Driving online shopping: Spending and behavioral differences among women in Saudi Arabia

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Abstract

This study proposes a revised technology acceptance model that integrates expectation confirmation theory to measure gender 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 enjoyment, usefulness, and subjective norms are determinants of online shopping continuance in Saudi Arabia. High and low online spenders among women in Saudi Arabia are equivalent. The structural weights are also largely equivalent, but the regression paths from perceived site quality to perceived usefulness is not invariant between high and low e-shoppers in Saudi Arabia. This research moves beyond online shopping intentions and includes factors affecting online shopping continuance. The research model explains 60% of the female respondents' intention to continue shopping online. Online strategies cannot ignore either the direct and indirect spending differences on continuance intentions, and the model can be generalized across Saudi Arabia.

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

Authors' biography

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Study Motivation

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

The Internet had 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 had less than 3 million users worldwide and no e-commerce applications; by 1999, about 250 million users appeared online, and 63 million of them engaged in online transactions, which produced 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 and 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 increased to 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 some potential savings: 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, et al. 2002). In the airline industry, the savings are similar. According to the International Air Transport Association, airlines currently issue approximately 300 million paper tickets per year at a cost of $10 per ticket to process (Arab News Newspaper, 2007). One e-ticket process costs only $1(Arab News Newspaper, 2007).

Despite the impressive online purchasing growth rates though, compelling evidence indicates that many consumers who search different online retail sites abandon their purchases. This trend and the proliferation of business-to-consumer e-shopping activities require that online businesses understand which factors encourage consumers to complete their purchases. Acquiring new customers also can cost as much as five times more than retaining existing ones (Bhattacherjee 2001b; Crego and Schiffrin 1995; Petrissans 1999). For example, a 5% increase in customer retention in the insurance industry typically translates into an 18% reduction in operating costs (Bhattacherjee, 2001a; Crego et al, 1995).

Online customer retention is 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 and 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 and Schiffrin 1995).

To employ the savings derived from e-businesses, companies might engage in tactics to increase switching costs and thereby retain more customers. E-retailers might recall details about the customer that reduce the customer effort demanded in future transactions; they could also learn more about the customer to tailor those future interactions to the customer's needs (Straub and Watson 2001). Better product quality, lower prices, better services, and increased outcome value should help companies build sustainable relationships with their customers.

Theoretical explanations of online shopping intentions suggest several important factors. For example, Rogers (1995) suggests that consumers reevaluate their 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 et al. 1989; Karahanna et al. 1999). We adopt the extended expectation confirmation theory (ECT; Bhattacherjee 2001b) and the technology acceptance model (TAM; Davis et al. 1989) as a theoretical basis, integrating ECT from consumer behavior literature to propose a model of e-shopping continuance intentions, similar to the way in which the TAM adapts the theory of reasoned action (TRA) from social psychology to postulate a model of technology acceptance.

The TAM, as expanded by Davis and colleagues (1992) and Gefen (2003), and the ECT (Bhattacherjee 2001a; Oliver 1980) have been used widely in research in the industrialized world, 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, 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.

Previous research also finds that gender differences significantly affect new technology decision-making processes (Van Slyke et al. 2002; Venkatesh et al. 2000). Venkatesh and colleagues (2000) report that women tend to accept information technology when others have high opinions of it and 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 and 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 gender-based differences in shopping behavior online in Saudi Arabia. This research attempts to provide a validated conceptual model that integrates different factors, including gender, 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 and Prasad 1999; Davis 1989; Dishaw and Strong 1999; Gefen and Keil 1998; Igbaria et al. 1996; Moon and Kim 2001; Taylor and Todd 1995; Venkatesh 2000; Venkatesh and 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 and Straub 2000; Leader et al. 2000; Teo et al. 1999).

Updates to the TAM add antecedents of perceived usefulness and ease of use (Venkatesh and 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 et al. 1992; Leader et al. 2000; Moon and Kim 2001; Teo et al. 1999; Venkatesh 1999).

Expectation confirmation theory (ECT) in turn helps predict consumer behavior before, during, and after a purchase in various contexts, in terms of both product and service repurchases (Anderson and Sullivan 1993; Dabholkar et al., 2000; Oliver, 1980, 1993; Patterson et al. 1997; Spreng et al. 1996; Swan and Trawick 1981; Tse and 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 versus 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 and Sullivan 1993; Oliver 1980).

However, the ECT ignores potential changes in initial expectations following the consumption experience and the effect of these expectation changes on subsequent cognitive processes (Bhattacherjee 2001a). Pre-purchase expectations typically are based on others'

opinions or information from mass media, whereas post-purchase expectations derive from first-hand experience, which appears more realistic (Fazio and 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 and colleagues (2003) suggest that usage and intentions to continue usage may depend on cognitive beliefs about perceived usefulness. Gefen (2003) also indicates 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 and 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 (McKnight et al. 2002a), 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 et al. 2002a). Gefen and colleagues (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 et al. 2000; McKnight et al. 2002b; Urban et al. 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 and colleagues (2001) also find that enjoyment can predict attitude towards e-shopping, just as much as usefulness can. However, usefulness was the better predictor for grocery items, whereas enjoyment offered better results for hedonic purchases. With regard to e-shopping, the hedonic enjoyment constructs in the TAM may reflect the pleasure users obtain from shopping online, which reinforces continuance intentions.

Proposed Model and Hypotheses

Site Quality

Initial trust forms quickly on the basis of available information (Meyerson et al. 1996). If consumers perceive a Web site as 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 and 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 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 the primary prerequisite for mass market technology acceptance, which depends on consumers' expectations about how technology can improve and simplify their lives (Peterson et al. 1997). A Web site is useful if it delivers services to a customer but not if the customers' delivery expectations are not met (Barnes and 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 et al. 1994). In a robust TAM, perceived usefulness predicts IT use and intention to use (e.g., Adams et al. 1992; Agarwal and Prasad, 1999; Gefen and Keil 1998; Gefen and Straub 1997; Hendrickson et al. 1993; Igabria et al. 1995; Subramanian 1994), including e-commerce adoption (Gefen and 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 and colleagues (2003), social influences result from subject norms, which relate to consumers' perceptions of the beliefs of other consumers. Shim and colleagues (2001) consider subjective norms only marginally significant on 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 et al. 2002). Shopping enjoyment (Koufaris 2002), perceived entertainment value of the Web site (O'Keefe et al. 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 intentions.

Methodology

To validate the conceptual model and the proposed research hypotheses, we developed an online survey, which is 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 and colleagues (2002a, 2002b). The perceived usefulness items derive from Gefen (2003). Perceived enjoyment is a measure from Childers (2001). Shih and Fang (2004) provide the subjective norm items. The continuance intention items were adapted from Yang (2004).

The pilot study suggested some clarifications to the survey. 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 were 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 in Saudi Arabia. This somewhat surprising participation level illustrates the high rate of Internet use 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's degrees, and 21.7% were postgraduates. Most respondents thus are well-educated. Moreover, 36% of them work in the public sector (government employee), 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 visited at least five different online sites to purchase each month, and 66.9% used the Internet for actual shopping. The western region reveals the highest percentages in most categories, such that 31.1% spend £100–£500 per year online, and 51.3% spend more than £501 per year. Furthermore, 49.7% of the respondents used the Internet in the prior six months to make flight booking or purchase airline tickets, 37.5% made hotel reservations, 35.2% purchased clothing, 58.6% bought books, and 37.8% purchased CD-DVDs or video tapes. To indicate why they used the Internet, as we summarize in Table 3, 82% referred to information search, 56.8% to social communication, 52.5% to banking, 64.8% to entertainment, 51% to work-related tasks, and 69% used it for study-related tasks.

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 Reasons

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

Analysis

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

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

Structural Equation Model

As the first step in testing the proposed model, which operationalizes the hypotheses and the factors involved in continuance e-shopping intentions 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 critical ratio (CR), chi-square (CMIN), degrees of freedom (df), chi-square/degrees of freedom (CMIN/DF), root mean square residual (RMR), root mean square error of approximate (RMSEA), goodness-of-fit index (GFI), comparative fit index (CFI), normal fit index (NFI), incremental fit index (NFI), and the relative fit index (RFI). In general, GFI, NFI, RFI, IFI, and CFI values greater than 0.90 indicate good model fit (Bentler 1989). As we illustrate in Table 6, all the hypotheses are statistically significant and supported, with CRs ranging from 20.318 to 4.888, which are greater than 1.96 and thus indicate acceptable results (Hair et al. 2006; Holmes-Smith 2000). As illustrated in Table 7, the goodness-of-fit indices of the proposed model of continuance intentions fit the data reasonably well, as confirmed by the chi-square 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.

Table 6: Regression Weights

Hypotheses	Paths			Standardized Regression Weights (B)	Standard Error S.E.	Critical Ratio C.R.	P Value	Hypotheses Findings
H1 a	PU	<---	SQ	.305	.051	6.262	***	Supported
H1 b	Trust	<---	SQ	.749	.036	20.318	***	Supported
H2	PU	<---	Trust	.467	.053	9.324	***	Supported
H3 a	SN	<---	PU	.395	.037	9.580	***	Supported
H3 b	Enj	<---	PU	.541	.032	13.473	***	Supported
H3 c	CIU	<---	PU	.183	.040	4.888	***	Supported
H4 a	Enj	<---	SN	.322	.032	8.876	***	Supported
H4 b	CIU	<---	SN	.178	.039	5.521	***	Supported
H5	CIU	<---	Enj	.527	.062	11.481	***	Supported

*** $p < 0.001$.

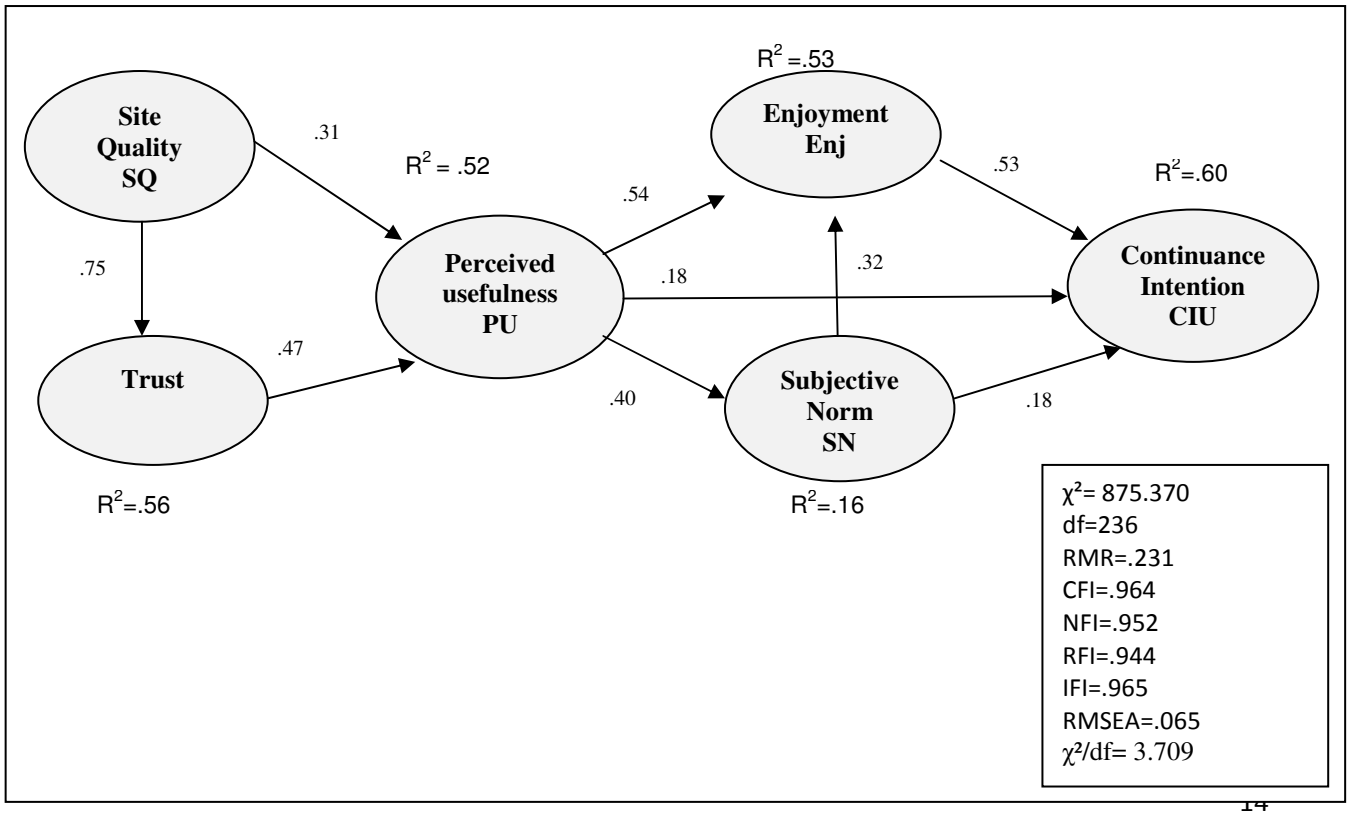
Table 7: Goodness-of-Fit Indices

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 and Bonnett, 1989)	3.709
P value	p≤0.05 (Hair et al., 2006)	0.000
Root mean square residual (RMR)	No established thresholds	0.231

Confirmatory Factor Analysis CFA (Goodness-of-fit measure)	Acceptable Values	Value
	(the smaller the better) (Hair et al., 2006)	
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

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 CR for each path, which we provide in Table 6. The hypothesized associations are strongly significant at p = 0.000. Perceived enjoyment is the strongest predictor of continuance intention (B = 0.53), followed by perceived usefulness (B = 0.18), and then subjective norms (B = 0.18). The model explains 60% of the variance in continuance intentions (Figure 1).

Figure 1: Internet Continuance Intention Shopping Model



Invariance Analysis

When comparing cultures or groups, research participants may not recognize the same meaning of survey items. To minimize the bias in cross-national and cross-cultural research derived from the data collection, we applied back-translation (Brislin 1986; Yi et al. 2008). In addition, we assessed the measurement invariance across the groups to consider the constructs' factorial invariance (Cheung et al. 1999).

The invariance analysis indicates whether any differences occur between high and low online spenders among women. If we find that the annual online spending 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 annual spending (low and high spending) among female respondents, we use factorial invariance to assess the extent to which measures from both groups have the same meaning (Hair et al. 2006). The CMIN = 1404.966, df = 499, CMIN/DF = 2.816, RMR = 0.249, GFI = 0.855, CFI = 0.951, RMSEA = 0.053, NFI = 0.925, IFI = 0.951, and RFI = 0.918 indicate outstanding goodness-of-fit indices across the groups (Table 8).

Table 8: Goodness-of-Fit Indices

Confirmatory Factor Analysis CFA (Goodness-of-fit measure)	Acceptable Values	Value
Chi-Square CMIN	NA	1404.966
Degree of freedom	NA	499
CMIN/DF	Chi square/ df ≤5 (Bentler and Bonnett, 1989)	2.816
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)	0.249
Goodness-of-fit (GFI)	≥ 0.90 (the higher the better) (Hair et al., 2006)	0.855
Comparative fit index (CFI)	≥ 0.90 (Hair et al., 2006)	0.951
Root mean square error of approximate (RMSEA)	< 0.08 (Hair et al., 2006)	0.053
Normal fit index (NFI)	≥ 0.90 (Hair et al., 2006)	0.925
Incremental fit index (IFI)	≥ 0.90 (Hair et al., 2006)	0.951
Relative fit index (RFI)	≥ 0.90 (Hair et al., 2006)	0.918

Assuming the unconstrained model is correct, rather than constraining all factorial paths, the result across groups indicates changes in df (Δdf) = 18, chi-square ($\Delta\chi^2$) = 21.721, and p = 0.245, which is greater than Byrne's (2001) 0.05 cut-off. Tests of this measurement invariance appear in Table 9, which shows that changes in the chi-square and df are insignificant (p = 0.245). Therefore, the goodness-of-fit indices are comparable across low and high online spending groups, which justifies the invariance of the unconstrained and constrained models. Thus, we establish metric equivalence and can proceed in our analysis to regression paths.

Table 9: Invariance Analysis

Model	Δdf	$\Delta\chi^2$	p
Measurement weights	18	21.721	.245
Structural weights	9	20.273	.016

The coefficient (regression paths) invariance analysis determines if high and low spenders among female respondents have the same relationships with same variables in the research model. The findings in Table 9 suggest coefficient non-invariance between low and high online spending among women across the research model with all regression paths constrained ($\Delta\chi^2$ = 20.273, Δdf = 9, p = 0.016). To consider the relationships between model constructs for the source of non-invariance differences, we conducted an invariance analysis between low and high online spenders.

The findings in Table 10 indicate that low and high online spenders are non-invariant for certain relational paths. Differences in their behavior in the context of online shopping continuance in Saudi Arabia result from different coefficients of perceived site quality → perceived usefulness (change in chi-square = 5.033, p = 0.025). For the high spenders, this influence is greater than that for low spenders.

Table 10: Structural Factorial Analysis: High and Low Online Spending by Women

Hypotheses	Paths			Low Online Spenders			High Online Spenders			Invariance		
				RW	C.R.	P value	RW	C.R.	P Value	Δ DF	Δ CMIN	P Value
H1 a	PU	<---	SQ	.185	.070	2.641	.412	.073	5.665	**1**	**5.033**	**.025**
H1 b	Trust	<---	SQ	.790	.052	15.310	.692	.050	13.815	1	1.853	.173
H2	PU	<---	Trust	.570	.073	7.849	.436	.077	5.638	1	1.604	.205

Hypotheses	Paths			Low Online Spenders			High Online Spenders			Invariance		
H3 a	SN	<---	PU	.393	.054	7.253	.321	.050	6.362	1	.953	.329
H3 b	Enj	<---	PU	.477	.050	9.515	.402	.042	9.558	1	1.310	.252
H3 c	CIU	<---	PU	.208	.063	3.292	.196	.053	3.699	1	.021	.886
H4 a	Enj	<---	SN	.228	.047	4.883	.323	.045	7.253	1	2.118	.146
H4 b	CIU	<---	SN	.239	.058	4.143	.202	.053	3.807	1	.223	.637
H5	CIU	<---	Enj	.741	.095	7.772	.689	.082	8.399	1	.166	.683

The results of the latent mean online spending analysis appear in Table 11. The group analysis between the low and high spender samples exhibits latent mean invariance for the research constructs.

Table 11: Means: Annual Spending Sample (Low Spender – High Spender**)**

	Latent mean	S.E.	C.R.	P Value
PU	-.113	.102	-1.110	.267
Trust	-.077	.104	-.744	.457
Enj	.065	.105	.618	.537
CIU	-.093	.107	-.868	.386
SQ	-.040	.105	-.380	.704
SN	-.004	.088	-.050	.960

Direct and Indirect Effect Analysis

The direct and indirect effects in Table 12 reveal that the greatest total influences of direct and indirect (mediated) effects on continuance intentions come from perceived enjoyment for both the low online spenders (0.741) and high online spenders (0.689) samples. The next greatest influences derive from perceived usefulness for low (0.721) and high (0.610) online spenders. Trust has a greater influence on low online spenders' (0.411) than on high online spenders' (0.266) continuance intentions. Thus, site quality, trust, perceived usefulness, and subjective norms all play significant roles for continuance intentions toward online shopping in Saudi Arabia among women with both low and high online spending habits.

Table 12: Direct and Indirect Influences on Continuance Intentions (Low Spender – High Spender**)**

Construct	CIU (Low Spender)	CIU (High Spender)

	Direct	Indirect	Total	Direct	Indirect	Total
SQ	--------	.458	.458	--------	.435	.435
TRUST	--------	.411	.411	--------	.266	.266
PU	.208	.513	.721	.196	.414	.610
SN	.239	.169	.408	.202	.223	.424
ENJ	.741	--------	.741	.689	--------	.689
R^2 = 0.60						

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 differences among women on online annual spending 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 = 0.527, cr = 11.481), followed by subjective norms (srw = 0.178, cr = 5.521), and then perceived usefulness (srw = 0.183, cr = 4.888). These findings are consistent with previous research (e.g., Bhattacherjee 2001a; Childers 2001; Davis et al. 1989; George 2002; Shih and Fang 2004; Taylor and 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 of low and high online spending among female shoppers, based on metric invariance, are invariant. Testing for factorial regression paths invariance, we find that relationship path between site quality → trust; trust → perceived usefulness; perceived usefulness → subjective norms; perceived usefulness →enjoyment; subjective norms → enjoyment; perceived usefulness → continuance intentions; subjective norms → continuance intentions; and enjoyment → continuance intentions are similar for both low and high online spenders among women in Saudi Arabia. However, the site quality → perceived usefulness relationship path is non-invariant (high spenders rw = 5.665; low spenders rw = 2.641). That is, higher online spenders tend to accept technology, because these women perceive high quality content, good design, simple navigation, ease in finding necessary information, and ease of communication (utilitarian and hedonic experiences), which in turn increase the level of usefulness they perceive.

The model factorial paths for site quality and trust indicate strong antecedents of perceived usefulness on the regression weights (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 great indirect effects on continuance intentions (see Tables 17–19). These findings match the collectivist culture of Saudi Arabia, where people tend to trust only those within their in-group (Yamagishi and Yamagishi 1994).

They similarly may apply to other collectivist cultures or other nations in the Gulf States that appear similar to Saudi Arabia in various traits.

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 post-purchase behavior after a first-hand experience and provides confirmation of the effects of consumer initial trust and usefulness expectations, which lead to greater usefulness and put 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 with high and low spending habits 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 with either high or low online spending habits in Saudi Arabia. Moreover, this result demonstrates that perceived enjoyment has a stronger direct and indirect effect on e-shopping continuance intentions. Usefulness came next as it is an important criterion for female consumers when they select online stores; it 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 online spending differences with a sample obtained from Saudi Arabia. This study addresses this knowledge gap.

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 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 its youth population. Researchers also could extend and apply this approach in other cultures, whether those similar to Saudi Arabia, to confirm that the findings generalize to other collectivist cultures, or to cultures very unlike the Gulf states, to determine whether women in other nations behave differently when shopping online. 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 reveal direct and indirect effects, as well as online spending differences. The impact of additional factors, such as satisfaction, loyalty, and interactivity, and the moderating effect of different demographic factors, such as income, age, gender, regional and e-shopping experience, should be considered in further research.

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 quality and informative content, which reflect usefulness and enjoyment. Knowing consumer behavioral patterns is critical for improving customer acquisition, retention, and relationship penetration. Managers should work 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. According to the Pareto principle 80% of revenue from a customer base comes from 20% of the customers. Therefore, managers must identify and focus on higher spenders to retain them and generate more revenue.

To build sustainable, continued e-shopping relationships, managers cannot ignore either direct (perceived usefulness, enjoyment, subjective norms) or indirect (site quality, trust, perceived usefulness, subjective norms) influences on continuance intentions. Moreover, they should build positive word of mouth to enhance the perceptions of 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 will maximize the value of customer expenditures for mutual company/customer gain.

This study draws attention to the direct and indirect differences among high and low female e-shoppers' spenders in Saudi Arabia, which should influence any Web site development and marketing strategy. Understanding the online spending differences between consumers can help managers identify high spenders and 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.

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