Applying an Extended E-S-Qual Scale to Assess the Effects of E-service Quality on Online Loyalty with Customer Satisfaction and Perceived Value as Mediators

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Abstract: - The newly developed E-S-Qual scale was criticized by lacks of iterms referring to hedonic service elements. In order to establish a comprehensive and effective service quality scale in an online loyalty model, this study incorporated both utilitarian and hedonic e-service quality elements in the model. Hence, this study adds hedonic dimension to E-S-Qual scale to investigate e-service quality effect on e-loyalty. With an empirical data set including 234 valid cases collected on online survey, the proposed model was examined and used to test the effects of service quality on loyalty with customer satisfaction and perceived value as mediators. Our findings reveal that service quality not only directly affects loyalty, but also indirectly affects loyalty through customer satisfaction and perceived value. In addition, perceived value only has indirect effect on online loyalty.

Key-Words: Customer satisfaction, E-S-Qual scale, Online loyalty, Perceived value, Service quality.

1 Introduction

The rapid advances of information and communication technologies have made the exponentially growing volume of business on the Internet, which is believed a new marketing channel for the provision of products and services [1, 10, 19]. How to make use of this potential to meet customers' expectations in shopping online environment depends largely on the Internet retailer's ability to provide satisfactory products and services[27]. Previous research revealed that in the service industry to deliver high-quality services to consumers is a key factor affecting the performance of firms [1]. For consumers shopping on the Internet, for online retailers to provide service quality is a very important thing. In addition, perceived value of and customer satisfaction with the service quality of the Web site are considered as major marketing objectives [4]. The study of perceived value, service quality, and satisfaction have dominated research in the service literature[13]. Perceived value is considered as "an important predicator and the key determinant of customer satisfaction and loyalty" [15].

Many researches have strongly argued the framework that models the loyalty chain from service quality to loyalty with perceived value and satisfaction as mediators[13]. However, the results of previous studies in online contexts are not consistent. For examples, in a study of online service dynamics the well-established relationships between service quality and satisfaction, and between satisfaction and loyalty are not supported in one of the studied cases, which are contrary to the previous findings [13]. The relationships between customer perceived value, satisfaction, and loyalty are still unclear in the studies of key drivers of loyalty/behavioral intentions. For examples, Yang and Peterson(2004)[24] find that perceived value have direct and positive influences on online customer loyalty, which is inconsistent with those found by Hsu (2008)[14] and Lee, Yoon, and Lee(2007)[15] , where they suggests that the influence of customer value on loyalty (recommendations) is indirect and mediated by customer satisfaction.

In the competing e-business, companies must shift the focus of e-business from e-commerce to e-service and managers must make efforts to deliver superior service quality to satisfy online customers, because satisfaction is an important factor affecting online shoppers' loyalty to e-tailers and loyalty customers can bring many benefits to a firm including a continuous stream of profit[8, 16, 20, 23 ,.25]. On the other hand, unsatisfying service encounters may cause Web sales losses of, for instance, several billion dollars per year. Therefore,

managing e-service quality becomes an essential challenge for e-tailers and measuring e-service quality has become a very important issue to e-retailers who want to retain their customers [4]. Although Parasuraman, Zeithaml, and Malhotra (2005)[15] have developed a comprehensive work on e-service quality with a multiple item scale (E-S-QUAL) for assessing service quality of online shopping providers, E-S-QUAL scale was criticized by lacks of iterms referring to hedonic service elements[4]. The measurement of the relevant dimensions of Web-based service quality needs further research to continue development and validation [11].

The review of the papers on the relationships among service quality, perceived value, customer satisfaction and loyalty with varying arguments indicate that the relationships among the constructs need to be clearly defined and closely investigated. Therefore, the purpose of this research is

1. To propose and test an integrated model including the four constructs, i.e., service quality, perceived value, online satisfaction and loyalty, where we add a hedonic dimension to the construct of service quality.
2. To assess the effects of service quality on online satisfaction and perceived value.
3. To assess the effects of online satisfaction and perceived value on loyalty.
4. To investigate the mediating effects of online satisfaction and perceived value in the model.

2 Research Model and Hypotheses

2.1 Research Model
The research model linking the four constructs is shown in Fig.1. This model puts forward that service quality have effects on online satisfaction and perceived value, and which in turn influence online loyalty. In addition, this study examines the mediation effects of online satisfaction and perceived value on online loyalty. The hypotheses to be tested are posited on their respective paths.

2.2 Research Hypotheses
Based on the literature review, we suggest the following hypotheses.

Most studies indicated that e-service quality has a positive effect on satisfaction and has direct and indirect effect on loyalty, which, in turn, affecting customer loyalty [8, 11, 18]. Thus, we propose the hypotheses that:
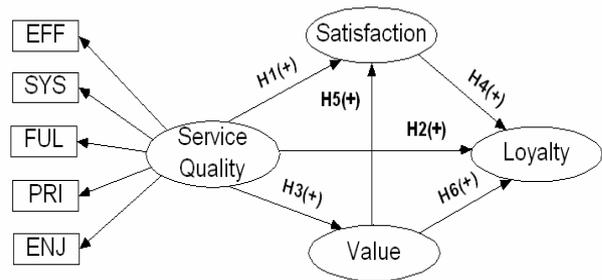

Fig.1 Research Model.

H1：Service quality will have a positive effect on online satisfaction.
H2：E-service quality will have a positive effect on online loyalty.

The extant literature strongly supports a positive effect of e-service quality on perceived value and favorable service quality makes customer having a higher perceived value [7, 11]. Based on these arguments, this study suggests the following hypothesis:

H3：E-service quality has a positive direct effect on perceived value.

Most studies on online satisfaction have found a positive relationship between online satisfaction and online loyalty [3, 8, 28, 24]. Fassnacht and Köse (2007)[11] also show that increasing customer's online satisfaction will help to enhance customer's online loyalty. It is hypothesized that:

H4：Online satisfaction has a positive direct effect on online loyalty.

Perceived value is defined as "the consumer's overall assessment of the utility of a product based on perception of what is received and what is given." Zeithaml (1988)[26]. The importance of perceived value in e-commerce "stems from the fact that it is easy to compare product features as well as prices online" and " contributes to loyalty of an electronic business by reducing an individual's need to seek alternative service providers"[3]. When customer has higher perceived quality on a product or service the value increased and will promote customer's willingness in repurchasing and it has been found to be a major contributor to purchase intention and proposed as the main factor in determining customer loyalty with a positive direct effect on online loyalty [3, 5, 11]. Previous empirical research found that customer perceived value has a positive direct effect

on customer satisfaction with a supplier [24]. Therefore, we hypothesize that:

H5 : Perceived value has a positive effect on customer satisfaction.

H6 ： Perceived value has a positive effect on loyalty.

As proposed above, service quality is the driver of perceived value and satisfaction, which both are in turn determinants of customer loyalty. Perceived value and customer satisfaction may mediate the effect of service quality on loyalty. Therefore, we propose the hypotheses that:

H7a ： Perceived value mediates the effect of service quality on loyalty.

H7b ： Customer satisfaction mediates the effect of service quality on loyalty.

3 Method and Results

3.1 Data collection

This study collected data through the structured questionnaire online survey. The questionnaire includes four constructs with their respective indicators, which were adapted from the items validated in prior studies and designed with a 7-point scale from 1=strongly disagree to 7=strongly agree[4, 6, 16]. All data came from those respondents who have experience in online shopping. After deleting invalid cases we obtained a final usable sample of 240 questionnaires for analysis.

3.2 Data Examination

Data examination is necessary initial step in data analysis for ensuring the results obtained from the analysis being truly valid and accurate[17]. The univariate skewness and kurtosis were computed to test the normality. The results showed that after deleting one item of perceived value with greater kurtosis, the skewness for all iterms were ranging from -1.11 to 0.02 and the kurtosis from -0.17 to 2.32, within the maximum limits of an absolute value of two for skewness and seven for kurtosis recommented by West, Finch, and Curran (1995)[21]. The check of outliers showed that six cases were identified as serious ones and deleted. As a result, there were 234 cases left for further analysis. The mean scores for the five dimensions of service quality (Efficiency (EFF), Fulfillment (FUL), System Avaibility (SYS), Privacy(PRI), and Enjoyment (ENJ)) were used as indicators of service quality in the model.

3.3 Results

Following the two-step approach recommended by Anderson and Gerbing(1988)[2], AMOS 16.0 was employed to assess the measurement model first and then to test the hypotheses proposed in the structural model.

3.3.1 Measurement model

The results of the confirmatory factor analysis show that the measurement model suggests close to fit the data(χ^2/df=2.83, GFI=0.86, NFI=0.90, TLI=0.92, CFI=0.93, and RMSEA=0.09). The standardized factor loadings are ranging from 0.55 to 0.91 and greater than twice their respective standard error, and the satisfactory values of average variance extracted(AVE) for all constructs (ranging from 0.57 to 0.66) provide evidence for convergent validity [12]. The discriminant validity for four constructs in the model was assessed by using chi-square difference tests and confidence interval test. The result showed that all the differences in χ^2 values were significant at p<0.01 and the confidence interval around the correlation estimate between any two construct did not include 1.0, The discriminant validity was evidenced [2]. Finally, all the high composite reliability for each construct (ranging from 0.84 to 0.91) indicated our measures were reliable.

3.3.2 Structural Equation Model

The hypotheses H1 to H6 proposed in the structural model were tested using AMOS 6.0. The model exhibited close to fit the data. Table 1 presents the estimated path coefficients of the structural equation model (i.e., unstandardized weights and standardized weights), the squared multiple correlations(SMC)for dependent constructs customer satisfaction, perceived value, and loyalty.

Overall five out of the six hypotheses have been supported. Consistent with the previous research, service quality has substantial direct effects on customer satisfaction (H1) (γ=0.611, p<0.01), perceived value (H3) (γ=0.826, p<0.01), and loyalty (H2) (γ=0.320, p<0.05),, respectively. About the direct effects of perceived value (H5 and H6), we found that customer satisfaction was affected by perceived value(β=0.274, p<0.05). But the test of H5 produces a surprising result: an insignificant negative effect of perceived value on loyalty (β=−0.149, t = −0.98, not significant at α=0.10), H5 was not supported. As for the test of hypothesis 4 (H4), loyalty, as expected, was strongly affected by customer satisfaction (β=0.583, p<0.01).

Table1 Hypotheses Results for the Structural Model

Research hypothesis		R^2	Weight	Standardized weight	t-value	Conclusion
H1 : Quality	→ Satisfaction	0.725	0.665	0.611	3.80**	Supported
H2: Quality	→ Loyalty	0.563	0.415	0.320	1.84*	Supported
H3: Quality	→ Value	0.682	0.861	0.826	14.00 **	Supported
H4: Satisfaction	→ Loyalty		0.694	0.583	4.22 **	Supported
H5: Value	→ Satisfaction		0.286	0.274	1.66 *	Supported
H6: Value	→ Loyalty		−0.185	−0.149	−0.98	Not Supported

Significant at *: p<0.05, **: p<0.01, one-tailed test.

3.3.3 Examination of Mediation Effects

The measures and tests of indirect effect were used to address mediation directly[17]. The indirect effect of service quality on loyalty through customer satisfaction and perceived value was significant with an effect value of 0.356 (t value =2.28) indicating an amount of its effect was mediated by other variables: customer satisfaction and perceived value. This indirect effect has three components: The indirect effect via customer satisfaction (service quality→ customer satisfaction → loyalty, having indirect effect of 0.356), the indirect effect via perceive value (service quality→perceive value →loyalty, having indirect effect value of -0.123), and the indirect effect via perceive value and customer satisfaction (service quality → perceived value → customer satisfaction → loyalty, having indirect effect of 0.132). Since the direct effect of service quality on loyalty was also significant (γ =0.320, p<0.05) the results showed that the effect of service quality on loyalty is partially mediated by perceived value and customer satisfaction.

4 Conclusion

Adding a hedonic dimension, enjoyment, to the construct of the newly developed service quality, E_S_QUAL, we proposed and tested an integrated online loyalty model, including service quality, customer satisfaction, perceived value and loyalty.

The proposed measures for each construct are reliable and the model was verified to fit the sample data well. The results of the analysis of structural model showed that all the proposed hypotheses are supported by the data except H5. The test of H5 produced a surprising result emerged with an insignificant negative effect of perceived value on loyalty, which may imply that perceived value does not have direct effect on loyalty but does influence on loyalty through customer satisfaction. When we drop the link from perceived value to loyalty, we find that the chi-square difference and the main fit indices of the competing model are indifferent from those of the proposed model, implying that the competing model is better used to understand the effects of service quality loyalty through customer satisfaction and perceived value.

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