.001$ ). In this study trust play more important role against e-satisfaction in the context of online customers affective commitment. E-trust has stronger relationship with affective commitment but at the same time it is the prerequisite for e-tailing customer's satisfaction. This study supports the findings of De Ruyter et al. (2001).

**H7: E-trust positively influences continuance commitment** ( $\beta=0.520$ ;  $p<0.001$ ). This study supports the findings of De Ruyter et al. (2001). E-trust is the strongest antecedents of continuance commitment in the context of online shopping.

## **5. MANAGERIAL IMPLICATIONS**

This study finding provides several managerial implications. The basic evidence of the proposed theoretical model was that e-tailers should understand comprehensively the factors that are necessary to improve the e-tailing service quality that will positively impact on e-satisfaction, e-trust and customer's commitment, and use them as diagnostic



information. Perhaps, by recognizing and analyzing such diagnostic aspects, e-tailers will be better able to formulate and implement their policies and strategies.

As Hansen and Bush (1999) recommended that a great success will be the result from a strategy that identified one targeted aspect of service quality, rather than from one in which the retail firm can improve marginally on all the aspects. The explanation of the research model has the potential to help e-tailers better understand and assess how service quality influences on e-satisfaction, e-trust and commitment. Learning the unexplored relationship between e-tailing service quality, e-satisfaction, e-trust and commitment, e-tailers can effectively allocate their resources and develop a rational plan and strategies to improve their e-tail service quality under specific business circumstances.

## **6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

In fact several authors have focused on multidimensional aspect of e-tailers product quality & delivery services and the relationship between customer satisfaction, e-trust and customer loyalty. This research sought to establish the bridges between service quality, e-satisfaction, e-trust and commitment of e-tailing. Empirical tests of the model, using a sample of young retail customers, were conducted to support the proposed hypotheses. Specifically, this research contributes to the progress of establishing and measuring the constructs of service quality, e-satisfaction, e-trust and commitment.

This study reveals several limitations. Firstly, sampling frame includes universities students that may lead to loss of generalizability of results. Secondly, dependent variable in the hypothesized model, e-satisfaction, e-trust and commitment are likely to be influenced by some other variables other than service quality of e-tailing, which were not the specific object of this study. Therefore, future studies might be conducted to explore the role of e-tailing service quality in the specific brand or product category and its influenced on customer's commitment.

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