The factors driving online shopping in Saudi Arabia: Regional and behavioral differences among women

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Abstract

This study proposes a revised technology acceptance model that integrates expectation confirmation theory to measure regional differences with regard to continuance online shopping intentions in Saudi Arabia. The sample consists of 650 female respondents. A structural equation model confirms model fit. Perceived usefulness, enjoyment, and subjective norms are determinants of online shopping continuance in Saudi Arabia. Women in the eastern, western, and central region groups are equivalent. The structural weights are also largely equivalent, but the regression path from perceived usefulness to enjoyment is not invariant between female shoppers in the eastern and western regions or in the eastern and central regions. This research moves beyond online shopping intentions and includes factors affecting online shopping continuance. The research model explains 60% of the intention to continue shopping online. Furthermore, this research suggests that online strategies cannot ignore the influence of either direct or indirect regional differences on continuance intentions; the model can be generalized across Saudi Arabia.

Keywords: internet shopping; e-shopping; technology acceptance; male and female examination; continuance online shopping; Saudi Arabia,

Introduction

Globalization continues to drive the rapid growth of international trade, global corporations, and non-local consumption alternatives (Alden, Steenkamp, & Batra, 2006; Holt, Quelch, & Taylor, 2004), and advances in Internet technology and e-commerce have diminished trade boundaries. E-commerce and e-shopping create opportunities for businesses to reach consumers globally and directly, and in turn, business and social science research focuses specifically on cross-national and cross-cultural Internet marketing (Griffith, Myers, & Harvey, 2006).

The Internet thus has changed how businesses and customers customize, distribute, and consume products. Its low cost gives both businesses and consumers a new and powerful channel for information and communication. In 1991, the Internet attracted fewer than 3 million users worldwide and hosted no e-commerce applications; by 1999, about 250 million users appeared online, and 63 million engaged in online transactions, for a total value of $110 billion (Coppel, 2000). Business-to-consumer online sales in the United States grew by 120% between 1998 and 1999 (Shop.org and Boston Consulting Group, 2000). According to a U.K. payment association, the number of consumers who shop online has increased by more than 157%, from 11 million in 2001 to more than 28 million in 2006 (cited in Alsajjan & Dennis, 2009). E-commerce transactions also are growing in the Middle East (19.5 million Internet users) and in the Gulf States. In Saudi Arabia, online transactions have increased by 100%, from $278 million in 2002 to $556 million in 2005 (*Al Riyadh,* 2006). In 2007, Internet sales reached more than $1.2 billion worldwide and are expected to continue to rise (World Internet Users and Population Stats, 2007).

An unpublished study by the Centre for Customer Driven Quality also highlights potential savings online: For one retailer, the cost of an in-store customer contact was estimated to be $10, the cost of a phone contact $5, and the cost of a Web contact $0.01 (Feinberg, Kadam, Hokama, & Kim, 2002). According to the International Air Transport Association (IATA), airlines issue approximately 300 million paper tickets per year, at a cost of $10 per ticket to process, whereas an e-ticket costs the airlines only about $1 to create (Arab News Newspaper, 2007).

Yet despite impressive online purchasing rates, compelling evidence indicates that many consumers search different online retail sites and then abandon their purposes. This trend and the proliferation of business-to-consumer e-shopping require that online businesses understand which factors encourage consumers to complete their e-shopping with a purchase. Such continuance is critical, because acquiring new customers may cost as much as five times as much as retaining existing ones (Bhattacherjee, 2001b; Crego & Schiffrin, 1995; Petrissans, 1999). At the same time, online customer retention can be particularly difficult. Modern customers demand that their needs be met immediately, perfectly, and for free, and they are empowered with more information to make decisions (Bhattacherjee, 2001b; Crego & Schiffrin, 1995). They also have various online and offline options from which to choose, and without a compelling reason to choose one retailer over another, they experiment or rotate purchases among multiple firms (Bhattacherjee, 2001b; Crego & Schiffrin, 1995).

To use e-business cost reductions strategically and increase switching costs to retain customers, e-retailers might recall the customer, which can reduce the effort associated with future transactions, or learn more about the customer to tailor future interactions to the customer's needs (Straub & Watson, 2001). Better product quality, lower prices, better services,

and outcome value provide the means to serve customers effectively and efficiently, which should help build sustainable relationships.

Online shopping intentions depend on several factors. Rogers (1995) suggests that consumers reevaluate acceptance decisions during a final confirmation stage and decide to continue or discontinue. Continuance may be an extension of acceptance behavior that covaries with acceptance (e.g., Bhattercherjee, 2001a; Davis, Bagozzi, & Warshaw, 1989; Karahanna, Straub, & Chervany, 1999). We adopt extended expectation confirmation theory (ECT; Bhattacherjee, 2001b) from consumer behavior literature and the technology acceptance model (TAM; Davis et al., 1989) as our theoretical basis to propose a model of e-shopping continuance intentions, similar to the TAM's adaptation of the theory of reasoned action (TRA) from social psychology to postulate a model of technology acceptance.

The TAM, as outlined by Davis et al. (1992) and Gefen, Karahanna, and Straub (2003), and the ECT (Bhattacherjee, 2001a; Oliver, 1980) appear frequently in research into industrialized contexts, but they are less commonly applied to developing countries. Moreover, the TAM stops at intention and does not investigate continuance intentions or behavior.

As another issue in prior research, no widely acceptable definition for e-commerce exists. Coppel (2000) calls it doing business over the Internet, including both business-to-business and business-to-consumer markets. For the purpose of this research, we adopt the following definition: E-shopping, electronic shopping, online shopping, and Internet shopping are the same. All these activities include the activity of searching for, buying, and selling products and services through the Internet. In recent years, the Internet has grown to include a wider range of potential commercial activities and information exchanges, such as the transaction and exchange of information between government agencies, governments and businesses, businesses and

consumers, and among consumers. We focus mainly on the business-to-consumer (B2C) arena, which has been the source of most online progress and development.

Saudi Arabia is a huge and expanding country, with a population of 24,069,943, 60% of whom are younger than 30 years, and almost equally split by gender (51% male and 49% female; The Middle East Statistics, 2007). Regional influences may be significant for Internet shopping; for example, a country's age profile might affect acceptance levels or acceptance continuance with regard to e-shopping intentions. Young women in Saudi Arabia likely posses more self-determination than older women, so the younger age profile of this country may increase the influence of Internet shopping behavior by young women.

Previous research finds that gender differences significantly affect new technology decision-making processes (Venkatesh, Morris, & Ackerman, 2000; Van Slyke, Comunale, & Belanger, 2002). Venkatesh et al. (2000) report that women tend to accept information technology when others have high opinions of it and also are more influenced by ease of use. Men rely more on their evaluations of the usefulness of the technology. However, in many cultures, women represent the primary decision makers in families and households' main shoppers. Greater e-commerce exposure and decision-making power may imply that women can attain greater satisfaction from online shopping (Alreck & Settle, 2002).

Finally, no previous research considers Internet shopping in Saudi Arabia or, specifically, continuance intentions for online shopping in Saudi Arabia, nor do studies address differences in regional shopping behavior online in Saudi Arabia. This research attempts to provide a validated conceptual model that integrates different factors, among several regions, and clarifies the theoretical problems of continuance intentions in the unique context of Saudi Arabia.

The remainder of this article proceeds as follows: We offer a review of existing literature, and then detail our proposed model, hypotheses, and methodology. After describing the structural equation model and analysis, we provide our results. We conclude with some limitations and recommendations for further research.

Theoretical Background

The TAM (Davis, 1989) represents an adaptation of the TRA, tailored to users' acceptance of information systems. It helps explain determinants of computer acceptance and can explicate user behaviors across a broad range of computing technologies and populations; it also is parsimonious and theoretically justified (Davis et al., 1989). The major determinants are perceived usefulness and ease of use. Perceived usefulness significantly influences attitude formation (Agarwal & Prasad, 1999; Davis, 1989; Dishaw & Strong, 1999; Gefen & Keil, 1998; Igbaria, Parasuraman, & Baroudi, 1996; Moon & Kim, 2001; Taylor & Todd, 1995; Venkatesh, 2000; Venkatesh & Davis, 2000), but evidence regarding perceived ease of use remains inconsistent. Many studies simplify the original TAM by dropping attitude and studying just the effect of perceived usefulness and ease of use on intention to use (Gefen & Straub, 2000; Leader, Maupin, Sena, & Zhuange, 2000; Teo, Lim, & Lai, 1999).

Updates to the TAM add antecedents of perceived usefulness and ease of use (Venkatesh & Davis, 2000), such as subjective norms, experience, trust, and output quality. Ample evidence confirms that both usefulness (i.e., external motivation) and intrinsic enjoyment (i.e., internal motivation) offer direct determinants of user acceptance online (Davis, Bagozzi, & Warshaw, 1992; Leader et al., 2000; Moon & Kim, 2001; Teo et al., 1999; Venkatesh, 1999).

Expectation confirmation theory in turn helps predict consumer behavior before, during, and after a purchase in various contexts, in terms of both product and service repurchases (Anderson & Sullivan, 1993; Dabholkar, Shepard, & Thorpe, 2000; Oliver, 1980, 1993; Patterson, Johnson, & Spreng, 1997; Spreng, MacKenzie, & Olshavsky, 1996; Swan & Trawick, 1981; Tse & Wilton, 1988). According to ECT, consumers define their repurchase intentions by determining whether the product or service meets their initial expectations. Their comparison of perceived usefulness with their original expectation of usefulness influences their continuance intentions (Bhattacherjee, 2001a; Oliver, 1980). Their repurchase intentions depend on their satisfaction with the product or service (Anderson & Sullivan 1993; Oliver 1980).

However, ECT ignores potential changes in initial expectations after the consumption experience and the effect of these expectation changes on subsequent cognitive processes (Bhattacherjee, 2001a). Prepurchase expectations typically are based on others' opinions or information from mass media, whereas postpurchase expectations derive from first-hand experience, which appears more realistic (Fazio & Zanna, 1981). After such first-hand experience, expectations may increase if consumers believe the product or service is useful or contains new benefits and features that were not part their initial expectation.

Venkatesh, Morris, Davis, & Davis (2003) suggest that usage and intentions to continue usage may depend on cognitive beliefs about perceived usefulness. Gefen et al. (2003) also indicate that perceived usefulness reinforces an online shopper's intention to continue using a Web site, such that when a person accepts a new information system, he or she is more willing to alter practices and expend time and effort to use it (Succi & Walter, 1999). However, consumers may continue using an e-commerce service if they consider it useful, even if they are dissatisfied with its prior use (Bhattacherjee, 2001a).

Site quality and good interface design enhance the formation of consumer trust, and if a consumer perceives a vendor's Web site to be of high quality, he or she should trust that vendor's competence, integrity, and benevolence (McKnight, Choudhury, & Kacmar, 2002a). Gefen et al. (2003) integrate trust into the TAM in a B2C e-shopping context and find trust positively affects consumers' intention to use a Web site. Building trust with consumers is an essential mission for e-retailers, because purchasing decisions represent trust-related behaviors (Jarvenpaa, Tractinsky, & Vitale, 2000; McKnight, Choudhury, & Kacmar, 2002b; Urban, Sultan, & Qualls, 2000). A person's beliefs about what important others think about the behavior also should directly influence subjective norms. Therefore, if e-shopping is a socially desirable behavior, a person is more likely to e-shop (George, 2002).

Childers, Carr, Peck, and Carson (2001) also find that enjoyment can predict attitude toward e-shopping, just as much as usefulness can. However, usefulness offers a better predictor for grocery items, whereas enjoyment provides better results for hedonic purchases. With regard to e-shopping, the hedonic enjoyment constructs in the TAM may reflect the pleasure that users obtain from shopping online, which reinforces their continuance intentions.

Proposed Model and Hypotheses

Site Quality

Initial trust forms quickly on the basis of available information (Meyerson, Weick, & Kramer, 1996). If consumers perceive a Web site has high quality, they trust it and will depend on that vendor (McKnight et al., 2002a). Site information quality and a good interface design enhance consumer trust (Fung & Lee, 1999). Web site quality helps predict behavior (Business Wire, 1999; Carl, 1995; Meltzer, 1999). Perceptions of Web site quality affect trust and perceptions of

usefulness. In addition, e-shoppers should perceive a Web site as more trustworthy if it appears more attractive because of its contents, layout, and colors, which represent site quality. On the basis of previous research, we therefore predict:

H1a Perceived site quality relates positively to perceived usefulness.

H1b. Perceived site quality relates positively to customer trust to use online shopping.

Trust

Trust refers to an expectation that others will not behave opportunistically (Gefen et al., 2003). Trust therefore implies a belief that the vendor will provide what has been promised (Ganesan, 1994). In turn, perceived usefulness should occur only for an e-vendor that can be trusted (Festinger, 1975). Thus:

H2. Perceived trust relates positively to perceived usefulness.

Perceived Usefulness

According to Burke (1997), perceived usefulness is a primary prerequisite for mass market technology acceptance, which depends on consumers' expectations about how technology can improve and simplify their lives (Peterson, Balasubramanian, & Bronnenberg, 1997). A Web site is useful if it delivers services to a customer but not if the customers' delivery expectations are not met (Barnes & Vidgen, 2000). The usefulness and accuracy of the site also influence customer attitudes. Users may continue using an e-commerce service if they consider it useful, even if they may be dissatisfied with their prior use (Bhattacherjee, 2001a). Consumers likely evaluate and consider product-related information prior to purchase, and perceived usefulness thus may be more important than the hedonic aspect of the shopping experience (Babin, Darden,

& Griffen, 1994). In a robust TAM, perceived usefulness predicts IT use and intention to use (e.g., Adams, Nelson, & Todd, 1992; Agarwal & Prasad, 1999; Gefen & Keil, 1998; Gefen & Straub, 1997; Hendrickson, Massey, & Cronan, 1993; Igabria, Livari, & Maragah, 1995; Subramanian, 1994), including e-commerce adoption (Gefen & Straub, 2000). Therefore:

H3a. Perceived usefulness relates positively to increasing customer subjective norms.

H3b. Perceived usefulness relates positively to increasing customer enjoyment.

H3c. Perceived usefulness relates positively to increasing customer continuance intentions.

Subjective Norms

According to Venkatesh et al. (2003), social influences result from subject norms, which relate to individual consumers' perceptions of the beliefs of other consumers. Shim, Eastlick, Lotz, and Warrington (2001) consider subjective norms only marginally significant for e-shopping intentions, whereas Foucault and Scheufele (2005) confirm a significant link between talking about e-shopping with friends and intention to e-shop. Enjoyment also is relevant to social norms, because involving Web sites facilitate e-friendship and enforce e-shopping as a subjective norm. Thus,

H4a. Perceived subjective norms relate positively to increasing customer enjoyment.

H4b. Perceived subjective norms relate positively to increasing customer continuance intentions.

Enjoyment

Enjoyment in using a Web site significantly affects intentions to use (Davis et al., 1992; Igbaria et al., 1995; Teo et al., 1999; Venkatesh, Speier, & Morris, 2002). Shopping enjoyment (Koufaris, 2002), perceived entertainment value of the Web site (O'Keefe, O'Connor, & Kung, 1998), and perceived visual attractiveness have positive impacts on perceived enjoyment and continuance intentions (van der Heijden, 2003). Thus:

H5. Perceived enjoyment relates positively to increasing customer continuance intention.

Methodology

To validate the conceptual model and the proposed research hypotheses, we developed an online survey, suitable for collecting data from large geographical areas. In addition, compared with traditional surveys, online surveys offer lower costs, faster responses, and less data entry effort.

Measures

The measures of the various constructs come from previous literature, adapted to the context of online shopping if necessary. All online survey items use 1–7 Likert scales, on which 1 indicates strongly disagree and 7 is strongly agree. The site quality and trust items come from McKnight et al. (2002a, 2002b). The perceived usefulness items derive from Gefen et al. (2003). Perceived enjoyment is a measure from Childers et al. (2001). Shih and Fang (2004) provide the subjective norm items. The continuance intention items were adapted from Yang and Peterson (2004).

A pilot study was carried out to evaluate the effectiveness of the research instrument. The pilot study suggested some clarifications to the survey instruments. Both Arabic and English language versions were available. The Arabic questionnaire employed Brislin's (1986) back-translation method to ensure that the questionnaires have the same meaning in both languages.

Data analysis

Survey respondents were people who actively engaged in Internet and online shopping in Saudi Arabia, including undergraduate and postgraduate students and professionals. As we show in Table 1, the sample consists of 650 female participants. This somewhat surprising proportion illustrates the high rate of Internet usage among women in Saudi Arabia. Most respondents are in their late 30s (2.5% younger than 18 years of age, 26.6% between 18 and 25, 42.8% are 26–35, 22% are 36–45, and 6.2% are older than 46 years). Similarly, 60% of the Saudi population is younger than 30 years of age. The vast majority (92.6%) of participants came from the three main regions in Saudi Arabia: 24.6% from the east, 27.8% from the central region, and 40.2% from the western region. The education levels indicate 1.5% of respondents earned less than a high school degree, 10.9% attended high school, 12.9% had diplomas, 52.9% had bachelor degrees, and 21.7% were postgraduates. Most respondents thus are well-educated. Moreover, 36% of them work in the public sector (government employees), 35.4% in the private sector, 6.5% were businesspeople, and 22.22% were students.

As we show in Table 2, 52.2% of the respondents had visited at least five different online shopping sites for the purpose of purchasing, and 66.9% had used the Internet for actual shopping. The western region reveals the highest percentages. In addition, 31.1% of respondents spend £100–£500 per year and 51.3% spend more than £501 per year online. Almost half (49.7%) of the respondents used the Internet in the previous six months to book flights and purchase airline tickets, 37.5% to make hotel reservations, 35.2% to purchase clothing, 58.6% for books, and 37.8% to buy CD-DVD and videotapes. In their responses about why they used the Internet, 82% indicated they used it for information searches, 56.8% for social communication, 52.5% for banking, 64.8% for entertainment, 51% for work-related tasks, and

69% for study-related efforts. Female participants from the western region scored the highest in most of the categories, as we show in Table 3.

[Take in Table 1]

[Take in Table 2]

[Take in Table 3]

Analysis

The Cronbach's alphas (Table 4) are all greater than 0.7 (Bagozzi & Yi, 1988). The squared multiple correlation cut-off point is 0.7, and the average variance extracted cut off-point is 0.5 (Bagozzi, 1994; Byrne, 2001; Hair, Black, Babin, Anderson, & Tatham, 2006) (Table 5). We thus confirm convergent reliability and discriminant validity.

[Take in Table 4]

[Take in Table 5]

Structural Equation Model

As the first step to test the proposed model, in which we operationalize the hypotheses and the factors involved in continuance intentions toward e-shopping in Saudi Arabia, we estimate the goodness-of-fit indices (Figure 1). Bentler and Bonnett (1980) suggest the chi-square/degrees-of-freedom (CMIN/DF) ratio as an appropriate measure of model fit, which should not exceed 5 (Bentler, 1989).

A structural equation model (SEM) with AMOS 5.0 software determines additional goodness-of-fit indices, including the critical ratio (CR), chi-square (CMIN), degrees of freedom (df), CMIN/DF, root mean square residual (RMR), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), comparative fit index (CFI), normed fit index (NFI),

incremental fit index (NFI), and relative fit index (RFI). In general, GFI, NFI, RFI, IFI, and CFI greater than 0.90 indicate good model fit (Bentler, 1989). As we illustrate in Table 6, all paths are statistically significant, with CR ranging from 14.225 to 3.590 (greater than 1.96), and thus indicate acceptable results (Hair et al., 2006; Holmes-Smith, 2000). As we show in Table 7, the goodness-of-fit indices of the proposed model of continuance intentions fit the data reasonably well, as confirmed by CMIN = 875.370, df = 236, CMIN/DF = 3.709, RMR = 0.231, GFI = 0.905, CFI = 0.964, RMSEA = 0.065, NFI = 0.952, IFI = 0.965, and RFI = 0.944.

[Take in Table 6]

[Take in Table 7]

Next, we examine the regression weights (path significance) of each relationship in our research model and the variance explained (R^2 value) by each path. The AMOS software reports the standardized regression weights, standard error, and critical ratio for each path. Table 6 illustrates the standardized regression weights, standard errors, and critical ratios. The hypothesized associations are strongly significant and all supported at p = 0.000 (Table 6). Perceived enjoyment is the strongest predictor of continuance intention (B = 0.53), followed by perceived usefulness (B = 0.18) and subjective norms (B = 0.18). The model explains 60% of the variance in continuance intentions (Figure 1).

[Take in Figure 1]

Invariance Analysis

When comparing cultures or groups, research participants may not recognize the same meaning or have the same understanding of survey items. Scholars thus have emphasized the importance of minimizing possible research biases in cross-national and cross-cultural research derived from the data collection (Yi, Merz, & Alden, 2008). To minimize the bias, we applied back-translation

(Brislin, 1986). In addition, we assessed measurement invariance (equivalence) across the groups to confirm the constructs' factorial invariance (Cheung & Rensvold, 1999).

The invariance analysis indicates whether any differences occur across women in different regions of Saudi Arabia. The factorial analysis reveals if they conceptualize the model constructs the same way. If we find a regional effect on the measurement invariance of the construct, and the score of the group analysis is significant, the construct measurement differs for the two groups, and they cannot be compared directly.

To compare the female samples across different regions, we use factorial invariance (metric equivalence) to assess the extent to which measures from the three groups (western, eastern, and central) have the same meaning (Hair et al., 2006). The CMIN = 1974.800, df = 799, CMIN/DF = 2.472, RMR = 0.281, GFI = 0.793, CFI = 0.930, RMSEA = 0.050, NFI = 0.889, IFI = 0.931, and RFI = 0.885 indicate outstanding goodness-of-fit indices across the groups (Table 8).

[Take in Table 8]

Assuming the unconstrained model is correct, compared with constraining all factorial paths, the results across groups indicate changes in df (Δdf) = 18, chi-square ($\Delta\chi^2$) = 16.194, and p = 0.579, which is greater than Byrne's (2001) 0.05 cut-off. Tests of measurement invariance in which we freely estimate the other loadings appear in Table 9. According to the results in Table 9, changes in the chi-square and df are insignificant (p = 0.579). Therefore, the goodness-of-fit indices are comparable across regional groups, in support of the invariance of the unconstrained and constrained models. We thereby establish metric equivalence and can proceed in our analysis to regression paths.

[Take in Table 9]

The coefficient (regression paths) invariance analysis determines if female respondents in the three different regions have the same relationships with same variables in the research model. The findings in Table 9 suggest coefficient invariance among women across the research model with all regression paths constrained ($\Delta\chi^2 = 14.147$, $\Delta df = 9$, $p = 0.117$). Despite the lack of real coefficient invariance, we consider the relationships between model constructs for any non-invariance. Invariance analysis enables us to examine the differences between the three main populated regions, such that we first compare eastern to western Saudi Arabia, then compare the eastern and central regions, and finally compare the western and central regions of Saudi Arabia.

The findings in Table 13 indicate that women in the three regions are non-invariant in certain relational paths. Differences in their behavior in the context of online shopping continuance in Saudi Arabia result from different coefficients in the perceived usefulness → enjoyment link. Specifically, in the comparisons of the east with west (change in chi-square = 9.576, $p = 0.002$) and east with central (change in chi-square = 6.312, p = 0.012) regions, the influence of perceived usefulness is greater for women in the western and central regions than for those in the eastern region (Tables 10 and 11). As we show in Table 12, all relational paths for women in the western and central regions are invariant.

[Take in Table 10]

[Take in Table 11]

[Take in Table 12]

[Take in Table 13]

The results of the latent mean regional analysis appear in Tables 14–16. The group analysis of women for the eastern and central samples in Table 14 exhibits latent mean

invariance for the research constructs, whereas the findings in Tables 15 and 16 suggest that eastern and western regions and western and central regions, respectively, have latent mean non-invariance for these constructs. These differences in women's continuance e-shopping intentions in Saudi Arabia result from differences in the latent mean of trust.

The trust latent mean in the western region sample, compared with the eastern region, is approximately -0.339, with a standard error (SE) of 0.129 and CR (t-value) of -2.632. The result is significant (p = 0.008). Thus, trust is –0.339 lower among women in the western region than among women in the eastern region sample.

The results in Table 16 show that the latent trust mean for the central region sample is approximately -0.288, with a SE of 0.128 and CR (t-value) of 2.249. The result is significant (p = 0.024). Thus, trust is –0.288 lower, or less favorable, among women in the central compared with the western region.

[Take in Table 14]

[Take in Table 15]

[Take in Table 16]

Direct and Indirect Effect Analysis

The direct and indirect effects in Tables 17–19 reveal that the greatest total influences of direct and indirect (mediated) effects on continuance intentions come from perceived usefulness for the eastern (0.653), western (0.624), and central (0.634) region samples. The next greatest influence derives from enjoyment in the eastern (0.558), western (0.473), and central (0.461) regions. Site quality, trust, and subjective norms have different level of influence on continuance intentions for women in the three regions (see Tables 17–19). Therefore, site quality, trust,

perceived usefulness, enjoyment, and subjective norms all play significant roles, whether direct or indirect, for women's continuance intentions regarding online shopping in Saudi Arabia.

[Take in Table 17]

[Take in Table 18]

[Take in Table 19]

Discussion

This research attempts to provide a validated conceptual model that integrates different factors and clarifies the theoretical problems of continuance e-shopping intentions and behavioral regional differences among women in Saudi Arabia. The online field survey validates the hypothesized model, and the model findings confirm that perceived enjoyment, perceived usefulness, and subjective norms are the main determinants of continuance intentions in Saudi Arabia, explaining 60% of continuance e-shopping intentions. However, enjoyment is more influential (see Table 6; srw = 0.507, cr = 8.120), followed by perceived usefulness (srw = 0.241, cr = 4.805), and then subjective norms (srw = 0.155, cr = 3.590). These findings are consistent with previous research (e.g., Bhattacherjee, 2001a; Childers et al., 2001; Davis et al., 1989; George, 2002; Shih & Fang, 2004; Taylor & Todd, 1995; Teo et al., 1999; Venkatesh et al., 2003). Enjoyment, perceived usefulness, and subjective norms have positive influences (direct and indirect) on consumers' continuance e-shopping intentions.

The measurement weights for the women in the three compared groups, according to metric invariance, are invariant. Testing for the factorial regression paths' invariance, we find that several relationship paths are similar for all three regions, namely, site quality → trust; site quality → perceive usefulness; trust → perceived usefulness; perceived usefulness → subjective norms; subjective norms → enjoyment; perceived usefulness → continuance intentions;

subjective norms → continuance intentions; and enjoyment → continuance intentions. However, the perceived usefulness →enjoyment relationship path is non-invariant for women in the eastern and western regions and eastern and central regions. Women are more affected by utilitarian usefulness of technology in the eastern and western regions and eastern and central regions (perceived usefulness → enjoyment, eastern srw = 0.308; western srw = 0.564; central srw = 0.524). That is, women tend to enjoy technology because of their utilitarian properties and useful experiences.

The factorial paths of site quality and trust are strong antecedents of perceived usefulness (site quality srw = 0.361, cr = 5.804; trust srw = 0.430, cr = 6.754) (see Table 6). Both site quality (east 0.438; west 0.413; central 0.415) and trust (east 0.266; west 0.284; central 0.280) have large, indirect effects on continuance intentions. These findings match the collectivist culture of Saudi Arabia, where people tend to trust only those within their in-group (Yamagishi & Yamagishi, 1994).

Trust and site quality do not have direct effects on continuance intentions toward the online retailer. Rather, significant indirect effects, from trust and site quality, move through perceived usefulness, subjective norms, and enjoyment. This model pertains to postpurchase behavior after a first-hand experience and implies that consumers' initial trust and usefulness expectations may be confirmed, which would lead to greater usefulness that puts more pressure on social contacts to use and enjoy the site.

Conclusion and Contributions

From a theoretical standpoint, these results contribute to existing literature in several ways. First, we enhance e-shopping literature by providing insights into the factors that seem to affect online

shopping continuance intentions for women in different regions in Saudi Arabia. We also posit that enjoyment, subjective norms, and perceived usefulness have direct and indirect effects on continuance intention. Furthermore, the greater positive indirect effects of site quality on perceived usefulness, subjective norms, and enjoyment and that of trust on enjoyment and subjective norms suggest that online retailers should increase the positive perceptions of trust and site quality to make their e-shopping environment more useful and enjoyable. To have a significant effect on e-shopping continuance intentions, any e-shopping environment should encourage a shopping experience that is useful and enjoyable.

Second, the results support previous research that shows perceived usefulness reflects the utilitarian aspects of online shopping, and perceived enjoyment reflects its hedonic aspects. In our study, enjoyment has the strongest effect on e-shopping continuance intentions, which confirms that enjoyment in an online shopping environment is important and has a direct effect for women across the main three regions in Saudi Arabia. The findings suggest Saudi women view e-shopping as a form of enjoyment and leisure. Moreover, this result demonstrates that perceived usefulness had a stronger direct and indirect effect on e-shopping continuance intentions, in support of previous research that shows usefulness has strong links to intentions. Usefulness is an important criterion for female consumers when they select online stores and can increase their satisfaction. Consumers may continue using an e-commerce service they consider useful, even if they are dissatisfied with it (Bhattacherjee, 2001a).

Third, few prior studies use SEM as their methodological approach, and even fewer apply invariance analysis to verify behavioral regional differences with a sample obtained from Saudi Arabia. This study addresses this knowledge gap.

Managerial Implications

This study provides managers with useful and important information about planning their Web sites and marketing strategies. Managers and site developers should focus on the quality and informative content, which reflect usefulness and enjoyment. Online consumers appear to pay attention to the content of the Web site, the quality of product or service, and information that enables them to reach purchase and repurchase decisions.

Since enjoyment has the strongest influence on women in Saudi Arabia, managers should consider ways to induce positive feelings of enjoyment, fun, and leisure during e-shopping interactions. Consumers compare the benefits they might obtain from buying a product or service to the perceived costs of that product to calculate overall perceived usefulness. In the long run, consumers might reconsider the perceived benefits of continuing a business relationship with an e-vendor and compare them with the potential benefits or switching costs of changing to another e-vendor. Therefore, managers must work continuously to enhance the perceived usefulness and benefits of their products or services and discourage switching.

Knowing consumer behaviors patterns in turn enables managers to improve their customer acquisition, retention, and penetration efforts. Managers should try to minimize churn, because customers who never return reduce the firm's customer base and revenues and require substantial expenditures to lure them back from competitors. To build sustainable, continued e-shopping relationships, managers must recognize both direct (perceived usefulness, enjoyment, subjective norms) and indirect (site quality, trust, perceived usefulness, subjective norms) influences on continuance intentions. Managers also should consider the indirect effect of Web site quality by offering positive, detailed information about the product or service, which should

enable them to enhance consumers' feelings of trust and usefulness associated with e-shopping. Moreover, they could educate their customers about the usefulness and benefits of the product or services. Such an emphasis should build positive word of mouth and enhance perceptions among friends and family members of current customers about the Web site's usefulness, site quality, interactivity, and enjoyment, which can increase perceptions of the firm's trustworthiness. The return should maximize the value of customer expenditures and perhaps lead to mutual company/customer gains.

This study draws attention to direct and indirect regional differences among female e-shoppers in Saudi Arabia, which should be noted when developing any Web site and marketing strategy. Understanding the regional differences between consumers can help managers shift consumers from single visits to ongoing, trusted, useful, and enjoyable relationships, which should produce more stable, long-run business for online firms in Saudi Arabia.

Research Limitations and Further Research

Typical of most field surveys, this study suffers some limitations. First, the novelty associated with using an online survey in the Saudi Arabian market indicates the empirical data may be biased by a novelty effect. Second, the online survey was posted with permission on Saudi universities' online forums. The survey thus may suffer a non-response bias, but there is no systematic way to test for the response rate.

More research should address the online context in Saudi Arabia, including ways to appeal to both hedonic and utilitarian shoppers, especially among the younger population. This research shows that the well-established TAM can be integrated with ECT, which should prompt additional research related to continuance intentions, such as comparisons of new e-shoppers

with continuing users who have Internet knowledge and experience. The continuance intention antecedents also reveal direct and indirect effects, as well as regional differences. The impact of other factors, such as satisfaction, loyalty, and interactivity, and the moderating effect of different demographic factors, such as income, age, gender, and e-shopping experience, should be considered in further research.

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Charles Dennis is a Senior Lecturer at Brunel University, London, UK. His teaching and research area is (e-)retail and consumer behaviour —the vital final link of the Marketing process —to satisfy the end consumer. Charles is a Chartered Marketer and has been elected as a Fellow of the Chartered Institute of Marketing for his work helping to modernise the teaching of the discipline. Charles was awarded the Vice Chancellor's Award for Teaching Excellence for

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Figure 1: Internet continuance intention shopping model

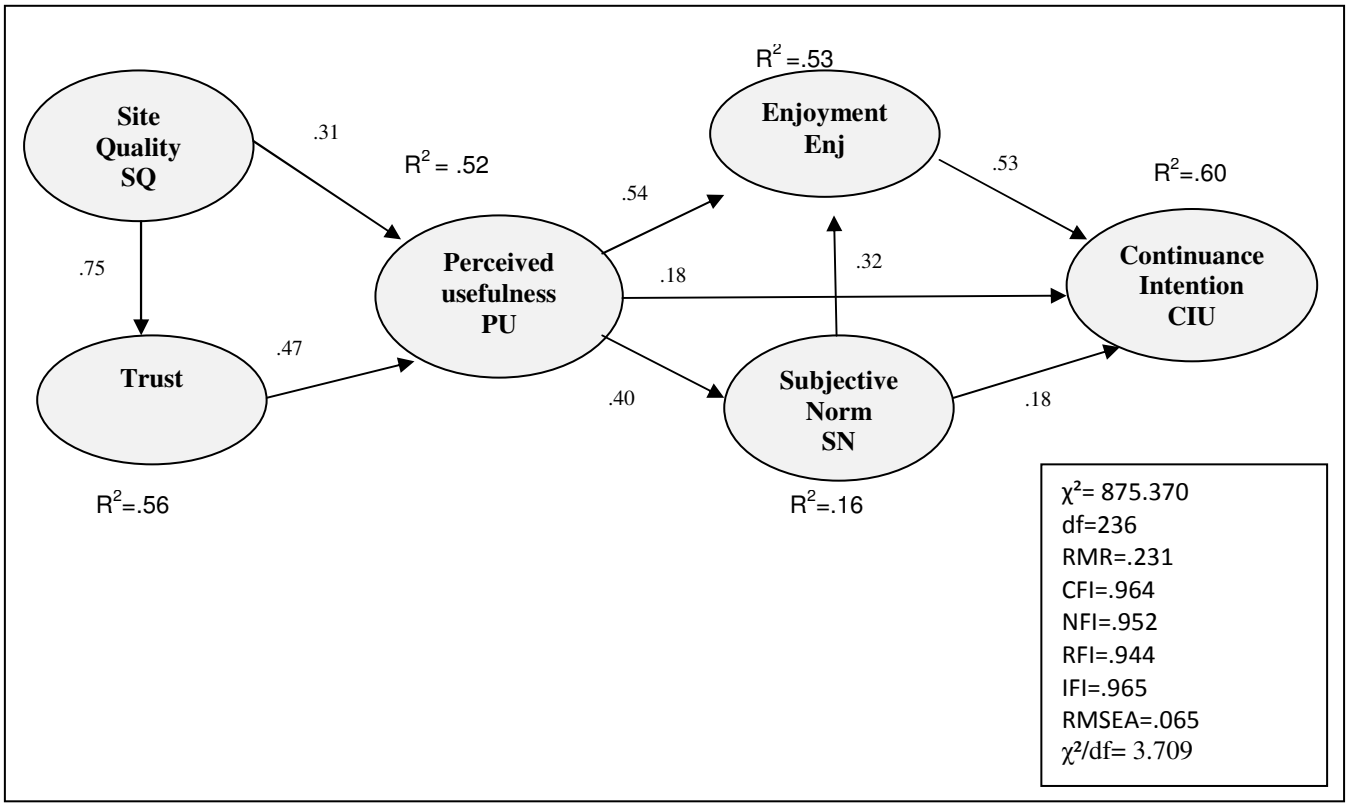

Table 1: Demographic items

Question	Count	Percentage
Gender		
Total Female Participants	650	100
Age		
Less than 18	16	2.5
Between 18-25	173	26.6
Between 26-35	278	42.8
Between 36-45	143	22.0
Above 46	40	6.2
Education Level		
Less than high school	10	1.5
High school	71	10.9
Diploma	84	12.9
Bachelor	344	52.9
Post-graduate	141	21.7
Occupation		
Government employee	234	36.0
Private sector	230	35.4
Business people	42	6.5
Student	144	22.22
Income Level		
<SR4,000 (£1,000)	105	16.2
SR4,000-SR6,000 (£1,000-2,000)	78	12.0
SR6,001-SR8,000 (£2,001-4,000)	89	13.7
SR8,001-SR10,000 (£4,001-7,000)	77	11.8
SR10,001-SR15,000 (£7,001-10,000)	128	19.7
>SR15,001 (>£10,000)	123	18.9
Dependent on others	50	7.7
Region		
East region	160	24.6
West region	261	40.2
Central region	181	27.8
North region	29	4.5
South Region	19	2.9

Table 2: Items purchased online and reason for using the Internet

Items purchased in the last six months	Region where you Live in Saudi Arabia		
	East region	West region	Middle region
Buying Books	47	71	45
	16.9%	25.5%	16.2%
Music CD, DVD,	34	34	28

Videotape	12.2%	15.5%	10.1%
Cloth	37	41	20
	13.3%	14.7%	7.2%
Sports equip	22	18	10
	7.9%	6.5%	3.6%
Travel reservation and ticketing	43	64	31
	15.5%	23.0%	11.2%
Hotel booking	31	50	23
	11.2%	18.0%	8.3%
Reason for using the Internet			
Info. Search	72	100	56
	25.9%	36.0%	20.1%
Entertainment	60	78	42
	21.6%	28.1%	15.1%
Social Communication	47	76	35
	16.9%	27.3%	12.6%
work	39	71	32
	14.0%	25.5%	11.5%
Study	44	74	45
	15.8%	26.6%	16.2%
Purchasing	55	90	41
	19.8%	32.4%	14.7%
Banking	36	72	38
	12.9%	25.9%	13.7%

Table 3: Important issues when shopping online

Important issues to e-shoppers	Region where you Live in Saudi Arabia		
	East region	West region	Middle region
Security	74	100	57
	27%	36%	21%
Price	75	104	56
	27%	37%	20%
Service, Delivery	75	97	58
	27%	35%	21%
Quality	75	102	60

	27%	37%	22%
Payment	73	100	57
	26%	36%	21%
Language Barrier	62	81	41
	22%	29%	15%

Table 4: Scale Properties and Correlations

				Factor Correlations					
Model Constructs	Mean	Std. Dev.	Cronbach's alpha	SQ	PU	Trust	SN	Enj	CIU
SQ	26.92	6.38	0.927	1.000					
PU	32.97	7-86	0.946	.749	1.000				
Trust	21.74	5.03	0.947	.655	.695	1.000			
SN	18.73	6.19	0.943	.259	.275	.395	1.000		
Enj	28.39	8.61	0.931	.438	.465	.668	.536	1.000	
CIU	31.48	7.98	0.961	.397	.421	.606	.533	.745	1.000

Table 5: Measurement Model

Constructs/Indicators	S. Factor Loading	S.E	C.R.	AVE	Squared Multiple Correlation
Site Quality (SQ)				0.757	
SQ 1	0.922	0.039	26.510		0.85
SQ 2	0.844	0.038	26.414		0.71
SQ 3	0.855	0.035	26.972		0.73
SQ 4	0.857	__	__		0.74
Perceived usefulness				0.813	
PU 3	0.911	0.039	37.788		0.83
PU 4	0.909	0.027	37.135		0.83
PU 5	0.914	__	__		0.84
PU 6	0.871	0.029	33.487		0.76
Trust				0.804	
Trusting Beliefs Integrity 1	0.896	0.028	35.069		0.80
Trusting Beliefs Integrity 2	0.886	0.023	42.297		0.79
Trusting Beliefs Integrity 3	0.896	0.027	35.167		0.80
Trusting Beliefs Integrity 4	0.909	__	__		0.83
Subjective Norm				0.804	
SN 3	0.731	__	__		0.53

SN 4	0.973	0.054	25.507		0.95
SN 5	0.955	0.057	24.647		0.91
SN 6	0.908	0.055	23.875		0.82
Enjoyment				0.744	
Enj 4	0.705	—	—		0.50
Enj 5	0.94	0.055	22.934		0.88
Enj 6	0.925	0.055	22.918		0.86
Enj 8	0.858	0.052	20.672		0.74
Continuance Intention				0.864	
CIU 1	0.827	0.024	35.466		0.69
CIU 2	0.928	0.017	55.752		0.86
CIU 3	0.981	—	—		0.96
CIU 4	0.974	0.012	78.936		0.95

Table 6: Regression Weights

Hypotheses	Paths			Standardized Regression Weights (B)	Standard Error S.E.	Critical Ratio C.R.	Significance	**Hypotheses Findings**
H1 a	PU	<---	SQ	.361	.063	5.804	***	Supported
H1 b	Trust	<---	SQ	.722	.047	14.225	***	Supported
H2	PU	<---	Trust	.430	.070	6.754	***	Supported
H3 a	SN	<---	PU	.382	.053	6.823	***	Supported
H3 b	Enj	<---	PU	.541	.043	9.552	***	Supported
H3 c	CIU	<---	PU	.241	.055	4.805	***	Supported
H4 a	Enj	<---	SN	.315	.040	6.347	***	Supported
H4 b	CIU	<---	SN	.155	.050	3.590	***	Supported
H5	CIU	<---	Enj	.507	.089	8.120	***	Supported

*** $p < 0.001$.

Table 7: Goodness-of-Fit Indices

Confirmatory Factor Analysis CFA (Goodness-of-fit measure)	Acceptable Values	Value
Chi-Square CMIN	NA	875.370
Degree of freedom	NA	236
CMIN/DF	Chi square/ df ≤5 (Bentler & Bonnett, 1989)	3.709

Confirmatory Factor Analysis CFA (Goodness-of-fit measure)	Acceptable Values	Value
P value	p≤0.05 (Hair et al., 2006)	0.000
Root mean square residual (RMR)	No established thresholds (the smaller the better) (Hair et al., 2006)	0.231
Goodness-of-fit (GFI)	≥ 0.90 (the higher the better) (Hair et al., 2006)	0.905
Comparative fit index (CFI)	≥ 0.90 (Hair et al., 2006)	0.964
Root mean square error of approximate (RMSEA)	< 0.08 (Hair et al., 2006)	0.065
Normal fit index (NFI)	≥ 0.90 (Hair et al., 2006)	0.952
Incremental fit index (IFI)	≥ 0.90 (Hair et al., 2006)	0.965
Relative fit index (RFI)	≥ 0.90 (Hair et al., 2006)	0.944

Table 8: Goodness-of-fit Indices (East – West - Central)

Confirmatory Factor Analysis CFA (Goodness-of-fit measure)	Acceptable Values	Value
Chi-Square CMIN	NA	1974.800
Degree of freedom	NA	799
CMIN/DF	Chi square/ df ≤5 (Bentler & Bonnett, 1989)	2.472
P value	p≤0.05 (Hair et al., 2006)	0.000
Root mean square residual (RMR)	No established thresholds (the smaller the better) (Hair et al., 2006)	0.281
Goodness-of-fit (GFI)	≥ 0.90 (the higher the better) (Hair et al., 2006)	0.793
Comparative fit index (CFI)	≥ 0.90 (Hair et al., 2006)	0.930
Root mean square error of approximate (RMSEA)	< 0.08 (Hair et al., 2006)	0.050
Normal fit index (NFI)	≥ 0.90 (Hair et al., 2006)	0.889
Incremental fit index (IFI)	≥ 0.90 (Hair et al., 2006)	0.931
Relative fit index (RFI)	≥ 0.90 (Hair et al., 2006)	0.885

Table 9: Invariance Analysis (East – West - Central)

Model	Δdf	$\Delta\chi^2$	p
Measurement weights	18	16.194	.579
Structural weights	9	14.147	.117

Table 10: Structural Factorial Analysis of Theoretical Construct for Region (East – West)

Hypotheses	Paths			East Sample			West Sample			Invariance		
				SRW	C.R.	P value	SRW	C.R.	P Value	Δ DF	Δ CMIN	P Value
H1 b	Trust	<---	SQ	.663	11.988	***	.807	13.015	***	1	3.038	.081
H1 c	PU	<---	SQ	.357	3.352	***	.292	3.500	***	1	.228	.633
H2	PU	<---	Trust	.517	3.869	***	.428	5.108	***	1	.318	.573
H3 a	SN	<---	PU	.428	5.423	***	.376	6.447	***	1	.285	.593
H3 b	Enj	<---	PU	.308	5.876	***	.564	9.010	***	1	9.576	.002
H3 c	CIU	<---	PU	.219	3.215	.001	.251	3.014	.003	1	.088	.766
H4 a	Enj	<---	SN	.278	5.377	***	.248	3.962	***	1	.130	.718
H4 b	CIU	<---	SN	.147	2.248	.025	.231	3.015	.003	1	.702	.402
H5	CIU	<---	Enj	.858	5.900	***	.613	6.069	***	1	2.042	.153

*** $p < 0.001$.

Table 11: Structural Factorial Analysis of Theoretical Construct for Region (East – Central)

Hypotheses	Paths			East Sample			Central Sample			Invariance		
				SRW	C.R.	P value	SRW	C.R.	P Value	Δ DF	Δ CMIN	P Value
H1 a	PU	<---	SQ	.357	3.350	***	.377	4.696	***	1	.023	.880
H1 b	Trust	<---	SQ	.663	11.982	***	.649	8.520	***	1	.020	.886
H2	PU	<---	Trust	.517	3.867	***	.441	5.545	***	1	.241	.623
H3 a	SN	<---	PU	.428	5.420	***	.302	4.296	***	1	1.403	.236
H3 b	Enj	<---	PU	.308	5.873	***	.524	7.621	***	1	6.312	.012
H3 c	CIU	<---	PU	.219	3.213	.001	.305	3.448	***	1	.596	.440
H4 a	Enj	<---	SN	.278	5.374	***	.219	3.532	***	1	.518	.472
H4 b	CIU	<---	SN	.147	2.247	.025	.211	2.745	.006	1	.404	.525
H5	CIU	<---	Enj	.858	5.897	***	.624	5.307	***	1	1.623	.203

*** $p < 0.001$.

Table 12: Structural Factorial Analysis of Theoretical Construct for Region (West – Central)

Hypotheses	Paths			West Sample			Central Sample			Invariance		
				SRW	C.R.	P value	SRW	C.R.	P Value	Δ DF	Δ CMIN	P Value
H1 a	PU	<---	SQ	.292	3.501	***	.377	4.699	***	1	.538	.463
H1 b	Trust	<---	SQ	.807	13.017	***	.649	8.526	***	1	2.493	.114
H2	PU	<---	Trust	.428	5.109	***	.441	5.549	***	1	.012	.914
H3 a	SN	<---	PU	.376	6.448	***	.302	4.299	***	1	.640	.424
H3 b	Enj	<---	PU	.564	9.011	***	.524	7.626	***	1	.185	.667
H3 c	CIU	<---	PU	.251	3.014	.003	.305	3.450	***	1	.200	.655
H4 a	Enj	<---	SN	.248	3.962	***	.219	3.534	***	1	.109	.742
H4 b	CIU	<---	SN	.231	3.016	.003	.211	2.747	.006	1	.034	.853
H5	CIU	<---	Enj	.613	6.069	***	.624	5.311	***	1	.005	.945

*** $p < 0.001$.

Table 13: Regional Structure Invariant

Hypotheses	Paths			East/West Sample Invariant			East/Central Sample Invariant			West/Central Sample Invariant		
				Δ DF	Δ CMIN	P Value	Δ DF	Δ CMIN	P Value	Δ DF	Δ CMIN	P Value
H1 a	PU	<---	SQ	1	.228	.633	1	.023	.880	1	.538	.463
H1 b	Trust	<---	SQ	1	3.038	.081	1	.020	.886	1	2.493	.114
H2	PU	<---	Trust	1	.318	.573	1	.241	.623	1	.012	.914
H3 a	SN	<---	PU	1	.285	.593	1	1.403	.236	1	.640	.424
H3 b	Enj	<---	PU	1	9.576	.002	1	6.312	.012	1	.185	.667
H3 c	CIU	<---	PU	1	.088	.766	1	.596	.440	1	.200	.65

Hypotheses	Paths			East/West Sample Invariant			East/Central Sample Invariant			West/Central Sample Invariant		
												5
H4 a	Enj	<---	SN	1	.130	.718	1	.518	.472	1	.109	.742
H4 b	CIU	<---	SN	1	.702	.402	1	.404	.525	1	.034	.853
H5	CIU	<---	Enj	1	2.042	.153	1	1.623	.203	1	.005	.945

*** $p < 0.001$.

Table 14: Means: Region Sample (Central – East)

	Latent mean	S.E.	C.R.	P Value
PU	.086	.154	.557	.577
Trust	-.070	.143	-.489	.625
Enj	-.143	.150	-.955	.339
CIU	-.018	.147	-.120	.904
SQ	.026	.153	.172	.863
SN	-.057	.123	-.460	.646

Table 15: Means: Region Sample (West – East)

	Latent mean	S.E.	C.R.	P Value
PU	.021	.125	.171	.864
Trust	-.339	.129	-2.632	.008
Enj	-.238	.132	-1.807	.071
CIU	-.150	.133	-1.123	.261
SQ	-.014	.134	-.103	.918
SN	-.158	.101	-1.563	.118

Table 16: Means: Region Sample (Central – West)

	Latent mean	S.E.	C.R.	P Value
PU	.079	.126	.629	.529
Trust	.288	.128	2.249	.024

	Latent mean	S.E.	C.R.	P Value
Enj	.116	.129	.899	.369
CIU	.136	.128	1.066	.287
SQ	.060	.124	.486	.627
SN	.127	.107	1.192	.233

Table 17: Direct and Indirect Influences on Continuance Intentions (East – West)

Construct	CIU (East)			CIU (West)		
	Direct	Indirect	Total	Direct	Indirect	Total
SQ	--------	.438	.438	--------	.413	.413
TRUST	--------	.266	.266	--------	.284	.284
PU	.214	.420	.653	.211	.413	.624
SN	.144	.233	.377	.163	.107	.279
ENJ	.558	--------	.558	.473	--------	.473
R^2 = 0.59						

Table 18: Direct and Indirect Influences on Continuance Intentions (East – Central)

Construct	CIU (East)			CIU (Central)		
	Direct	Indirect	Total	Direct	Indirect	Total
SQ	--------	.438	.438	--------	.415	.415
TRUST	--------	.266	.266	--------	.280	.280
PU	.214	.420	.635	.262	.371	.634
SN	.144	.233	.377	.162	.105	.267
ENJ	.558	--------	.558	.461	--------	.461
R^2 = 0.61						

Table 19: Direct and Indirect Influences on Continuance Intentions (West – Central)

Construct	CIU (West)			CIU (Central)		
	Direct	Indirect	Total	Direct	Indirect	Total
SQ	--------	.413	.413	--------	.415	.415

TRUST	--------	.284	.284	--------	.280	.280
PU	.211	.413	.624	.262	.371	.634
SN	.163	.107	.270	.162	.105	.267
ENJ	.473	--------	.473	.461	--------	.461
R^2 = 0.56						