The effects of service quality onconsumer satisfaction and consumer loyalty in the context of C2C e-commerce

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Abstract-In this paper, we explore the influence mechanism among service quality, consumer satisfaction and consumer loyalty in the context of C2C e-commence in china. Data for this study were collected through modified SERVQUALquestionnaire survey from consumer with C2C purchasing experience.The results shows thatthe service quality based on C2C e-store can still be divided into five dimensions. The study suggests that, in the context of C2C e-store, service quality has strong direct positive effect on consumer loyalty, meanwhile has indirect positive effect via consumer satisfaction, and consumer satisfaction have direct positive effect on consumer loyalty.

Keywords-C2C, e-commerce, service quality, consumer satisfaction, consumer loyalty,influence mechanism

1. Introduction

Customer loyalty has a very large impact on the survival and profitability of enterprises. For organizations, maintaining and increasing customer loyalty are important means of keeping competitive advantages. As the internet developed rapidly, the researches on customer loyalty in the field of electronic commerce are studied by many scholarsbased on the theory of customer loyalty, which has developed systematically for years. From the 90s of last century, as network marketing ways of B2B, B2C and C2C emerged, the number of internet users is growing. We can conclude that e-commerce business has had a profound impacton the traditional business[1].

Compared to traditional businesses, it takes more expensive to attract new customers for e-commerce companies[2]. The increased cost of maintaining customer loyalty makes the difficulty of maintaining even harder. These characteristics of e-commerce have changed the impact factors of consumer satisfaction and loyalty.Therefore, academic studies began to concentrate on the consumer loyalty under e-commerce context, which has become an important research direction.

2. Literature Review

2.1.The Service Quality in E-business

From the 80s of last century, many scholars have begun to study the service quality (Gronrros,1982; LehtinenandLehtinen,1982; Lewis and Booms,1983; Zeithaml,L.L. Berry and A. Parasuraman,1985) . They proposed many methods to measure service quality from different perspectives.Parasuraman, Zeithaml and Berryprovided a service quality scale (**SERVQUAL**), consisted of 22 attributes, to analyze the customers᾽ perception of service quality from five aspects: Tangibles –Appearance of physical facilities, equipment, personnel and communication material. *Reliability - ability to perform service dependably and accurately* Responsiveness - willingness to help and respond to customer need* Assurance - ability of staff to inspire

confidence and trust* Empathy - the extent to which caring individualized service is given[3]. Nowadays, this scale remains the most complete attempt to conceptualize and measure service quality. Nyeck, Morales, Ladhari, and Ponsthought that it was an efficient model in helping an organization shape up their efforts in bridging the gap between perceived and expected service[4]. However, whether the scale can be applicable to measure service quality under e-commerce environment is still in dispute.

V. Liljander et al concluded that when discussing the attributes of service quality under e-commerce environment, scholars in business administration field should neither completely copy nor thoroughly abandon the attributes of traditional SERVQUAL model of service quality.Considering the characteristics of e-commerce services[5], WenguoShen et al adjusted and amended some of the attributes of SERVQUAL scale and found that the traditional model of service quality is also applicable.

2.2.Consumer Satisfaction and Loyalty

In the field of previous researches on customer satisfaction, Oliverfirstly proposed expectancy disconfirmation theory: when the quality of products exceeds customers' expectation, they will be satisfiedotherwisethey will be disappointed. Nowadays, however, besides expectation, many scholars propose that the quality of products or services also influences the level of customer satisfaction[6]. This paper mainly consider the topic about customer satisfaction of   C2C transactions in accordance with Zeithaml's research, which indicates that expectancy disconfirmation theory is not appropriate to interpret issues of customer satisfaction in e-commerce transactions[7]. They concluded that customers have no criteria to weigh their expectations when trading online. Therefore, this theory proved that the service quality of e-commerce transactions is a factor of customer satisfaction. Anderson and Srinivasandefined e-loyalty as the customer's favorable attitude toward an electronic business resulting in repeat buyingbehavior[8]. Therefore, this study shows that customer satisfaction of e-commerce transaction has positive impact on customer loyalty. Furthermore, Gommans thought that the transaction service quality of e-commerce has more significant influences on maintaining customer loyalty than service qualities of traditional industries[9]. The reason is that customer loyalty of e-commerce transaction is relatively low, and the satisfaction is greatly influenced by the service quality.

3. Theoretical Model and Hypothesis

This article attempts to establish the following theoretical models and assumptions about effects of e-service quality on satisfaction and loyalty under C2C e-commerce context in china In the model construction, the paper draw on model framework from Shen Wenguoet al and Fan Xiucheng et al[10] to discuss of the impact of various factors of service quality on consumer satisfactionand loyalty. Each concept adapt from improved definition for the C2C Online shopping context. The research modelis shown in Fig. 1.
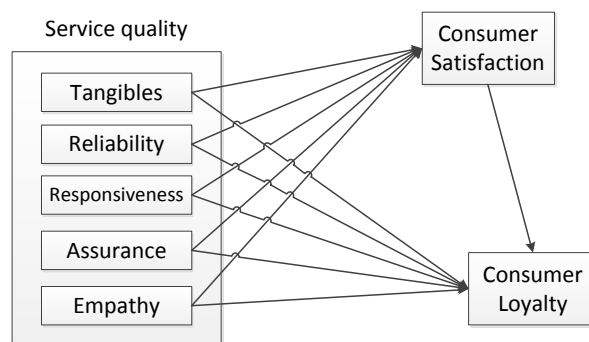

Fig.1 The research model

It was hypothesized that:

TABLE I.   HYPOTHESIS

NO.	Hypothesis

H1	C2Ce-commerce service quality has a positive effect on customer loyalty
H1a	Tangibles of C2Ce-commerce service has a positive effect on customer loyalty
H1b	Reliability of C2Ce-commerce service has a positive effect on customer loyalty
H1c	Responsiveness of C2Ce-commerce service has a positive effect on customer loyalty
H1d	Assurance of C2Ce-commerce service has a positive effect on customer loyalty
H1e	Empathy of C2Ce-commerce service has a positive effect on customer loyalty
H2	**C2Ce-commerce service quality has a positive effect on customer satisfaction**
H2a	Tangibles of C2Ce-commerce service has a positive effect on customer satisfaction
H2b	Reliability of C2Ce-commerce service has a positive effect on customer satisfaction
H2c	Responsiveness of C2Ce-commerce service has a positive effect on customer satisfaction
H2d	Assurance of C2Ce-commerce service has a positive effect on customer satisfaction
H2e	Empathy of C2Ce-commerce service has a positive effect on customer satisfaction
H3	**Customer satisfaction of C2Ce-commerce has a positive effect on customer loyalty**

4. Methodology

4.1. Survery Instrument Development

This studyuses the modified SERVQUAL questionnaire to measurethe five dimensions of e-service quality in the C2C e-commerce context. The final questionnaire is put up by advance of survey and interviewing to modify the original elements of questionnaire used by ShenWenguo and Sheng Tianxiang.

Author use cross-sectional questionnaire survey which targetedat Internet users who have hadC2C shopping experience. The survey questionnaires are sent through email and website, we got 264 validated from 342 recalled questionnaires, results in a 77% available response rates. Non-response bias was examinedby comparing the first one-third responses to the last one-third. Thiscomparison yielded no significant differences among the survey variables.

4.2. Analysis Method

This study use SPSS 16.0 statistical analysis software to analysis the empirical data. At first author use SPSS to carry on descriptive statistics and reliability testing, and then use the factor analysis and multiple linear regression analysis to examine the assumptions.

5. Data Analysis

5.1. Instrument Validation

We conducted reliability and validity tests of the measurement items using Cronbach's alpha and factor analysis. In this study, the Cronbach's coefficient Alpha of each variable is higher than the cutoff value of 0.7, indicating that the questionnaire has good internal consistency reliability[11].

The KMO of each variableyielded 0.838, 0.804 and 0.860respectively, suggesting that the sample was appropriate for factor analysis. Factors identified were coincident with the four initial influential variables, which implied that the scale has good construct validity.

5.2. Correlation Analysis

There were five factors in the variable of overall service quality. Correlation analysis of customer loyalty with these five ones was done respectively. As is shown in table II, customer loyalty is significantly correlated with five factors.

TABLE II. CORRELATIONS BETWEEN SERVICE QUALITY DIMENSIONS,OVERALL SERVICE QUALITY, AND SATISFACTION

	Consumer Satisfaction	Consumer Loyalty
Tangibles	0.461**	0.602**
Reliability	0.508**	0.482**
Responsiveness	0.161**	0.193**
Assurance	0.255**	0.247**
Empathy	0.459**	0.716**

Significance level:*p value<0.05, **p value<0.01

5.3.Regression Analysis

To ascertain the causal effect of overall service quality on customer satisfaction and customer loyalty, as well as the effect of customer satisfaction on customer loyalty, the model was tested using multiple stepwise regression analysis.

According to the results of regression analysis on customer loyalty versus service quality of C2C e-commerce, we drew the regression function, Customer loyalty = 1.207 + 0.778 * service quality.

Based on the regression analysis and the correlation analysis above, we carried out further regression analysis on customer loyalty between the five factors of service quality, obtaining the regression function, customer loyalty = 1.068 + 0.346 * empathy + 0.326 * tangibles + 0.083 * responsiveness + 0.064 * reliability.

TABLE III. RESULTS OF REGRESSION ANALYSIS BETWEEN CONSUMER LOYALTY AND SERVICE QUALITY DIMENSIONS

Model	B	Beta	t-value	p-value
Constant	1.068		4.574	0.000
Empathy	0.346	0.568	15.726	0.000
Tangibility	0.326	0.389	9.757	0.000
Responsiveness	0.083	0.088	2.568	0.011
Reliability	0.064	0.095	2.363	0.019

Similarly, according to the results of regression analysis on customer satisfaction versus service quality of C2C e-commerce, we drew the regression function, Customer satisfaction = 1.650 + 0.714 * service quality.

Based on the regression analysis and the correlation analysis above, we carried out further regression analysis on customer loyalty between the five factors of service quality, obtaining the regression function, customer satisfaction = 1.434 + 0.191 * empathy + 0.211 * tangibles + 0.123 * responsiveness + 0.434 * reliability.

TABLE IV. RESULTS OF REGRESSION ANALYSIS BETWEEN CONSUMER SATISFACTION AND SERVICE QUALITY DIMENSIONS

Model	B	Beta	t-value	p-value
Constant	1.434		4.242	0.000
Empathy	0.191	0.274	5.281	0.000
Tangibility	0.211	0.22	3.9	0.000
Responsiveness	0.123	0.134	2.728	0.007
Reliability	0.225	0.293	5.127	0.000

According to the results of regression analysis on customer satisfaction versus service quality of C2C e-commerce presented in TABLE V, we drew the regression function, Customer loyalty =2.006 + 0.602 * consumer satisfaction.

TABLE V.   RESULTS OF REGRESSION ANALYSIS BETWEEN CONSUMER LOYALTY AND CONSUMER SATISFACTION

Model	B	Beta	t-value	p-value
Constant	2.006		9.557	0.000
Satisfaction	0.602	0.69	15.445	0.000

5.4.Mediation Analysis

According to the research of mediating effect by   scholars (Baron & Kenny, 1986; Meehan, 1997)，   we try to examine the   mediating effect of customer satisfaction on the relationship between   service quality and customer loyalty, results is shown in table VI.

TABLE VI. MEDIATION ANALYSIS

	Consumer loyalty			
	Without Satisfaction		With satisfaction （Beta=.388**）	
	Beta	R^2_{adj}	Beta	R^2_{adj}
Service Quality	0.778**	0.474	0.501**	0.611

Significance level:*p value<0.05, **p value<0.01

When consumer satisfaction enters into the regression model, the contribution of the service quality on consumer loyalty drops substantially (from r=0.778 to r=0.501) The result shows that consumer satisfaction does play a role of partial mediator.

~~5.5.~~

~~5.6.~~5.5. Hypothesis test and model modification

With the help of analysis above, we tested the null hypotheses. The validated results were as follows:

Results revealed the acceptance of Hypotheses 1, 1a, 1b, 1c, 1e, 2, 2a, 2b, 2d, 2e,5, and 6, and Hypotheses 4 and 8 to a level of .1. On the otherhand, Hypotheses 1d and 2c were not supported. Then, the initial model was modified as shown in Fig. 2.
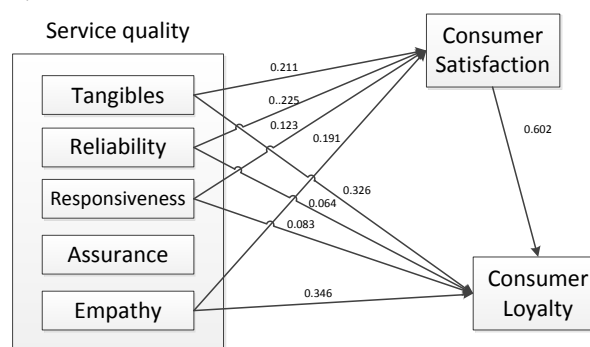

Fig.2 Modified research model

The modified research model suggests that empathy has the biggest effect on customer loyalty, followed by tangibles, responsiveness and reliability. Though there was an correlation between assurance and customer loyalty, assurance didn't enter the regression function mentioned. Consequently, it had little effect on customer loyalty.

6. Conclusions

This study explored the mutual relationship between service quality and satisfactory and loyalty, it is found that among the five dimensions of service quality, both tangible and empathy imposed a stronger

impact on satisfactory and loyalty, while responsiveness and reliability weaker, and the affect from assurance is invisible. This may be explained by the characters of C2C E-commerce shopping. Customers can not perceive the commodity face to face but judge by those descriptions which were provided by online sellers, both literally and pictures. Additionally, a sufficient and multi-perspective understanding on the commodity will be helpful for the evaluation of it. Most of time, online shopping is something like buffet, the mutual activities between buyers and sellers are rare due to lacking of direct contact. For these reasons, it is significant for E-commerce to exert great focus on the demand of customers and empathic understanding of customer needs.

Secondly, we demonstrated the positive relationship between the quality of service, satisfaction and loyalty. Perfect service quality is the basis of customers satisfactory, and leading the customers to form the loyalty. This also illustrates the importance of service quality further. Meanwhile, according to the data analysis, the standard regression coefficient is 0.602, which confirms the strong positive relationship between them. Our conclusion coincides with most researchers' (Cronin and Taylor, 1992; Anderson and Sullivan, 1993), and proposes a useful inspiration for those want to establish customer loyalty in a steady and orderly.

Consequently, we suggested that in the course of C2C e-commerce providing service, they take more communication with customers to learn their all kind of special demand, and throw their own effort to meet them, increasing the loyalty gradually.

In this paper, we proposed mechanisms regarding C2C e-commerce service quality and customer loyalty, and established C2C E-commerce service quality measurement on the basis of the classic dimensions of service quality measurement. According to the factors analysis, we figured the five service quality dimension out, namely tangibles, responsiveness, reliability, assurance and empathy, which can be a reference for follow-up researchers.

7. References

[1] Oliver, R.L., Whence consumer loyalty? The Journal of Marketing, 1999. 63: p. 33-44.J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.

[2] Reichheld, F.F. and P. Schefter, E-loyalty: your secret weapon on the web. 2000: Harvard Business School Press.

[3] Parasuraman, A., Zeithaml. VA, & Berry, LL (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of retailing. 64(1): p. 12-40.

[4] Nyeck, S., et al., 10 years of service quality measurement: reviewing the use of the SERVQUAL instrument. Cuadernos de Diffusion, 2002. **7**(13): p. 101-107.

[5] Liljander, V., A.C.R. van Riel, and M. Pura, *Customer satisfaction with e-services: the case of an online recruitment portal.* Electronic Services, 2002: p. 407-432.

[6] Oliver, R.L., A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 1980. **17**(4): p. 460-469.

[7] Zeithaml, V.A., Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. The Journal of Marketing, 1988: p. 2-22.

[8] Srinivasan, S.S., R. Anderson, and K. Ponnavolu, *Customer loyalty in e-commerce: an exploration of its antecedents and consequences.* Journal of retailing, 2002. **78**(1): p. 41-50.

[9] Gommans, M., K.S. Krishnan, and K.B. Scheffold, *From brand loyalty to e-loyalty: A conceptual framework.* Journal of Economic and Social research, 2001. **3**(1): p. 43-58.

[10] Fan Xiucheng and Du Jiangang, The Effect of Five-dimensional Service Quality on the Degreeof Satisfaction to Service and Loyalty.Management World, 2006(006): p. 111-118.

[11] Santos, J.R.A., Cronbach ¡¯s alpha: A tool for assessing the reliability of scales. Journal of Extension, 1999. **37**(2): p. 1-5.