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Managing E-commerce Platform Quality and its Performance Implication: Multiple-Group Structural Model Comparison

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Author Comments:	Dear Editor and reviewer(s), Thank you very much for offering us the opportunity to revise and resubmit our manuscript entitled, "Managing E-commerce Platform Quality and its Performance Implication: A Multiple-Group Structural Model Comparison". We appreciate the reviewers' thorough and insightful feedback on the previous version of our paper. Particularly, we want to send our special thanks to Editor Regina Connolly as she suggested good supporting references (such as Pavlou and Gefen's studies and the recent research in European Journal of Information Systems) to help enhance our writing. Those recent studies are well used in our revised manuscript and contribute to a comprehensive analysis of e-service quality literature. We summarized in "responses to editor and reviewers" how we responded to each of the issues you concerned. Each of the original comments is provided first, followed by our response. Best regards, Qian Xiao

Abstract:	This study develops a comprehensive e-service quality measure of e-commerce platforms as intermediaries which considers both the functionality of the website itself, and the performance assessment of independent sellers. The study further investigates the joint impacts of both the attributes of e-commerce platforms and the performance of independent sellers on users' online shopping experience - perceived online transaction value and the ensuing satisfaction. Finally, the study examines the effects of e-service quality on the outcome variables across two major e-commerce platforms as intermediaries, eBay and Amazon. The multiple-group structural model analysis provides important insights to understanding differing impacts of different quality components on shopping experiences across various online marketplaces. Theoretical and managerial implications are discussed.

Additional Information:	
Question	Response

Title: Managing E-commerce Platform Quality and its Performance Implication: A Multiple-Group Structural Model Comparison

Introduction

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. There are two common formats of e-commerce platforms: 1) corporate sellers' own websites (e.g., Walmart.com and Dell.com) that supplement the brick-and-mortar retailing with the online retailing environment; and 2) the third-party (T-P) websites with e-commerce platforms serving as intermediaries (e.g., eBay.com, Amazon.com, and Alibaba.com) that build the online environment to facilitate transactions between buyers and sellers. Whilst e-service quality is typically examined in relation to sellers' own websites, little research exists about the service quality of e-commerce platforms as intermediaries (Liu, Guo, and Hsieh, 2010; Zhang, 2006). This study tries to fill the gap in the literature to draw the attention to the intermediary e-service quality, and define and validate a comprehensive measurement of e-service quality in the context of e-commerce platforms as intermediaries.

E-commerce platforms as intermediaries are different from regular retailers' own websites. The former consist of three elements: the web site, sellers, and buyers. Buyers interact with both the e-commerce portal site and sellers to accomplish the shopping task. On the one hand, e-commerce platforms as intermediaries function as service providers and manage the exchange network between buyers and sellers. An important role for such e-commerce intermediaries is of a trustworthy third party, which builds the infrastructure for involved parties to interact with each other, and provides value-added services such as payment processing, privacy protection, etc. As such, the e-commerce portal needs to develop its control mechanisms, technical standards and security procedures to ensure website reliability and smooth transaction. On the other hand, seller performance also significantly influences the quality of buyers'

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interactions with websites. Sellers, independent of the website, handle the retailing transaction, deliver purchased items, provide after-sales services, and offer resolutions to problems when they occur, thus affecting all phases of buyers' purchase experience. A significant percentage of sellers on the third-party e-commerce portals are individuals who may lack the skills of providing similar shopping experience like business sellers do. In addition, many of the products sold on the third-party e-commerce portals are pre-owned items, which may likely lead to transaction disagreements, disputes, and conflicts between buyers and sellers because the quality of a pre-owned item is hard to define and to be agreed upon between different parties.

Extant literature across a variety of disciplines establishes a basic knowledge about e-service quality in the context of sellers' own retailing sites. Particularly, the well cited e-service quality studies (e.g., the E-S-QUAL and E-RecS-QUAL model by Parasuraman *et al*., 2005; the eTransQual model by Bauer *et al*., 2006; and the eTailQ model by Wolfinbarger and Gilly, 2003) mainly focus on the website performance without considering the role of sellers independent of the website. Therefore, those studies overly emphasize the functionality of websites, and may not be sufficient to provide insights to the e-service quality evaluation in the context of e-commerce platforms as intermediaries. In order to address the uniqueness and complexity of such e-commerce business model, it is meaningful to develop a comprehensive e-service quality measure of e-commerce platforms as intermediaries which considers both the functionality of the website itself, and the performance assessment of independent sellers. Furthermore, the current study goes beyond refining the domain of e-service quality of intermediary e-commerce platforms, and investigates the joint impacts of both the attributes of e-commerce platforms and the performance of independent sellers on users' online shopping experience – perceived online transaction value and the ensuing satisfaction. We integrated measures of e-service quality from

established literature, developed additional measures reflective of sellers' performance, and

adapted them to the context of e-commerce platforms as intermediaries. In addition, we

conducted a comparative analysis of the multiple-group structural model to examine the effects

of our defined e-service quality on the outcome variables (i.e., perceived online transaction value

and the ensuing satisfaction) across two major intermediary e-commerce platforms (i.e., eBay

and Amazon). The multi-group structural model analysis provides important insights to

understanding how different quality components may have different impacts on shopping

experiences across various online marketplaces.

The paper is structured as follows: The next section presents the literature review with

discussions of the research model and hypotheses development. Then research methodology is

presented in detail. Finally, research findings are outlined and implications are explored.

Literature Review and Hypotheses Development

The trading process on the third-party e-commerce platforms involves a number of

discrete stages that include pre-transaction phase and transaction phase. In the pre-transaction

phase, an e-commerce portal is built up to allow sellers to demonstrate products, and assist

buyers in the information search. Technological attributes of e-commerce platforms are

particularly emphasized in this phase. In the transaction phase, buyers and sellers match up to

reach agreements on the transaction. Main activities handled by sellers (e.g., responses to

questions, delivery, after-sales service, etc.) directly influence the interaction quality in this

phase. That said, in the context of e-commerce platforms as intermediaries, website performance

and seller performance combined together alleviate customer anxiety, and contribute to the

positive shopping experience. Accordingly, this study highlights the role of both e-commerce

portal sites and sellers independent of the websites in influencing the perceived e-service quality of e-commerce platforms as intermediaries.

The website performance aspect addresses to what extent the e-commerce platform facilitates efficient and effective online transactions; common components of e-service quality measures from the established literature could be applied to reflect the website quality. Specifically, traditional e-service quality studies focused on the interaction between buyers and regular shopping websites, and developed different quality dimensions such as efficiency, system availability, privacy, etc. (e.g., Parasuraman *et al*., 2005; Wolfinbarger and Gilly, 2003; Collier and Bienstock, 2006a). The seller performance aspect reflects the distinctiveness of e-service quality evaluation in the context of e-commerce platforms as intermediaries. We drew upon research on the customer service and C2C online business models (e.g., Yen and Lu, 2008; Liu et al., 2010) to refine the domain of quality dimensions in this aspect.

In the following sections, selected constructs of e-service quality are specified; particularly how each of those e-service quality dimensions influences buyers' perceived online transaction value is discussed. Buyers' perceived online transaction value refers to customers' subjective assessment of shopping experience as to whether it is worthwhile to engage in the transaction and whether the shopping goal is accomplished given the investment of time, energy, and other resources (Viio and Grönroos, 2015). Along with similar shopping experience evaluation variables such as customer satisfaction, customers' perceived transaction value is considered essential to understand shopping experience (Viio and Grönroos, 2015), and is thus included in our hypotheses development.

Website quality of e-commerce platforms as intermediaries

As the point of contact, the e-commerce platform plays a central role in creating and maintaining the infrastructure to serve both sellers and buyers with fairness (Qu, Pavlou, and Davison, 2014), and in managing and mediating those interaction relationships (Gefen and Pavlou, 2012). While researchers realized that there is no consistent position with regard to instruments for measuring website service quality (e.g., Connolly, Bannister, and Kearney, 2010), traditional e-service quality research developed a number of tools to investigate interactions between buyer and website, and provided an adequate framework for measuring website quality. Following the research methodology from Connolly, Bannister, and Kearney (2010), and Liu, Guo, and Hsieh (2010), we employed the perspective of Parasuraman *et al*. (2005), Wolfinbarger and Gilly (2003), and Collier and Bienstock (2006a), incorporated the most common components of website quality from these well established literature, and made modifications to tailor the measures to be compatible with the nature of e-commence platforms as intermediaries. Those above mentioned studies laid groundwork for understanding the assessment of website quality, and provided a good theoretical formulation to apply in both B2C (e.g., sellers' own websites as the transaction site) and C2C (e.g., the third-party e-commerce portals as the transaction site) e-commerce contexts. In sum, we propose that system availability, efficiency, privacy, Web site service, and fairness are five dimensions in assessing the website quality in the context of e-commerce platforms as intermediaries.

System availability refers to the correct technical functioning of the Web site (Parasuraman *et al*., 2005). A Web site with high system availability means: (1) it is always available for business, (2) it has a reliable and accurate ordering system, and (3) it always responds to buyers' and sellers' requests quickly. If an online buyer finds the level of a Web site's system availability is low (e.g., Web site shows broken links, Web site can't accept

payment, etc.), the buyer is likely to be upset and dissatisfied. In other words, system availability helps move forward the transaction progress and save shopping time, thus is positively associated with customers' perceived online transaction value (Bauer *et al*., 2006; Madu and Madu, 2002). Hypothesis 1 is developed as below:

H1: System availability positively influences perceived online transaction value.

The second dimension that makes up the Web site quality is *efficiency*. Efficiency refers to the ease and speed of accessing and using the Web site (Parasuraman *et al*., 2005). Ease of use, speed of accessing, and Web site design are primary characteristics of efficiency. Ease of use has been reported as one of the most important drivers for spurring buyer shopping online, strengthening buyer attitude toward the Website, and building buyer loyalty (e.g., Elliott and Speck, 2005; Palmer, 2002). Furthermore, speed of accessing the information and a well-designed Web layout make the online shopping trip easy and efficient. These two aspects of Web site efficiency have been also recognized as important reasons for buyers to revisit the Web site (Rosen and Purinton, 2004). In sum, a highly efficient website leads to favorable customer attitude, positive feeling, and high level assessment of perceived transaction value. Consequently, we propose:

H2: Efficiency positively influences perceived online transaction value.

The third dimension of Web site quality is *privacy*. Privacy has been recognized as one basic attribute of Web site quality by almost every study. Privacy is the degree to which the Web site has adequate security features to protect user information and facilitate a safe transaction between sellers and buyers (Wolfinbarger and Gilly, 2003). It is challenging to maintain a safe online marketplace as the online market is characteristic of low entry costs for various traders to participate in the e-commerce, lack of the ability for buyers to examine the product and evaluate

the seller, few secure payment options for the transactions, and lack of direct encounter between

buyers and sellers in the transaction process. Therefore, the assurance of privacy and security can

reduce customer anxiety, foster trust, and contribute to positive evaluation of the transaction

value. Thus hypothesis 3 is presented below:

H3: Privacy positively influences perceived online transaction value.

The fourth dimension of Web site quality is *Web site service*. E-commerce platforms as

intermediaries must strive to provide responsive and helpful service (Wolfinbarger and Gilly,

2003). Web sites need to address buyers' requests during the whole shopping process such as

helping the buyer to understand the website functions, providing live support 24/7, providing

after-purchase service, and solving buyer complaints if the seller does not address buyers'

requests successfully. Hence, Web site service serves both sellers and buyers in a fair exchange

environment, and mediates their transaction relationships. Good web site service reduces the

transaction uncertainty, and contributes to the high evaluation of transaction value. Thus we

propose:

H4: Web site service positively influences perceived online transaction value.

The last dimension of Web site quality is *fairness* (Collier and Bienstock, 2006a).

Fairness refers to the protection from e-commerce platforms that helps buyers attain a fair

solution if the buyer reports a problem in the transaction. Service failure is not an unusual

problem for online transactions. For example, Gavish and Tucci (2006) suggest that 6.25 percent

of e-commerce transactions in the U.S. were attempts at fraud based on a VeriSign study. EBay,

the world's largest online auction site, has more than 2000 employees policing its site. However,

eBay constantly receives countless buyers' complaints because it can't effectively stop the fraud

on the site (Mangalindan, 2007). Therefore, the protection from e-commerce platforms is

extremely important to buyers. Collier and Bienstock (2006a) proposed three types of fairness which include interactive fairness, procedural fairness, and outcome fairness. Collier and Bienstock (2006a) defined interactive fairness as the buyer's ability to locate and interact with technology support on a Web site and how the Web site treats the buyer with fairness. The procedural fairness refers to the Web site's policies, procedure, and responsiveness to assist buyers in their complaints. Finally, outcome fairness refers to the ability of the Web site to conclude a fair solution for a transaction complaint. In the current study, we focus on outcome fairness for two reasons. First, outcome fairness is the most important component to buyer's recovery experience compared to the impacts of other two fairness aspects. Outcome fairness is the necessary and ultimate determinant which relates to whether service recovery is successful. Second, the results of our research framework would be easily interpreted by only including one fairness variable, as other two fairness variables may overlap with other quality dimensions such as seller performance and website service, and confound the statistical test results. In other words, including only outcome fairness in the research framework is theoretically parsimonious without losing the power to explain Web site's service recovery performance. Thus, outcome fairness is included as one more essential component of Web site quality due to the high rate of buyers' complaints in the context of e-commerce platforms as intermediaries (Collier and Bienstock, 2006a). Apparently, the assurance of outcome fairness fosters customers' confidence in the online transaction, and contributes to the positive evaluation of online transaction value. Thus we propose:

H5: Fairness positively influences perceived online transaction value.

In summary, these five dimensions cover core requirements of the website quality assessment relevant to the e-commerce platforms. The first four dimensions (system availability,

efficiency, privacy, and Web site service) are relevant for online buyers' routine encounter on the Web site. Extant literature has recognized the importance of these four dimensions of Web site quality on buyer's experience. Web sites need to strengthen the quality of these four attributes to produce a better shopping experience to online buyers. If buyers are pleased with these four quality dimensions, they are more likely to perceive a higher level of perceived online transaction values (e.g., buyer successfully completes the purchase tasks). As a result of the higher level of perceived online transaction values, buyers are more satisfied with the shopping experience. In contrast, if any of the four quality dimensions is poorly designed, buyers are more likely to experience lower level of perceived online transaction values and ultimately experience lower level of satisfaction.

When nonroutine transaction encounter occurs (e.g., service failure), the fifth dimension of Web site quality—fairness, plays a critical role in addressing the issue to support the buyer to receive a fair solution. Buyers are subject to high risks on the online marketplaces since they can't try the product before purchase. Sometimes, the products received by buyers do not match what they originally ordered. Furthermore, there are enormous online scams reported annually. For example, Bauerly (2009, p.133) suggest "a 2007 *Buyer Reports* Study found almost half of eBay buyers encountered deceptions." Therefore, it is extremely important for the third-party e-commerce platforms to protect these "injured buyers" from any loss. Hence, fairness contributes to a buyer's value perception and ensuing satisfaction.

Seller quality of e-commerce platforms as intermediaries

By seller quality, we refer to the seller performance relevant to accurate information, merchandise processing, items delivery, after-sales service, etc.. In the context of e-commerce platforms as intermediaries, e-service quality is more than just how a consumer interacts with a

website; it is the sellers, not the website, that actually sell product or services to online buyers.

The widespread acceptance of the causal link between buyers' loyalty and sellers' performance (e.g., Viio and Grönroos, 2015) suggests that sellers' performance influences buyers' satisfaction and the shopping experience evaluation (Hong and Pavlou, 2014). We drew upon research on the customer service and C2C online business models (e.g., Yen and Lu, 2008; Liu et al., 2010) and proposed that seller quality in the context of e-commerce platforms as intermediaries is represented by two dimensions: fulfillment and seller service.

Fulfillment is the degree to which the seller provides accurate display and description of a product and delivers the right product to buyers within the promised time frame and obeys the shipping agreement (Wolfinbarger and Gilly, 2003). Fulfillment reflects the seller's ability to deliver the product to buyers as promised, i.e., in time and in proper condition (Parasuraman *et al*., 2005; Wolfinbarger and Gilly, 2003). Since it is usually hard for a buyer to examine the product before he or she receives it, sending the right product within the promised time frame leads to better buyer experience (Bauer *et al*., 2006), which relates to the positive evaluation of online transaction value. Thus:

H6: Fulfillment positively influences perceived online transaction value.

Seller service is the degree to which the seller is willing to professionally answer and solve buyers' requests or complaints in a timely manner. When a buyer has a question about the transaction, he or she usually contacts the seller first. Buyer expects that seller would put buyer's interest first and provide quick and effective help. Otherwise, the buyer may easily feel frustrated if seller's response is slow and unhelpful. Like the Web site service, good seller service enhances the shopping experience. Thus we expect that there is a positive relationship between seller service and buyers' perceived online transaction value.

H7: Seller service positively influences perceived online transaction value.

Previous studies have offered robust evidence to support a positive relationship between the perceived online transaction value and satisfaction (e.g., Grewal *et al*., 1998). That is, buyers are likely to generate positive feelings such as satisfaction and WOM when they successfully complete the shopping task. Consistent with previous studies, the following hypothesis is developed:

H8: Perceived online transaction value positively influences satisfaction.

Another purpose of the present study is to examine whether the above proposed relationships among quality components, perceived online transaction value, and satisfaction are different for buyers on eBay versus buyers on Amazon. Although buyers may be able to purchase about everything from either eBay or Amazon, these two leading e-commerce platforms as intermediaries do provide unlike experience to potential buyers. One of the most discernible divergences between eBay and Amazon is: When amateur sellers plan to sell unwanted items online occasionally, they are more likely to choose eBay over Amazon. More particular, eBay operates like a nationwide garage sale for many buyers (probably bargain hunters) who are looking for a great deal on the items that they need (Eaton, 2005). In contrast, Amazon is one of the largest online retail sites and most listed products from corporations and professional sellers are generally brand new.

It is meaningful to test the quality components on these two leading third-party e-commerce sites, and investigate the relationships of quality components and eBay and Amazon's performance respectively. Particularly, we want to understand whether each of the quality components has equal impacts on the shopping experience, and which quality dimension would have most explanatory power on the performance across these two leading online e-commerce

sites. Such comparative analysis across eBay and Amazon groups could possibly provide

additional insights and practical implications. Specifically, we propose that the pathways among

quality components of e-commerce platforms as intermediaries, perceived online transaction

value, and satisfaction could present different patterns because of the dissimilarity of sellers, the

products sold by sellers, and the type of buyers on these two online marketplaces. Thus, the

following hypothesis is formed:

      H9: The above proposed relationships among quality components, perceived online
transaction value, and satisfaction (H1-H8) could be different across eBay group versus Amazon
group.

Methodology

Data collection and sample

      Before collecting data, the authors conducted a series of pretests to validate measures.

Based on the feedback from those who participated in the pretests and the empirical results of

our preliminary data analysis, the authors modified the wording of a few items to better reflect

the constructs being studied. Data was gathered by means of an online survey administration tool

(www.qualtrics.com). We specified in the survey that respondents need to be 18-year old or

above, and have the shopping experience on the third-party e-commerce platforms such as EBay,

Amazon, Alibaba, etc. Several approaches were used to obtain the final sample. First, a

screening question was added by qualtrics.com: "To ensure you are reading questions carefully,

please choose 'strongly disagree' as your answer to this statement." Therefore, careless

respondents who did not correctly answer the question were deleted from the final data set.

Second, the authors examined the remaining sample and deleted those respondents with a

significant amount of missing, or nonsensical information. Third, respondents were deleted if

surveys were completed through a meaningless time frame (e.g., 2 minutes, over one day). As a result, 196 respondents were retained for the data analysis.

The sample comprised 91 males and 105 female participants. 51.28% held a university degree or above, 38.46% had received a high school diploma, and 10.26% had completed GED test. The majority of respondents were between 26 to 65 years old (88.56%), 6.66% of respondents were younger than 26 years old, and 4.78 % were older than 65.

Measurement

All constructs were measured using previously developed multi-item scales. All continuous items are 7-point Likert scales that were labeled as strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, and strongly agree. Table 1 presents means, standard deviations, and correlations derived from the whole sample. Table 2 lists measure scales for each construct. Each scale's reliability, measured by Cronbach's alpha, exceeded the threshold of 0.70, as recommend by Hair *et al*. (2010).

Insert Table 1 here

Insert Table 2 here

Two endogenous constructs are buyer satisfaction and perceived online transaction value. The perceived online transaction value construct was adapted from the Babin *et al*. (1994).More particular, five items capture buyers' perceived utilitarian value—accomplishing shopping tasks. In addition, we measured satisfaction based on four items from Ha and Janda (2008).

The seven exogenous constructs are efficiency, system availability, privacy, Web site service, fairness, seller service, and fulfillment. Among these seven exogenous constructs, five of them reflect the website quality of e-commerce platforms as intermediaries. The eight-item

efficiency refers to the extent to which Web site is well structured and simple to use (Parasuraman *et al*., 2005). The construct of system availability consists of four items which measure the correct technical functioning of the Web site (Parasuraman *et al*., 2005). The four-item privacy measure, adopted from (Wolfinbarger and Gilly, 2003), is used to assess the degree to which the Web site is safe and protects user information such as credit card payments and private contact information. The four-item Web site service measure is used to assess the responsive and helpful services provided by e-commerce platforms as they respond to buyers' requests (Wolfinbarger and Gilly, 2003). To capture buyers' perceived fairness in a service recovery context, a four-item measure, adopted from Collier and Bienstock (2006a), is used to measure if the solution buyer received meets the buyer's expectations.

Two constructs that assess seller quality are fulfillment and seller service. A four-item fulfillment scale was adapted from Wolfinbarger and Gilly's work (2003) to assess the degree to which the buyers receive what they ordered and the delivery of the right product is achieved within the promised time frame. In addition, a four-item measure for seller service was modified from Wolfinbarger and Gilly's (2003) work to capture how sellers are willing to address buyers' questions and requests.

Common Method Bias

We applied Harman's single factor test to examine the concern of common method bias (CMB). According to Podsakoff *et al*. (2003, p. 889), there could be a detrimental level of CMB if " (a) a single factor will emerge from exploratory factor analysis (unrotated) or (b) one general factor will account for the majority of the covariance among the measures." Based on the principal component analysis (without rotation), the results revealed that nine distinct factors explained the data variance in the current study (77.79%). In addition, the first factor didn't

explain much of the total variance (43%). There is evidence of no significant CMB presence in this study.

Analysis of measures

The objective of the measurement analysis is to verify that scales adopted appropriately represent the latent constructs before testing the proposed structural model. Nine latent constructs (buyer satisfaction, perceived online transaction value, efficiency, system availability, privacy, Web site service, fairness, seller service, and fulfillment) were assessed to confirm that the scales were unidimensional and reliable, and thus the conclusions of hypotheses tests could be supported by valid measurement. We used confirmatory factory analysis (CFA) to assess construct validity (Gerbing and Anderson, 1988). LISREL 8.80 (Jöreskog and Sörbom 1999) was applied in the data analysis in the current study.

An initial CFA including all items suggested that several items either had low factor loading estimates (λy) or presented high intercorrelations with other items, which led to the deletion of two items and yielded a final measurement model using 39 measured items (see Table 2). The resulting χ^2 fit statistic of nine constructs model was 1196.86 with 666 degrees of freedom (p < .01). The model comparative fit index (CFI) was .98, the root mean squared residual (RMSEA) was .064, and the parsimony normed fit index (PNFI) was .85. All factors were highly significant ($p < 0.05$) and the variance extracted estimates ranged from 0.58 to 0.70 (see Table 2). Construct reliability coefficients ranged from .82 to .92. Thus, the measurement model exhibited adequate convergent validity and fit.

Discriminant validity was assessed using conventional procedures (Fornell and Larcker 1981). Thirty-three of 36 squared correlation estimates were less than the variance extracted estimates for the respective constructs. In addition, constraining the measured variables from

both factors onto a single factor led to a worse model fit, suggesting that those constructs were

distinct. These results suggested acceptable discriminant validity among the constructs.

Therefore, given adequate model fit and construct validity, we concluded that the measurement

model adequately represented the theoretical constructs.

Results

As the analysis of the measurement model suggests a satisfactory fit, the structural

equation model representing the proposed theory can be satisfactorily tested. The structural

model provided a good overall fit to the data, χ^2 (673) = 1227.65, CFA = .98, RESEA = .065, and

PNFI = .86. However, the fit of the structural model was slightly above the fit of the

measurement model $\Delta \chi^2$ (7) = 30.79, $p <. 01$, suggesting that the structural model did not

completely explain the relationships among constructs.

Structural model. As indicated in Table 3, two of seven hypothesized paths (structural

coefficients) between the quality components and perceived online transaction value were

significant and in the predicted direction. One of five Web site quality dimensions displayed a

significant effect on perceived online transaction value. Particularly, system availability (γ = .30,

$p < .01$) showed significant and positive impacts on perceived online transaction value. In

contrast, efficiency (γ = .05, $p >.05$), privacy (γ = -.05, $p >.05$), Web site service (γ = .09, $p >.05$)

and fairness (γ = -.09, $p >.05$) did not display any significant effects on perceived online

transaction value. The results supported H1 but not for the H2 to H5. Next, fulfillment (γ = .62,

$p < .01$) but not seller service (γ = .11, $p < .01$) showed a positive effect on perceived online

transaction value. That is, one of the two seller quality dimensions was positively associated with

perceived online transaction value. Therefore, the results supported H6 but not H7. In addition,

the seven quality components explained 74% of the variance in perceived online transaction

value ($R^2 = 74\%$). The results also suggested that perceived online transaction value displayed a positive impact on satisfaction ($\beta = .82$, $p < .01$). Hence, H8 was supported.

In this study, we prefer the full mediation model (our proposed model, see Figure 1) over the partial mediation model (that the seven quality components were also indirectly associated with satisfaction) because of two reasons. First, a buyer is not likely to experience satisfaction unless he perceives an acceptable level of perceived online transaction value (e.g., accomplishing the shopping task). Thus, the perceived online transaction value should fully mediate the impacts of quality components on satisfaction. Second, we examined the SEM fit indexes across these two nested models and found no major difference between them. Thus, we conducted multiple group analysis using the full mediation model.

We fit the hypothesize path model to the covariance matrices of two groups: ebay (n_{ebay} = 70) and Amazon (n_{Amazon} = 85). We fit the model using robust maximum likelihood in Lisrel because this method performs well across various sample sizes and it accounts for the potential nonnormality of some variables. Initially, a multiple-group model was tested allowing each structural coefficient to be freely computed in each group. The results of the fully unconstrained model produced reasonably good fit statistics, χ^2 (1346) = 2255.58, CFI = .93, RESEA = .09, and PNFI = .79. Next, we proceeded to examine whether the hypothesized model was similar for eBay buyers versus Amazon buyers. Specifically, this analysis assessed whether the eight structural paths illustrated in Figure 1 differed across eBay and Amazon buyers. To accomplish this task, invariance constraints were added to these eight proposed structural parameter coefficients. The test of this full constrained model revealed that the model provided reasonably good fit statistics, χ^2 (1354) = 2272.41, CFI = .93, RESEA = .09, and PNFI = .79. In addition, the change in chi-square between the fully unconstrained and fully constrained models, $\Delta \chi^2$ (8) =

16.82, was significant at $p = .05$ level suggesting there were path differences across eBay and

Amazon groups. We also conducted a series of eight follow-up chi-square difference tests, in

which each path was constrained to equality, one at a time, between the groups. The results of

eight chi-square different tests found no significant differences when the differences of structural

coefficients were examined individually. Therefore, these results suggested mixed evidence

regarding the multiple-group analysis. Thus, H9 was partially supported.

The structural coefficients of the multiple-group model are presented in Table 3. First,

privacy ($\gamma = .37$, $p < .05$), Web site service ($\gamma = -.42$, $p < .05$), and fulfillment ($\gamma = .41$, $p < .05$)

affected perceived online transaction value in the eBay group. In addition, perceived online

transaction value ($\gamma = .80$, $p < .05$) was positively related to satisfaction in the eBay group. In the

Amazon group, only Web site service ($\gamma = .36$, $p < .05$) and fulfillment ($\gamma = .75$, $p < .05$) were

significantly associated with perceived online transaction value, and perceived online transaction

value ($\gamma = .82$, $p < .05$) was associated with satisfaction.

<div align="center">***Insert Table 3 here***</div>

Discussion and Conclusions

We argued that prior literature is not sufficient to provide insights to the performance

of e-commerce platforms as intermediaries. In this study, we develop a research framework that

examines the relationships among the quality of e-commerce platforms as intermediaries,

perceived online transaction value, and buyer satisfaction. This study further examines the

relationships among these constructs across two different e-commerce platforms, eBay and

Amazon. Our study has both theoretical and managerial implications.

Theoretical contributions

A large body of work has developed different conceptualizations of e-services quality and examined how the e-service quality was related to other important variables (Collier and Bienstock, 2006b; Parasuraman *et al*., 2005; Wolfinbarger and Gilly, 2003). Although these previous efforts have greatly extended the literature of e-services quality, the research about e-service quality of e-commerce platforms as intermediaries is just in its beginning stage. E-commerce platforms as intermediaries such as eBay and Amazon are different from sellers' own retailing sites such as Walmart.com and Target.com, as sellers, buyers, and the e-commerce platforms are all participants of the electronic transactions. When a transaction problem occurs, e-commerce platforms are likely to be involved to help solve the problem if the seller cannot successfully address the buyer concern. Buyers evaluate e-service quality of e-commerce platforms as intermediaries based on both the website quality and seller performance. Therefore, the findings of prior e-service quality studies may not be proper for explaining the characteristics of e-commerce platforms as intermediaries. One contribution of this study is that we integrate multiple measures of e-commerce transaction quality from different literature contexts, and empirically test them within a holistic model simultaneously to further the generalization of a comprehensive measurement of e-commerce transaction quality. Particularly, the study tries to fill the research gap of managing the e-commerce transaction quality in the third-party website context by calling for the attention to the transaction handling process expected of business owners who operate on the e-commerce portals, and propose that effectively managing e-commerce transaction should involve an emphasis on both functionality of the web site, and seller performance.

In this study, we studied seven quality components of e-commerce platforms as intermediaries in their relations to buyers' perceived online transaction value and satisfaction.

The results of the whole sample revealed system availability and fulfillment were the two important drivers of buyer perceived online transaction value. Although, the correlation analysis suggested all seven quality components were significantly associated with perceived online transaction value (see Table 1). The structural equation model analysis found that only system availability and fulfillment were the significant drivers of perceived online transaction value when the impacts of seven quality components were assessed simultaneously in a holistic structural model. This finding is encouraging because it suggests that e-commerce platforms managers should put priority on the Web site system availability among all quality components. A Web site achieving high rating about high system availability demonstrates the following characteristics: (1) it is always available for buyers and sellers to communicate with each other to complete a transaction, (2) it provides a reliable and accurate ordering system to facilitate the transaction, and (3) it responds to buyers' and sellers' requests quickly and effectively. Contrary to the results in the previous research (Yen and Liu, 2008), in our study other quality components of e-commerce platforms were not significantly associated with perceived online transaction value. It is possible that system availability plays a dominant role comparing to other quality dimensions when five quality components of e-commerce platforms as intermediaries were tested simultaneously.

The SEM analysis results further found that fulfillment was related to perceived online transaction value. This result is consistent with prior studies (Yen and Liu, 2008). The vast numbers of various parties engaging in the e-commerce generates a persistent problem for online e-commerce participants, which is online fraud. In other words, sellers either intentionally misrepresent the condition and quality of their products or sell the products that they have no intention of delivering (Bauerly, 2009; Gregg and Scott, 2006). For example, a 2007 *Buyer*

Reports Study suggested that almost half of eBay buyers experienced deceptions. Online buyers have special concerns because of the high percentages of online fraud rate on these e-commerce platforms. Our results highlight that the most important area that seller needs to pay attention to is fulfillment. Fulfillment is about whether the seller provides accurate descriptions of the product and delivers the right product in a timely manner. That is, making sure customers receive what they buy from sellers is the paramount task for the e-commerce platforms' managers.

Another contribution of this study is its examination of the equivalence of the hypothesized model across the eBay and Amazon groups. Amazon and eBay are two of the largest e-commerce platforms as intermediaries while they present different characteristics in terms of the products sold on the website and the types of online sellers and buyers. The results of multiple-group analysis revealed that several pathways were found to be different between eBay and Amazon groups. The structural model for the eBay data suggested three of seven quality components were related to perceived online transaction values. Specifically, privacy and fulfillment were positively related to perceived online transaction value. This finding suggests that the privacy protection features provided by the website are especially important for eBay buyers. The high fraud rate of eBay transactions suggests that eBay buyers are more likely to be involved in disputes, claims, and even legal appeals with sellers (Bauerly, 2009). Therefore, eBay buyers concern about not only the safety of buying an item (e.g., credit card information is secure) but also the post-resolution security (e.g., the seller cannot retaliate). In addition to the importance of privacy, fulfillment is also an important driver of shopping satisfaction for eBay buyers. The results further suggested that e-commerce platform service was negatively related to perceived online transaction value for the eBay group. This finding seems to be contradictory to the literature, which may be attributable to the reported high fraud rate of eBay transactions

(Bauerly, 2009). In other words, it could be a painful process for eBay buyers to get a fair solution, and eBay buyers generally tend to have negative feeling toward the website service. For example, before getting a fair solution, it is eBay buyers' responsibility to gather information and provide evidence that they are the victims. In addition, it may take weeks for waiting for eBay and Paypal's investigation and decision. Thus the malfunctioned website service of fighting deceptions may mean additional pain, and cost of time and energy for the eBay buyers.

For the Amazon group, the results of multiple-group analysis revealed that both system availability and fulfillment were positively related to perceived online transaction value. In other words, Amazon needs to provide an online marketplace that is to be available all the time, free of broken web links, and stable in terms of data transmission and order processing in order to satisfy Amazon buyers. In addition, fulfillment had a large and significant path coefficient for the Amazon buyers. This indicates that the experience of receiving an ordered product as agreed is the most important aspect of perceived e-service quality for Amazon buyers. Unlike eBay, many sellers on Amazon are corporate vendors and sell new condition products. Thus disagreements and conflicts are less likely to occur between Amazon's sellers and buyers since the exchanged products are new. It is also possible that business sellers know more about how to respond to buyers' requests than individual sellers. Therefore, the website service and fairness are not the major concerns for Amazon buyers. The path coefficient for perceived online transaction value – satisfaction was significant for both eBay and Amazon group. This finding is consistent with prior literature.

Managerial Implications

For managerial purposes, the study results provide managers of e-commerce platforms as intermediaries and online sellers with directions to benchmark and improve the e-service

quality. This study suggests that both performances of e-commerce platforms and sellers are influential in the evaluations of shopping experience. Several managerial implications can be drawn from this study.

Overall, our findings suggest that fulfillment is possible the most important quality component of e-commerce platform as intermediaries. Shopping online means more risks than shopping in the traditional brick-and-mortar setting because deception is a persistent problem for online transactions. Thus, sellers on the e-commerce platforms as immediate should strive to deliver the product to buyers following the promised time frame and the described condition. To facilitate better shopping experience, e-commerce sellers can work on the different aspects of a successful fulfillment performance that include delivery of the product, timeliness of the order, accuracy of the order, and the condition of the order (Collier and Bienstock, 2006ab). To achieve these goals, sellers should excel buyers' expectations by (1) using a trusted company to deliver products to the buyer preferred address; (2) delivering products on or even before the promised date; (3) delivering the right product the buyer ordered, and (4) the condition of received product should match the description posted by the vender (Collier and Bienstock, 2006ab). All of these aspects influence buyers' perceived transaction value which further relates to satisfaction.

From the e-commerce platform's perspective, both the whole sample and the Amazon group suggest that system availability is important to buyers' perceived transaction value. Buyers expect a robust and stable system and have a low tolerance for any website flaws. In other words, a reliable system is a basic attribute of e-commerce platforms for attracting and maintaining an online shopping base. Therefore, the e-commerce platforms should make sure that the website's applications and links must be working properly 24/7. This study's findings also provide important insights to how eBay might work to improve its performance. As our comparative

analysis suggests, the eBay group are generally disappointed with and tend to have negative feeling toward the website service, which leads to lower perceived transaction value. As such, to improve their business model to better serve customers, eBay needs to work on the website functionality. For example, the dispute process of fighting against online fraud for eBay buyers is typically time-consuming and costly; thus a more effective and efficient procedure of solving transaction conflicts is needed. Our findings also suggest that eBay users concern about the privacy issue, since it is relatively easy for individuals to open and close an eBay account, which relates to a high likelihood of online deceptions on eBay. Therefore, a safe online marketplace which protects users' privacy information is a must requirement for eBay users. In order to achieve this goal, eBay should build a legal and safe system to protect users' private information from outside threats such as criminals and other unauthorized parties.

Limitation and Future Research

While previous studies have developed different scales to define e-service quality and examine various relationships, these efforts of developing a universal e-service quality scale might not be sufficient to address buyers' quality perception of e-commerce platforms as intermediaries. More research about e-commerce platforms as intermediaries is needed to further identify and justify the e-service quality components from both the website and seller perspectives. In addition, future research should explore the impacts of these quality components on other important outcome variables such as buyers' perceived utilitarian value and hedonic value of e-commerce transactions, WOM (word of mouth), and buyer loyalty.

Another research opportunity is to test whether the impacts of e-service quality components of e-commerce platforms as intermediaries on buyer perceived online transaction value and satisfaction will be moderated by other relevant variables. For example, buyers'

expertise of online shopping may moderate the relationships between quality components and buyer perceived transaction value and satisfaction. In addition, involvement, attitude, and individual characteristics could be other interesting moderators for future studies. By integrating these moderators into the research framework, future study can enhance our understanding about the impacts of e-service quality components on outcome variables across different buyer groups.

Future studies may also examine e-service quality in relations to seller performance. For example, whether sellers and buyers perceive the concept of e-service quality similarly; what motivate sellers to provide excellent shopping experience to buyers? etc.

The exponential growth of online shopping suggests that e-service quality of online markets will continue to be a promising research area for academic researchers and e-commerce practitioners. This study represents some of the early works in this direction; it is of great importance and significance to continue with this research topic in the future.

Reference

Bauer, H.H., Falk, T. and Hammerschmidt, M. (2006), "eTransQual: a transaction process-based approach for capturing service quality in online shopping", *Journal of Business Research*, Vol. 59 No. 7, pp. 866-875.

Bauerly, R.J. (2009), "Online auction fraud and eBay", *Marketing Management Journal*, Vol. 19 No. 1, pp. 134-144.

Babin, B.J., Darden, W.R. and Griffin, M. (1994), "Work and/or fun: measuring hedonic and utilitarian perceived online transaction value", *Journal of Consumer Research*, Vol. 20 No. 4, pp. 644-656.

Collier, J.E. and Bienstock, C.C. (2006a), "Measuring service quality in e-retailing", *Journal of Service Research*, Vol. 8 No. 3, pp. 260-275.

Collier, J.E. and Bienstock, C.C. (2006b), "How do customers judge quality in an e-tailer?" *Sloan Management Review*, Vol. 48 No. 1, pp. 35-40.

Connolly, R., Bannister, F., and Kearney, A. (2010), "Government website service quality: a study of the Irish revenue online service", *European Journal of Information Systems*, Vol.19, pp.649-667.

Eaton, D.H. (2005), "Valuing information: Evidence from guitar auctions on eBay", Journal of Applied Economics & Policy, Vol.24 No.1, pp. 1-19.

Elliott, M.T. and Speck, P.S. (2005), "Factors that affect attitude toward a retail website", *Journal of Marketing Theory and Practice*, Vol. 13 No. 1, pp. 40-51.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Gavish, B. and Tucci, C.L. (2006), "Fraudulent auctions on the internet", *Electronic Commerce Research*, Vol. 6 No. 2, pp. 127-140.

Gregg, D.G. and Scott, J. (2006), "The role of reputation systems in reducing online auction fraud", *International Journal of Electronic Commerce*, Vol. 10 No. 3, pp. 97-122.

Grewal, D., Monroe, K.B. and Krishnan, R. (1998), "The effects of price-comparison advertising on buyers' perceptions of acquisition value, transaction value, and behavioral intentions", *Journal of Marketing*, Vol. 62 No. 2, pp. 46-59.

Gerbing, D.W. and Anderson, J.C. (1988), "An updated paradigm for scale development incorporating unidimensionality and its assessment", *Journal of Marketing Research*, Vol. 25 No. 2, pp. 186-192.

Gefen, D. and Pavlou, P.A. (2012), "The boundaries of trust and risk: The quadratic moderating role of institutional structures", *Information Systems Research*, Vol. 23, pp. 940-959.

Hair, J.F. Jr., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis*, 7th ed., Prentice Hall, Upper Saddle River, NJ.

Ha, H.Y. and Janda S. (2008), "An empirical test of a proposed customer satisfaction model in e-services", *Journal of Services Marketing*, Vol. 22 No. 5, pp. 399-408.

Hong, Y. and Pavlou, P.A. (2014), "Product Fit Uncertainty in Online Markets: Nature, Effects, and Antecedents", *Information Systems Research*, Vol.25 No.2, pp. 328-344

Jöreskog, K.G. and Sörbom, D. (1999). *LISREL 8: user's reference guide*. Scientific Software International, Inc. Lincolnwood, IL.

Liu, C.T., Guo, Y.M. and Hsieh, T.Y. (2010), "Measuring user perceived service quality of online auction sites", *The Service Industries Journal*, Vol. 30 No. 7, pp. 1177-1197.

Loiacono, E.T., Watson, R.T. and Goodhue, D.L. (2002). "WEBQUAL: a measure of website quality", in Evans, K. and Scheer L. (Eds.), *2002 AMA winter educators' conference: marketing theory and applications*,Vol. 13, pp. 432-437.

Madu, C.N. and Madu, A.A. (2002), "Dimensions of e-quality", *The International Journal of Quality and Reliability Management*, Vol. 19 No. 3, pp. 246-258.

Mangalindan, M. (2007), "eBay makes a bid to lure lapsed buyers", *Wall Street Journal*, October 12, B1, B2.

Palmer, J.W. (2002), "Website usability, design, and performance metrics", *Information Systems Research*, Vol. 13 No. 2, pp. 151-167.

Pavlou, P.A. and Gefen, D. (2004), "Building effective online marketplaces with institution-based trust", *Information Systems Research*, Vol. 15 No. 1, pp. 37-59.

Qu, C.X., Pavlou, P.A., and Davison, R. (2014), "Swift guanxi in online marketplaces: The role of computer-mediated communication technologies", *MIS quarterly,* Vol. 38 No.1, pp. 209-230.

Parasuraman, A., Zeithaml, V.A. and Malhotra, A. (2005), "E-S-Qual: a multiple-item scale for assessing electronic service quality", *Journal of Service Research*, Vol. 7 No. 3, pp. 212-233.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Rosen, D.E. and Purinton, E. (2004), "Website design: viewing the web as a cognitive landscape", *Journal of Business Research*, Vol. 57 No. 7, pp. 787-794.

Song, J. and Zahedi, F. (2002), "A theoretical framework for the use of Web infomediaries", in *AMCIS 2002 Proceedings* in Dallas, USA, 2002, pp. 2250-2256.

Tax, S.S. and Brown, S.W. (1998a), "Recovering and learning from service failure", *Sloan Management Review*, Vol. 40 No. 1, pp.75-89.

Tax, S.S., Brown, S.W. and Chandrashekaran, M. (1998b), "Customer evaluations of service complaint experiences: implications for relationship marketing", *Journal of Marketing*, Vol. 62 No. 2, pp. 60-76.

Viio, P., & Grönroos, C. (2015). How buyer–seller relationship orientation affects adaptation of sales processes to the buying process. *Industrial Marketing Management.*, 10.1016/j.indmarman.2015.07.013

Wolfinbarger, M. and Gilly, M.C. (2003), "eTailQ: dimensionalizing, measuring and predicting etail quality", *Journal of Retailing*, Vol. 79 No. 3, pp. 183-198.

Yen, C.H. and Lu, H.P. (2008), "Effects of e-service quality on loyalty intention: an empirical study in online auction", *Managing Service Quality*, Vol. 18 No. 2, pp. 127-146.

Yoo, B. and Donthu, N. (2001), "Developing a scale to measure the perceived quality of an internet shopping site (SITEQUAL)", *Quarterly Journal of Electronic Commerce*, Vol. 2 No. 1, pp. 31-46.

Zhang, J. (2006), "The roles of players and reputation: evidence from eBay online auctions", *Decision Support Systems*, Vol. 42 No. 3, pp. 1800-1818.

Managing E-commerce Platform Quality and its Performance Implication: A Multiple-Group
Structural Model Comparison

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Table 1 Means, Standard Deviations and Correlations for Whole Sample

Variable	M	SD	1	2	3	4	5	6	7	8	9
1	5.88	1.05	—								
2	5.79	1.06	.80	—							
3	5.98	0.95	.65	.58	—						
4	6.02	1.08	.53	.57	.80	—					
5	5.65	0.96	.52	.56	.61	.42	—				
6	5.26	1.15	.42	.48	.50	.31	.86	—			
7	5.07	1.23	.40	.52	.48	.31	.77	.87	—		
8	5.19	1.11	.50	.58	.40	.24	.68	.76	.75	—	
9	5.88	1.10	.64	.80	.50	.39	.61	.50	.59	67	—

Note:
1. N=196
2. All correlations are significant at 0.05 level.
3. 1= Satisfaction, 2= Perceived online transaction value, 3= Efficiency, 4= System availability, 5= Privacy, 6= Web site service, 7= Fairness, 8= Seller service, 9= Fulfillment

Table 2. Scale Items and Measurement Properties

	Lambda[a]	CR[b]	VE[c]
Satisfaction			
1. I felt satisfied with this online shopping experience	.92		
2. My overall experience with this online shopping experience was satisfied	.90		
3. In general, I was very satisfied with what I got from this experience	.89	.90	.70
4. The level of satisfaction with this shopping experience was not high[d]	.59		
Perceived online transaction value			
1. I accomplished just what I wanted to by going through this experience	.89		
2. During the experience, I got just what I was looking for	.87		
3. I felt disappointed because the outcome of this experience was not success[d]	.68		
4. I was unable to get all I wanted from this experience[d,e]	---	.88	.64
5. The time spent was worthwhile because I finished the job I started	.75		
Efficiency			
1. The Website made it difficult to find what I need	.61		
2. The Website made it easy to get anywhere on the site	.85		
3. The Website enabled me to complete a transaction quickly	.74		
4. Information at the Website was well organized	.86	.92	.61
5. The Website loaded its page fast	.84		
6. The Website was simple to use	.83		
7. The Website enabled me to get on to it quickly	.80		
8. The Website was not well organized[d]	.67		
System availability			
1.The Website was not always available for shopping[e]	---		
2. The Website launched and run right away	.86	.82	.61
3. The Website did not crash	.76		
4. The Website did not freeze after I entered my order information	.71		
Privacy			
1. I feel like my privacy is protected at the Website	.85		
2. I feel safe in my transaction with the Website	.83	.87	.62
3. The Website have adequate security features	.86		
4. The Website does not protect information about my online shopping activities[d]	.58		
Web site service			
1. The Website is willing and ready to respond to my needs	.88		

2. When I have a question regarding the transaction, the Website shows a sincere interest in helping it	.87	.89	.67
3.The Website answers my inquires promptly	.84		
4. It is difficult to connect to the help center of the Website when I need a help[d]	.68		
Fairness			
1. With the help from the Website, the seller offered compensation for the problem	.74		
2. The outcome I would receive would be fair	.82	.89	.67
3. In resolving my complaint, the Website would give me what I need	.89		
4. I would get what I deserved	.81		
Fulfillment			
1.The product/service that I received was represented accurately by seller's description	.92		
2. I got what I bought from the seller	.85	.89	.67
3. The product/service was delivered by seller's promise	.72		
4. The seller was trustful about its offerings	.77		
Seller service			
1. The seller was willing and ready to respond to my needs	.81		
2. When I had a problem, the seller showed a sincere interest in solving it	.85	.85	.58
3. Inquires to the seller were answered promptly	.76		
4. It was difficult to get help from the seller[d]	.61		

Notes:

[a] The numbers are CFA loading estimate of items on the corresponding constructs.

[b] Construct reliability

[c] Variance extracted

[d] Reverse coded

[e] item dropped when factor loading is less than .5 (Hair et al. 2010)

Table 3. Path Estimates from Whole Sample Model and Multiple –Group Model

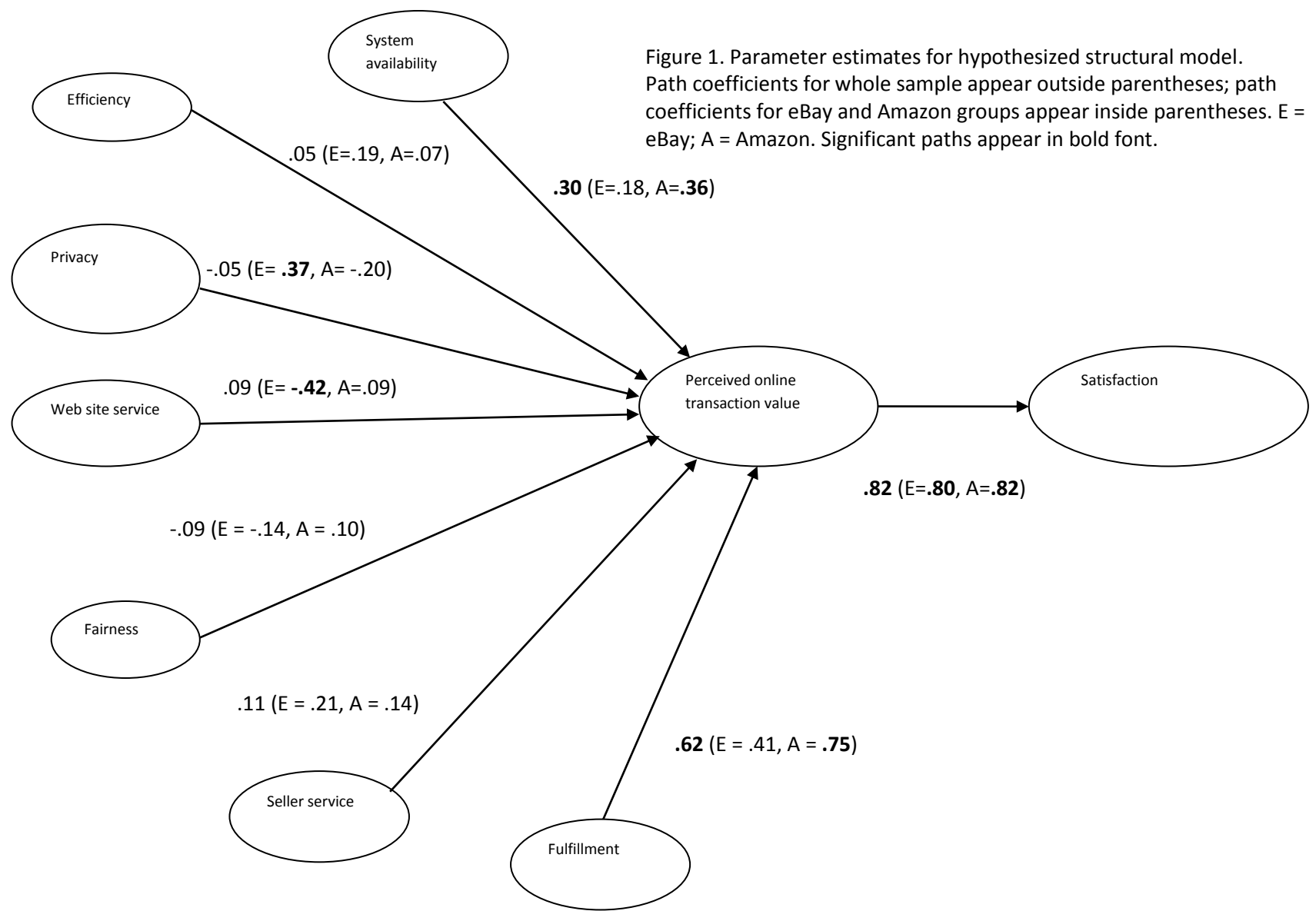|	Whole Sample	Multiple-Groups	
		eBay	Amazon
Criterion and predictor			
Shopping value			
Efficiency	.05	.19	.07
System availability	.30*	.18	.36*
Privacy	-.05	.37*	-.20
Web site service	.09	-.42*	.09
Fairness	-.09	-.14	.10
Fulfillment	.62*	.41*	.75*
Seller service	.11	.21	.14
Satisfaction			
Shopping value	.82*	.80*	.82*

*$p<0.05$

Figure 1. Parameter estimates for hypothesized structural model. Path coefficients for whole sample appear outside parentheses; path coefficients for eBay and Amazon groups appear inside parentheses. E = eBay; A = Amazon. Significant paths appear in bold font.