Research of the Relationship of E-service Quality, Customer Satisfaction and Customer Loyalty in C2C Online Shopping

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Abstract: There are five major findings by using confirmatory factor analysis and structural equation modeling technique through survey data: (1) The service quality of C2C online shop is affected by four dimensions which are Web design, ease of use, reliability, and customer service; (2) The individual dimensions of service quality influences the customer satisfaction significantly positively; (3) The dimensions of ease of use and reliability influence the customer loyalty significantly positively; (4) The dimensions of web design and customer service influence customer loyalty indirectly by customer satisfaction; (5) The customer satisfaction significantly affects the customer loyalty. The results of this study have important meanings for managers of online shops to improve the customer loyalty. Online stores can devote valuable resources to the important e-service quality attributes identified by this study. At last, the directions of further research are suggested.

Keywords: Customer to customer, Quality of e-service, Customer satisfaction, Customer loyalty

1 Introduction

C2C e-business model rapidly develops as one of the models of consumers online shopping in recent years. Because it is much easier to compare product technical features and prices online than through traditional channels, e-service quality becomes a key factor for customers (Santos, 2003). Online customers thus expect higher levels of service quality than traditional channels customers. Without that, the customers can easily switch to other online shops by clicking the mouse in the C2C e-business model. So, making full use of limited resources, improving the service quality and the customer satisfaction, then maintaining the customer loyalty are particularly important.

So, there are two questions in this paper: first, exploring the dimensions of the service quality of C2C online shop; second, validating the influence that service quality of C2C online shop on customer satisfaction and customer loyalty.

2 Literature Review

2.1 E-service quality

Businesses with the most experience and success in using e-commerce are beginning to realize that the key determinants of success or failure are not merely web site presence and low price but also include the electronic service quality (e-service quality) (Yang, 2001; Zeithaml, 2002). E-service quality can be defined as overall customer evaluations and judgments regarding the excellence and quality of e-service delivery in the virtual marketplace (Santos, 2003). And also e-SQ is defined broadly to encompass all phases of a customer’s interactions with a web site: The extent to which a Web site facilitates efficient and effective shopping, purchasing, and delivery (Parasuraman et al., 2005).

Yoo and Donthu (2001) developed a nine-item SITEQUAL scale for measuring site quality on four dimensions: ease of use, aesthetic design, processing speed, and security. SITEQUAL does not capture all aspects of the purchasing process and therefore does not constitute a comprehensive assessment of a site’s service quality.

Wolfinbarger and Gilly (2003) used online and offline focus groups, a sorting task, and an
online-customer-panel survey to develop a 14-item scale called eTailQ. The scale contains four factors: Web site design, reliability/fulfillment, privacy/security, and customer service. Wolfinbarger and Gilly’s goal of creating a scale to measure customer perceptions of e-tailing quality is excellent. Although two of their dimensions—security/privacy and reliability/fulfillment—show strong face validity and are highly descriptive of the items they represent, the other two dimensions appear less internally consistent and distinct. These dimensions need to be tested further.

Parasuraman et al. (2005) using the means-end framework as a theoretical foundation, constructed a multiple-item scale for measuring the service quality. Two stages of empirical data collection revealed that two different scales were necessary for capturing electronic service quality. The basic E-S-QUAL scale developed in the research is a 22-item scale of four dimensions: efficiency, fulfillment, system availability, and privacy. The second scale, E-RecS-QUAL, is salient only to customers who had nonroutine encounters with the sites and contains 11 items in three dimensions: responsiveness, compensation, and contact.

Although past studies provide insights for evaluating e-SQ, the instruments for C2C shopping are insufficiency especially in China. So, additional research on the topic is necessary.

2.2 Relationship of e-service quality, customer satisfaction and customer loyalty

The service quality is one of important factors that affects the customer satisfaction is supported by many academic researchers (Cronin and Taylor, 1992; Chunxao Wang et al, 2001). As in the internet environment, most scholars support that e-service quality has a significant impact on customer satisfaction (Cronin, Michael, Tomas, 2000; Janda, Trochta and Gwinner, 2002; Biyan Wen, Chunxao Wang, 2002). Jun and Yang (2004) found that the dimentiongs of the service quality strongly influence customer satisfaction.

Many scholars show that service quality positively influences customer loyalty (Chunxao Wang et al, 2001; Xiaoyun Han, Chunxao Wang, 2003). In internet environment, some scholars found that e-service quality direct impacts customer loyalty (Wolfinbarger and Gilly, 2003; Shankar, Smith and Rangaswamy, 2003; Lee, Lin, 2005).

Nevertheless, in the context of C2C online shopping, few studies have examined the usefulness of relative service quality dimensions in predicting customer satisfaction and customer loyalty. This study aims to: (1) Derive the instrument dimensions of e-service quality following reference to the related literature in the C2C online shopping context; and (2) Determine how the e-service quality dimensions affect customer satisfaction and customer loyalty.

3 Research Model and Hypotheses

This study proposed that e-service quality dimensions include web site design, ease of use, reliability, customer service. And moreover developed a research model proposed that e-service quality dimensions are casually linked to the two performance measures of customer satisfaction, customer loyalty. Customer satisfaction affects customer loyalty strongly in the C2C online shopping context. (See Figure 1)
The hypotheses are proposed:
H1a: Web site design in the C2C online shopping positively influences customer satisfaction.
H1b: Web site design in the C2C online shopping positively influences customer loyalty.
H2a: Ease of use in the C2C online shopping positively influences customer satisfaction.
H2b: Ease of use in the C2C online shopping positively influences customer loyalty.
H3a: Reliability in the C2C online shopping positively influences overall customer satisfaction.
H3b: Reliability in the C2C online shopping positively influences customer loyalty.
H4a: Customer service in the C2C online shopping positively influences customer satisfaction.
H4b: Customer service in the C2C online shopping positively influences customer loyalty.
H5: Customer satisfaction in the C2C online shopping positively influences customer loyalty.

4 Research Methodology

4.1 Measures
This study adapted the measures used to operationalize the constructs included in the investigated model from relevant previous studies, making minor wording changes to tailor these measures to the online shopping context. All items were measured using a five-point Likert-type scale (ranging from 1 strongly disagree to 5 strongly agree). With the establishment of content validity, the questionnaire was refined through rigorous protesting. The protesting focused on instrument clarity, question wording and validity. After the protesting, several items were removed from the instrument based on the feedback from the protesting subjects. The final questionnaire items used to measure each construct were that: web sit design (visually appealing, well-organized appearance, pictures of the products); ease of use (ease to find products, easy to order, ease to pay); reliability (product illustrating exactly, deliver within the promised time, security system to protect my information, the payment security); customer service (prompt service, willing to help, professional service); customer satisfaction (satisfied with experience, pleasure with shopping, feel wisdom shopping online); customer loyalty (positive word of mouth, first choice for future, encourage others to use).

4.2 Subjects
A total of 450 questionnaires were distributed to senior year undergraduate students and teachers at Zhengzhou. The subjects were selected in this study for three reasons. First, college students and teachers are greatest proportion of internet users. Second, online customers generally are younger and
better educated than conventional customers, meaning that the subjects closely resemble the online customer population.

The response rate was 94.67% percent, but since 16 questionnaires later were discarded because of missing data, the effective response rate was approximately 91.11% percent. All the respondents had previously bought from C2C online shop.

4.3 Statistical analysis
The research model shown in Figure 1 was analyzed primarily using SEM, supported by LISREL 8.5 software. Numerous researchers have proposed a two-stage model-building process for applying SEM (Hoyle, 1995; Joreskog and Sorbom, 1996; Hair et al., 1998). Confirmatory factor analysis (CFA) was conducted to examine the reliability and validity of the measurement model, and the structural model also was analyzed to test the associations hypothesized in the present research model.

5 Results

5.1 Measurement model
The measurement model was first assessed by CFA. The chi-square statistic was 378.54 with 137 degrees of freedom. The GFI, AGFI, CFI, NFI, NNFI were 0.91, 0.88, 0.98, 0.98 and 0.98, respectively. The fit indexes also show good fit for the measurement model. Moreover, the RMSEA is 0.066, which is slightly above the cut-off value of 0.60 suggested by Hu and Bender (1999), can also be accepted. In sum, the measurement model exhibited a fairly good fit with the data collected.

The measurement model was further assessed for composite reliability and validity. Composite reliability coefficient is similar to that of Cronach’s alpha, except that it also takes into account the actual factor loadings rather than assuming each item to be equally weighted in the composite load determination. Composite reliability for all factors in the measurement model ranging from 0.87 to 0.95, exceeded 0.70 which Nunnally and Bernstein (1994) identified as an acceptable threshold. Bagozzi and Yi (1988) defined a factor loading exceeding 0.7 as evidence of convergent validity. The factor loadings for all constructs ranging from 0.75 to 0.94, indicating acceptable items convergence on the intended constructs. Additionally, the average variance extracted for each dimension ranged from 0.69 to 0.86, and was greater than the squared correlation between the dimensions and any other dimensions, which indicates the independence of the dimensions as evidence of discriminant validity.

5.2 Structural model
The hypothesized research model was tested using the structural model. The chi-square statistic was 423.92 with 193 degrees of freedom. The GFI, AGFI, CFI, NFI, NNFI, RMSEA were 0.99, 0.88, 0.91, 0.98 and 0.98, 0.66, respectively. The model fit indexes indicated that the displayed fitted the data well. The statistical significance of all the structural parameter estimates was examined to determine the validity of the hypothesized paths. Table1 lists the structural parameter estimates and the hypothesis testing results. This study examines the relationships of the dimensions of e-service quality, customer satisfaction and customer loyalty in the C2C online shopping context.
Table 1: Results of estimation structural model

<table>
<thead>
<tr>
<th>Path to</th>
<th>Path from</th>
<th>hypothesis</th>
<th>structural coefficients</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>Wb sit design</td>
<td>H1a</td>
<td>0.31 **</td>
<td>5.05</td>
</tr>
<tr>
<td></td>
<td>Ease of use</td>
<td>H2a</td>
<td>0.13 *</td>
<td>2.01</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
<td>H3a</td>
<td>0.23 **</td>
<td>4.15</td>
</tr>
<tr>
<td></td>
<td>Customer service</td>
<td>H4a</td>
<td>0.26 **</td>
<td>5.09</td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>Wb sit design</td>
<td>H1b</td>
<td>0.07</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>Ease of use</td>
<td>H2b</td>
<td>0.13 *</td>
<td>2.31</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
<td>H3b</td>
<td>0.25 **</td>
<td>5.09</td>
</tr>
<tr>
<td></td>
<td>Customer service</td>
<td>H4b</td>
<td>0.09</td>
<td>1.82</td>
</tr>
<tr>
<td></td>
<td>Customer satisfaction</td>
<td>H5</td>
<td>0.42 **</td>
<td>6.91</td>
</tr>
</tbody>
</table>

Note: * p, 0.05; and **p, 0.01

From the Table 1, the H1a, H2a, H3a, H4a, H2b, H3b and H5 are supported. However, the H1b and H4b were not supported.

6 Conclusions and Implications

This study developed instrument dimensions of e-service quality in the C2C online shopping context. The dimensions of e-service quality included web site design, ease of use, reliability, customer service. Moreover, this study developed a research model to examine how e-service quality dimensions affect customer satisfaction, and customer loyalty. All e-service quality dimensions affect customer satisfaction strongly; dimensions of ease of use and reliability affect customer loyalty positively.

From this study the following implications for practitioners can be got: First, this study suggests that to enhance customer loyalty, online stores should develop marketing strategies to better address the dimensions of ease of use and reliability, they are significant predictor of customer satisfaction and customer loyalty in C2C online shopping context, such as capability of making the processes during online transaction ease of use, delivering products as promised, providing accurate information of the products, and strengthening the security of online transactions.

Next, although web site design and customer service had only minor effect on customer loyalty directly in this study, they affect customer loyalty their importance should not be underestimated. Online stores should pay careful attention to this aspect. Particularly, web site design should be readable, and the users should be visually appealing and tidy.

7 Limitations and Future Research

This study suffers two main limitations. First, since this study only considered C2C online shops, it is unclear whether the results can be generalized to other online marketplaces. Second, the sample may not be representative of the general population of C2C online shoppers. The results presented here thus may have limited generalizability.

Further research can apply the research model to examine other types of online shops. Finally, since the sample was collected in Zhengzhou, generalizability to other cities might be limited due to cultural differences in purchase behaviors. Thus, the study can be replicated in other cities.

References

[1]. Yoo, Boonghee and Naveen Donthu, Developing a Scale to Measure the Perceived Quality of an