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A Structural Model of Managing E-commerce Transaction Quality and Perceived Online Transaction Value

Qian Xiao
Eastern Kentucky University

Perceived Quality of E-commerce Platform and Its Performance Implications:

A Managerial Perspective

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Qian Xiao
Department of Management, Marketing and International Business
Eastern Kentucky University
521 Lancaster Avenue, Richmond, KY 40475
Tel: +1.859.622.7349
Email: qian.xiao@eku.edu

Literature Review and Hypotheses Development

Conceptualizing e-service quality and understanding its performance implications have become an important research topic given the fast development of internet technologies and various business models of e-commerce by means of expanding online marketplaces. There are two common online platforms for e-commerce portals: Corporate companies' own Web sites (e.g., Walmart.com and Dell.com) that offer the online purchase option as an alternative to the traditional retailing stores; and the third-party (T-P) Web sites (e.g., eBay.com and Amazon.com) that provide the online platforms to facilitate the transactions between buyers and sellers. This paper focuses on the e-commerce platforms that mainly function as third-party intermediaries to facilitate the business transactions on the online marketplaces.

Previous research on the e-commerce platforms mainly touches on the design of the websites itself in terms of easy access, ease of using technology, payment security, etc.; yet when the e-commerce portals serve as an intermediary platform, both the online platform and the participating sellers independent of the web site will jointly influence the transaction process.

Consequently, a comprehensive e-service quality evaluation of e-commerce platforms as intermediaries should include both the evaluation of functionality of the web site itself, and the performance assessment of independent sellers that are operating on the web site. As such, the current study tends to investigate the joint impacts of both e-commerce platform and the performance of independent sellers on users' experience – perceived online transaction value and the ensuing satisfaction.

Prior studies have recognized the importance of e-retailing and developed multiple scales of e-service quality (e.g., Collier and Bienstock, 2006; Parasuraman, Zeithaml, and Malhotra, 2005). Those studies emphasize the multi-dimensional nature of evaluating e-commerce platforms and propose a variety of components of e-service quality such as Web site design, security, web site service, easy to use, etc. Those quality dimensions developed in the traditional literatures focused on the corporate website design are believed to be applicable to the context of e-commerce platforms as intermediaries, and are included in the hypotheses tests. Meanwhile, this study also tries to fill the research gap in the third-party website context by including two additional dimensions that investigate the independent sellers' performance as they operate on the web sites. Specifically, the additional components of e-service quality try to examine independent sellers' ability to deliver the product as promised (i.e., in time and in proper conditions), and sellers' willingness to professionally address the online transaction issues in a timely manner.

Specifically, our research question is: what are the combining effects of web site attributes and sellers' performance on the online transaction experience as measured by the perceived online transaction value and satisfaction?

Methodology

Data were collected using an online survey administration tool (www.qualtrics.com). The sample comprises 103 males and 118 female participants (N=221). 52.75% held a university degree or above, 37.2% had received a high school diploma, and 9.95% had completed GED test. The majority of respondents were between 26 to 65 years old (88.56%), and 6.66% of respondents were younger than 26 years old, and 4.78 % were older than the age of 65.

All constructs were measured using previously developed 7-point Likert-type multi-item scales. Each scale's reliability, measured by Cronbach's alpha, exceeded the threshold of 0.70 recommend by Hair et al. (2010).

Confirmatory factory analysis (CFA) was used to assess construct validity. LISREL 8.80 was applied for data analysis.

The resulting χ^2 fit statistic of six constructs model is 1128.58 with 666 degrees of freedom ($p < .01$). The model comparative fit index (CFI) is .99, the root mean squared residual (RMSEA) is .059, and the parsimony normed fit index (PNFI) is .87. All factors are highly significant ($p < 0.05$) and the variance extracted estimates range from 0.64 to 0.74. Construct reliability coefficients range from .83 to .94. Thus, the measurement model exhibits adequate convergent validity and fit.

The structural equation model fit was estimated. The resulting χ^2 is 1164.09 with 673 degrees. The RMSEA is .060, the CFI is .99, and the PNFI is .88. These results suggest a reasonably good fit for the theoretical model given the model parameters.

Table 1 displays the SEM paths' estimates.

Insert Table 1 here

We conducted post-hoc analysis to gain further insights about the impacts of privacy and fairness. Specifically, we performed ANOVA analysis by perceived online transaction value

variable as the dependent variable and high/low privacy and high/low fairness as independent factors. Gender and income were used as control variables in the ANOVA analysis. The ANOVA analysis results showed that the perceived online transaction values is significantly higher for high privacy group as opposed to low privacy group (F= 37.44, P <0.01, M low privacy = 5.04 v.s. M high privacy = 6.17). Similarly, the ANOVA analysis confirmed that perceived online transcation values is significantly higher for high fairness group as opposed to low fairness group (F= 34.76, P <0.01, M low fairness = 5.14 v.s. M high fairness = 6.27). Thus ANOVA analysis provides fair evidence for H3 and H5.

Conclusion

Reach points to a massive online market; there's $300 billion online and it's growing to half a trillion soon. There's a huge market out there. Thus it is of great importance and significance to continue with this research topic in the future. A universal e-service quality scale that focuses on the online website design might not be sufficient to address the online transaction encounters on the third-party Web sites; it is necessary to develop a comprehensive measurement of e-service quality in the context of e-commerce platforms as intermediaries that involves the evaluation of the joint affects from both Web sites and independent sellers. This study represents some of the early works in this direction.

Reference

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Hair, Joseph F. Jr., Black, William C., Babin, Barry J. and Anderson, Rolph E. (2010). Multivariate data analysis 7th ed. Upper Saddle River, NJ: Prentice Hall.

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Table 1. Structural Path Estimates for the Theoretical Model

Hypotheses	From		To	(β)	Summary
H1	Efficiency	–>	Perceived online transaction value	.19	*Support*
H2	System availability	–>	Perceived online transaction value	.23	*Support*
H3	Privacy	–>	Perceived online transaction value	.05	*Not Support*
H4	Web site service	–>	Perceived online transaction value	.28	*Support*
H5	Fairness	–>	Perceived online transaction value	-.09	*Not Support*
H6	Fulfillment	–>	Perceived online transaction value	.48	*Support*
H7	Sellers service	–>	Perceived online transaction value	.16	*Support*
H8	Perceived online transaction value	–>	Satisfaction	.83	*Support*