
The driving factors of continuance online shopping: gender differences in behaviour among *students* – the case of Saudi Arabia

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Abstract: This study proposes a model of e-shopping continuance intentions combining the revised technology acceptance model and expectation confirmation theory, measuring student gender differences with regard to continuance online shopping intentions in Saudi Arabia. The results of an online survey (n = 234, 61.5% women, 38.5% men) are used in a structural equation model that confirms fit. Perceived usefulness, enjoyment, and subjective norms are determinants of online shopping continuance in Saudi Arabia. The structural weights are largely equivalent, but the paths from subjective norms to enjoyment and subjective norms to continuance intention (men) and perceived usefulness to continuous intention (women) are not supported.

The main contribution is to move beyond intentions to continuance. The model explains 71% of the intention to continue shopping online.

The results suggest that online strategies cannot ignore gender differences on continuance intentions. The model can be generalised across the main commercial regions of Saudi Arabia.

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

Reference to this paper should be made as follows: Al-maghrabi, T. and Dennis, C. (2012) 'The driving factors of continuance online shopping: gender differences in behaviour among *students* – the case of Saudi Arabia', *Int. J. Business Information Systems*, Vol. 9, No. 4, pp.360–384.

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This paper is a revised and expanded version of a paper entitled 'The driving factors of continuance online shopping: gender differences in behaviour – the case of Saudi Arabia' presented at European and Mediterranean Conference on Information Systems (EMCIS), Izmir, Turkey, 13–14 July 2009.

1 Introduction

Globalisation 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 has changed how businesses and customers customise, 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 (B2C) online sales in the USA grew by 120% between 1998 and 1999 (Shop.org and Boston Consulting Group, 2000). According to a UK 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. E-commerce transactions are also 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 Newspaper, 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).

Despite impressive online purchasing growth rates, compelling evidence indicates that many consumers who search different online retail sites abandon their intentions to purchase. Having continued customers or retaining existing customers are financial imperative for e-shopping business (e-vendors), especially as attracting new customers is considerably more expensive than for comparable, traditional, bricks-and-mortar stores and five times more than retaining existing ones (Bhattacharjee, 2001b; Crego and Schiffrin, 1995; Petrisans, 1999; Reichheld and Scheffer 2000). This trend and the proliferation of B2C e-shopping activities require that online businesses understand what and which factors encourage customers to complete their e-shopping behaviour or return to an e-shopping (e-vendors).

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 (Bhattacharjee, 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 (Bhattacharjee, 2001b; Crego and Schiffrin, 1995).

Theoretical explanations of online shopping intentions consider several factors. Rogers (1995) suggests that consumers re-evaluate acceptance decisions during a final confirmation stage and decide to continue or discontinue. Continuance may be an extension of acceptance behaviour that co-varies with acceptance (e.g., Bhattacharjee, 2001a; Davis et al., 1989; Karahanna et al., 1999). We adopt the extended expectation confirmation theory (ECT; Bhattacharjee, 2001b) and the technology acceptance model (TAM; Davis et al., 1989) as a theoretical basis, integrating ECT from consumer behaviour 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 et al. (1992) and Gefen et al. (2003), and the ECT (Bhattacharjee, 2001a; Oliver, 1980) have been used widely in research in the industrialised world, but they are less commonly applied to developing countries. Moreover, the TAM stops at intention and does not investigate continuance intentions or behaviour. Therefore, we consider that there is a need for more research into e-shopping continuance intentions, particularly in non-western contexts.

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 B2C 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 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 et al. (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 differences in gender shopping behaviour online in Saudi Arabia. Considering the extended TAM and ECT as a theoretical basis, the aim of this research is 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. Additionally, this research will reflect the gender e-shopping differences among students in the Saudi market.

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 (SEM) and analysis, we provide our results. We conclude with some limitations and recommendations for further research.

2 Theoretical background

The TAM (Davis, 1989) represents an adaptation of the TRA, tailored to users' acceptance of information systems. It helps to explain determinants of computer acceptance and can explicate user behaviours across a broad range of computing technologies and populations; it is also parsimonious and theoretically justified (Davis et al., 1989). The major determinants are perceived usefulness and ease of use. Perceived usefulness significantly influences attitude formation (Davis, 1989; Igbaria et al., 1995, 1996; Gefen and Keil, 1998; Agarwal and Prasad, 1999; Dishaw and Strong, 1999; Venkatesh, 2000; Venkatesh and Davis, 2000; Moon and Kim, 2001), but evidence regarding perceived ease of use remains inconsistent. Additionally, other research (e.g., Bhattacharjee, 2001a; Ma and Liu, 2004; Van der Heijden et al., 2003) indicates that ease of use has most effect on acceptance after a certain threshold. That is, with more experience, the impact of ease of use on intention declines. Because our research focuses on continuance intentions, we assume that all participants already have e-shopping experience, which implies that other factors may be more important than ease of use. Likewise, many studies simplify TAM by dropping attitude and studying just the effect of perceived usefulness and ease of use on intention to use (Teo et al., 1999; Gefen and Straub, 2000; Leader et al., 2000).

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 (Venkatesh, 1999; Teo et al., 1999; Davis et al., 1992; Leader et al., 2000; Moon and Kim, 2001).

ECT in turn helps predict consumer behaviour before, during, and after a purchase in various contexts, in terms of both product and service repurchases (Oliver, 1980, 1993; Swan and Trawick, 1981; Tse and Wilton, 1988; Anderson and Sullivan, 1993; Spreng et al., 1996; Patterson et al., 1997; Dabholkar et al., 2000). 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 (Oliver, 1980; Bhattacharjee, 2001a). Their repurchase intentions depend on their satisfaction with the product or service (Oliver, 1980; Anderson and Sullivan, 1993).

However, ECT ignores potential changes in initial expectations following the consumption experience and the effect of these expectation changes on subsequent cognitive processes (Bhattacharjee, 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 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. Hence, expectation in the original ECT is represented by perceived usefulness.

Venkatesh et al. (2003) suggest that usage and intentions to continue usage may depend on cognitive beliefs about perceived usefulness. Gefen et al. (2003) also indicates that perceived usefulness reinforces an online shopper's intention to continue using a website, 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 (Bhattacharjee, 2001a).

The continuance dominance influence of perceived usefulness has led Bhattacharjee (2001b) to include usefulness in his revised ECT. In a recent study by Premkumar and Bhattacharjee (2008), an interesting finding was found. As perceived usefulness is the strongest predictor of intention in TAM, it continues to be the strongest predictor of continuance intention over satisfaction when TAM combined with ECT while satisfaction was dominant in ECT (Premkumar and Bhattacharjee, 2008). The relative dominance of usefulness explains its role as critical driver in continuance decisions, particularly in building utilitarian (as opposed to hedonic) value (Premkumar and Bhattacharjee, 2008).

Site quality and good interface design enhance the formation of consumer trust (McKnight et al., 2002a). If a consumer perceives a vendor's website to be of high quality, he or she should trust that vendor's competence, integrity, and benevolence (McKnight et al., 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 website. Building trust with consumers is an essential mission for e-retailers, because purchasing decisions represent trust-related behaviours (Jarvenpaa et al., 2000; Urban et al., 2000; McKnight et al., 2002b).

Culture in Arab World countries such as Saudi Arabia is dominated by high collectivism and high uncertainty avoidance, i.e., an individual's beliefs depend on the social norms of the group (Kluckhorn and Strodtbeck, 1961). Additionally, other studies suggest that individuals place more trust in people similar to themselves and assess trustworthiness based on second-hand information and on stereotypes (Zucker, 1986; Morgan and Hunt, 1994; McKnight et al., 1998). In highly collectivistic cultures such as the Arab World, including Saudi Arabia, an individual's actions are typically influenced by the expectations of people around him/her, especially the group he/she identifies with. Therefore, if e-shopping is a socially desirable behaviour, a person is more likely to e-shop (George, 2002).

Research indicates that individuals who experience pleasure and joy from using the computer and perceive any activity involving the use of online shopping as inherently enjoyable, regardless of any anticipated improvement in performance, are likely to use it more extensively than others (Davis et al., 1992; Malone, 1981; Webster, 1989). Childers et al. (2001) also find that enjoyment can predict attitude towards e-shopping, just as much as usefulness can. Davis et al. (1989) found that while perceived usefulness emerged as the major determinant of computer acceptance in the workplace, enjoyment and fun had a significant effect beyond perceived usefulness. With regard to e-shopping, the hedonic enjoyment constructs in the extended TAM (Davis et al., 1992) and ECT (Lin et al., 2005) may reflect the pleasure users obtain from shopping online, which reinforces continuance intentions.

3 Proposed model and hypotheses

3.1 Site quality

Initial trust forms quickly on the basis of available information (Meyerson et al., 1996). If consumers perceive a website 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). Website quality helps predict behaviour (Carl, 1995; Business Wire, 1999; Meltzer, 1999). Perceptions of website quality affect trust and perceptions of usefulness. In addition, e-shoppers should perceive a website as more trustworthy if it appears more attractive because of its contents, layout, and colours, which represent site quality. On the basis of previous research, we therefore predict:

H1a Perceived site quality is positively related to perceived usefulness.

H1b Perceived site quality is positively related to customer trust in the use of online shopping.

3.2 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, 1957). Thus:

H2a Perceived trust is positively related to customer perceived usefulness.

3.3 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 website 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 (Bhattacharjee, 2001a). Consumers likely evaluate and consider product-related information prior to purchase, and perceived usefulness may thus 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; Hendrickson et al., 1993; Subramanian, 1994; Igbaria et al., 1995; Gefen and Straub, 1997; Gefen and Keil, 1998; Agarwal and Prasad, 1999), including e-commerce adoption (Gefen and Straub, 2000). Therefore:

H3a Perceived usefulness is positively related to increasing customer subjective norm.

H3b Perceived usefulness is positively related to increasing customer enjoyment.

H3c Perceived usefulness is positively related to increasing customer continuance intention.

3.4 *Subjective norm*

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 et al. (2001) find subjective norms only marginally significant on e-shopping intentions, whereas Foucault et al. (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 websites that are involving facilitate e-friendship and enforce e-shopping as a subjective norm. Thus:

H4a Perceived subjective norm is positively related to increasing customer enjoyment.

H4b Perceived subjective norm is positively related to increasing customer continuance intention.

3.5 *Enjoyment*

Enjoyment in using a website 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 website (O'Keefe et al., 1998), and perceived visual attractiveness have positive impacts on perceived enjoyment and continuance intentions (Van der Heijden, 2003). Additionally, the internet is one of the main environments for young people, such as students, to play, work, learn and communicate (Alreck and Settle, 2002; Spero and Stone, 2004), which suggests that enjoyment is a predictor of continuance intention. Thus:

H5 Perceived enjoyment is positively related to increasing customer continuance intention.

4 **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. We contacted potential respondents through e-mail invitations sent to members of seven universities and colleges, which put the survey link on their official websites to encourage students to participate. As a result, 234 students have completed the online survey.

Visitors to the online survey were invited to complete the survey in relation to an e-retailer from which they had recently shopped or purchased. The participants were then asked to indicate the degree to which each statement in the survey was characteristic of their thoughts and feelings.

Previous studies have shown that data collected directly from users rather than from service providers offers more accurate information about service characteristics and how they lead to higher quality evaluation in the context of e-shopping, especially given that customers' continuance intentions are best assessed through information obtained from the users themselves (Cao and Mokhtarian, 2005). Student samples are often criticised for containing a higher-than-average percentage of young people; however, online customers

commonly are younger and more highly educated than conventional customers, making a student sample more representative of the online customer population (OECD, 1998). Furthermore, using a student sample may represent the future e-shopping patterns in the population at large. Therefore, the profile of students is closer to that of the online customer population than is the profile of the population generally. Indeed, King and He (2006) confirmed by meta-analysis the value of using students over professionals in technology acceptance studies.

4.1 Measures

The value scales in the research were developed from previous published research, adapted to the context of online shopping if necessary. The online survey items used 1 to 7 Likert scales, on which 1 indicated strongly disagree and 7 strongly agree. The site quality and trust items were adopted from McKnight et al. (2002a, 2002b) and the perceived usefulness items from Gefen et al. (2003). Perceived enjoyment was drawn from Childers (2001), whilst Shih and Fang (2004) provided the subjective norm items. The continuance intention items were adapted from Yang and Peterson (2004).

The research instrument was pretested informally for reliability and clarity with 15 students in Saudi Arabia and 15 students in the UK who all had prior online shopping experience. These 30 students in the pretest were asked for their opinions of the survey in general, and the questions in particular. The pretest study suggested some clarifications to the survey and some questions were adjusted and rephrased to clarify certain constructs in both languages (Arabic and English). Both Arabic and English language versions were available. The Arabic questionnaire employed Brislin's (1986) back-translation method to ensure that the questionnaires had the same meaning in both languages.

4.2 Data analysis

Survey respondents were people who were actively engaged in internet and online shopping in Saudi Arabia, including undergraduate and postgraduate students. As we show in Table 1, the sample consists of 234 respondents in Saudi Arabia, 61.5% (144) of whom were women and 38.5% (90) men. Most respondents were in the younger age range, 126 (53.8%) between 18 and 25 for women and 75 (32%) for men; 13 (5.6%) were in the age of 26 to 35 for both men and women, and 5 (2.1%) for women and 2 (0.9%) for men were in the age of 36 to 45. This age range broadly reflects the profile of the young Saudi population, where 60% is younger than 30 years of age. The vast majority (94.4%) of respondents came from the three main regions in Saudi Arabia: 32% from the east, 26.1% from the central region, and 36.3% from the western region. Furthermore, women have the intention to spend more than men in Saudi Arabia. In the women's group, 19.2% intend to spend up to £500 whereas the figure is 12% for men; 23.9% of women participants and 14.1% of men intend to spend up to £1,000; and 12% of women vs. 9% of men intend to spend more than £1,000.

As we show in Table 2, 83 (35.5%) of the females used the internet in the previous six months to book flights and purchase airline tickets, compared to 47 (20.1%) respondents on the male group; 57 (24.4%) women respondents have made hotel reservations, compared to 28 (12%) for men; 38 (16.2%) for both genders have purchased clothing; 83 (35.5%) of women have bought books, compared to 51 (21.8%) for men; and 93 (39.7%) of women have bought CDs-DVDs, compared to 36 (15.4%) for men. In their

responses about why they used the internet, 134 (57.3%) women respondents indicated that they used it for information searches, compared to 77 (32.9%) for men; 107 (45.7%) of women participants have used to it for social communication, compared to 60 (25.6%) for men; 83 (35.5%) of women participants have used to it for banking, compared to 38 (16.2%) for men; 121 (51.7%) of women participants have used to it for entertainment, compared to 66 (28.2%) for men; 49 (20.9%) of women participants have used to it for work-related tasks, compared to 21 (9%) for men; and 116 (49.6%) of women participants have used to it for study-related efforts, compared to 71 (30.3%) for men. Both males and females trust international companies more than the local Saudi companies. Female participants dominated the male group in all categories. Security, quality, payment, and the language barrier are considered as an issue when conducting e-shopping in Saudi Arabia, as we show in Table 3.

Table 1 Sample demographics

	<i>Male</i>	<i>Female</i>
	<i>90 (38.5%)</i>	<i>144 (61.5%)</i>
Age		
Between 18–25	75 (32%)	126 (53.8%)
Between 26–35	13 (5.6%)	13 (5.6%)
Between 36–45	2 (0.9%)	5 (2.1%)
Internet spending		
None	8 (3.4%)	15 (6.4%)
SR100–1,000 (£100–500)	28 (12%)	45 (19.2%)
SR1,001–5,000 (£501–1,000)	33 (14.1%)	56 (23.9%)
> SR5,001 (£ > 1,001)	21 (9%)	28 (12%)
Income level		
< SR4,000 (£1,000)	23 (9.8%)	68 (29.1%)
SR4,000–SR6,000 (£1,000–2,000)	5 (2.1%)	13 (5.6%)
SR6,001–SR8,000 (£2,001–4,000)	3 (1.3%)	9 (3.8%)
SR8,001–SR10,000 (£4,001–7,000)	1 (0.4%)	0 (0.0%)
SR10,001–SR15,000 (£7,001–10,000)	1 (0.4%)	2 (0.9%)
> SR15,001 (> £10,000)	1 (0.4%)	7 (3%)
Dependent on others	56 (23.9%)	45 (19.2%)
Region		
East region	31 (13.2%)	44 (18.8%)
West region	32 (13.7%)	53 (22.6%)
Central region	25 (10.7%)	36 (15.4%)
North region	0 (0.0%)	6 (2.6%)
South region	2 (0.9%)	5 (2.1%)

Table 2 Items purchased online and reason for using the internet

<i>Items purchased in the last six months</i>	<i>Male</i>	<i>Percentage (%)</i>	<i>Female</i>	<i>Percentage (%)</i>
Buying books	51	21.8%	83	35.5%
Music CDs and DVDs	36	15.4%	93	39.7%
Clothes	38	16.2%	38	16.2%
Sports equipment	18	7.7%	31	13.2%
Travel reservation and ticketing	47	20.1%	83	35.5%
Hotel booking	28	12%	57	24.4%
<i>Reason for using the internet</i>				
Information search	77	32.9%	134	57.3%
Entertainment	66	28.2%	121	51.7%
Social communication	60	25.6%	107	45.7%
Work	21	9.0%	49	20.9%
Study	71	30.3%	116	49.6%
Purchasing	59	25.2%	120	51.3%
Banking	38	16.2%	83	35.5%
<i>Types of companies trusted</i>				
Local companies	9	3.8%	24	10.3%
International companies	36	15.4%	66	28.2%
Trust them both the same	45	19.2%	54	23.1%

Table 3 Important issues when shopping online

<i>Important issues to e-shoppers</i>	<i>Male</i>	<i>Percentage (%)</i>	<i>Female</i>	<i>Percentage (%)</i>
Security	72	30.8%	111	47.4%
Price	48	20.5%	91	38.9%
Service, delivery	53	22.6%	95	40.6%
Quality	71	30.3%	100	42.7%
Payment	59	25.2%	87	37.2%
Language barrier	46	19.7%	65	27.8%

Note: **Respondents can select more than one option.

4.3 Analysis

The scale reliability and validity were assessed, as well as the examination of the convergent and discriminant validity of the research instruments. The criterion for the minimum loading of 0.70 required for the inclusion of an item within a scale was applied (Fornell, 1982). Fornell and Larcker's (1981) criterion for average variance extracted (AVE) 0.50 or more was applied. The researcher also used the guidelines recommended by Hair et al. (2006) in determining the relative importance and significance of the factor loading of each item, (i.e., loadings greater than 0.30 are considered significant; loadings greater than 0.40 are considered important; and loadings 0.50 or greater are considered to be very significant). Finally, the criteria suggested by Nunnally (1978) were applied to determine the adequacy of the reliability coefficients obtained for each measure.

Table 4 Scale properties and correlations

<i>Model constructs</i>	<i>Mean</i>	<i>Std. dev.</i>	<i>Cronbach's alpha</i>	<i>Factor correlations</i>						
				<i>SQ</i>	<i>Trust</i>	<i>PU</i>	<i>SN</i>	<i>Enj</i>	<i>CIU</i>	
SQ	27.26	6.37	0.910	0.844						
Trust	21.90	5.14	0.943	0.652	0.867					
PU	33.26	7.93	0.938	0.708	0.654	0.886				
SN	28.54	9.55	0.945	0.291	0.292	0.446	0.909			
Enj	40.27	8.41	0.853	0.471	0.473	0.723	0.505	0.858		
CIU	32.02	8.12	0.956	0.442	0.443	0.678	0.577	0.817	0.927	

Note: Diagonal elements represent square root of the AVE value.

Table 5 Measurement model

<i>Constructs/indicators</i>	<i>S. factor loading</i>	<i>SE</i>	<i>CR.</i>	<i>AVE</i>	<i>Squared multiple correlation</i>
Site quality (SQ)				0.713	
SQ 1	0.916	0.074	14.226		0.84
SQ 2	0.796	0.069	13.714		0.63
SQ 3	0.816	0.068	13.872		0.67
SQ 4	0.841	-	-		0.71
Perceived usefulness				0.753	
PU 3	0.861	0.056	19.071		0.74
PU 4	0.857	0.054	18.300		0.73
PU 5	0.903	-	-		0.81
PU 6	0.870	0.053	19.224		0.73
Trust				0.785	
Trusting beliefs integrity 1	0.913	0.057	18.316		0.83
Trusting beliefs integrity 2	0.895	0.035	27.628		0.80
Trusting beliefs integrity 3	0.881	0.057	17.646		0.78
Trusting beliefs integrity 4	0.853	-	-		0.73
Subjective norm				0.827	
SN 3	0.797	-	-		0.63
SN 4	0.971	0.069	18.472		0.94
SN 5	0.935	0.071	16.784		0.87
SN 6	0.934	0.071	17.542		0.87
Enjoyment				0.737	
Enj 4	0.668	-	-		0.51
Enj 5	0.921	0.108	12.322		0.85
Enj 6	0.903	0.111	12.287		0.81
Enj 8	0.891	0.109	11.814		0.79
Continuance intention				0.860	
CIU 1	0.841	0.039	21.784		0.71
CIU 2	0.925	0.031	31.003		0.86
CIU 3	0.973	-	-		0.95
CIU 4	0.957	0.026	37.771		0.92

Discriminant validity, which assesses whether individual indicators can adequately distinguish between different constructs, is assured if the square root of AVE for each construct is greater than the correlation between the measures of potentially overlapping constructs (Fornell and Larcker, 1981).

The internal consistency reliabilities Cronbach’s alphas (Table 4) are all greater than 0.7, exceeding the recommended values in Bagozzi and Yi’s (1988) guidelines. The correlation matrix in Table 2 indicates that the square root of the AVE of each construct is higher than the corresponding correlation values for that variable, thereby assuring discriminant validity. Consistent with the recommendation of Bagozzi (1994), Byrne (2001), and Hair et al.(2006), the squared multiple correlation exceeded the cut-off point of 0.7, and the average variance extracted exceeded the cut off-point is 0.5 (Table 5). We thus confirm the convergent reliability and discriminant validity.

5 Structural equation model

Harris and Schaubroeck (1990) recommended a minimum sample size of 200 in order to guarantee robust structural equation modelling, whereas group sizes down to 90 are considered acceptable for multiple group analysis. As the first step in testing the proposed model, which operationalises 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).

Table 6 Regression weights

<i>Hypotheses</i>		<i>Paths</i>		<i>Standardised regression weights (B)</i>	<i>Standard error S.E.</i>	<i>Critical ratio C.R.</i>	<i>P value</i>	<i>Hypotheses findings</i>
H1a	PU	<---	SQ	.379	.084	4.695	***	Supported
H1b	Trust	<---	SQ	.708	.066	10.486	***	Supported
H2	PU	<---	Trust	.385	.087	4.740	***	Supported
H3a	SN	<---	PU	.446	.073	6.549	***	Supported
H3b	Enj	<---	PU	.622	.053	8.290	***	Supported
H3c	CIU	<---	PU	.147	.069	2.368	.018	Supported
H4a	Enj	<---	SN	.227	.038	3.857	***	Supported
H4b	CIU	<---	SN	.205	.048	4.356	***	Supported
H5	CIU	<---	Enj	.607	.124	7.734	***	Supported

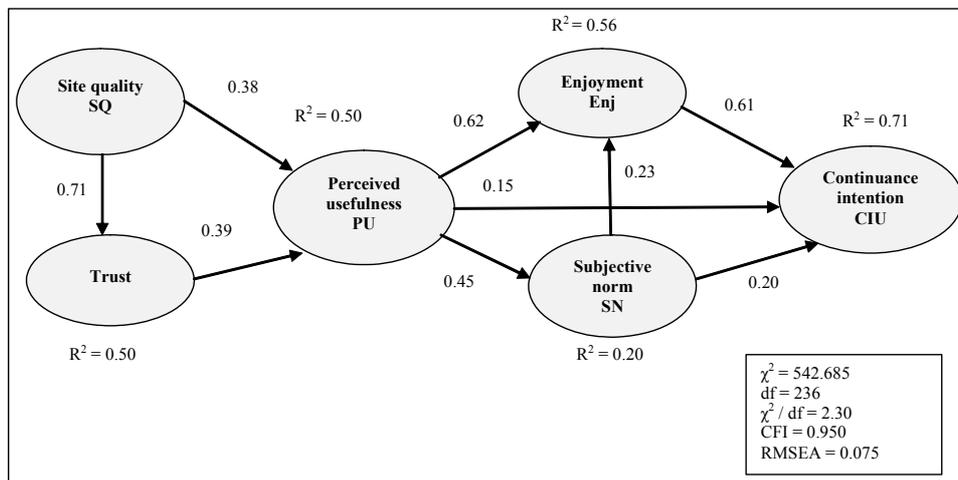
A SEM with AMOS 5.0 software determines additional goodness-of-fit indices, including critical ratio (CR), Chi-square (CMIN), degrees-of-freedom (df), Chi-square/degrees-of-freedom (CMIN/DF), root mean square residual (RMR), root mean square error of approximate (RMSEA), goodness-of-fit (GFI), comparative fit index (CFI), normal fit index (NFI), incremental fit index (NFI), relative fit index (RFI). In general, GFI, NFI, RFI, IFI, and CFI greater than 0.90 indicate good model fit (Bentler, 1989). As illustrated in Table 6, all the hypotheses are statistically significant and supported,

with critical ratios ranging from 10.486 to 2.368, 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 = 542.685, df = 236, CMIN/DF = 2.300, RMR = 0.238, GFI = 0.841, CFI = 0.950, RMSEA = 0.075, NFI = 0.916, IFI = 0.951, and RFI = 0.902.

Table 7 Goodness-of-fit indices

	Acceptable values	Value
Chi-Square CMIN	NA	542.685
Degree of freedom	NA	236
CMIN/DF	Chi square/ df ≤ 5 (Bentler and Bonnett, 1989)	2.300
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)	0.238
Goodness-of-fit (GFI)	≥ 0.90 (the higher the better) (Hair et al., 2006)	0.841
Comparative fit index (CFI)	≥ 0.90 (Hair et al., 2006)	0.950
Root mean square error of approximate (RMSEA)	< 0.08 (Hair et al., 2006)	0.075
Normal fit index (NFI)	≥ 0.90 (Hair et al., 2006)	0.916
Incremental fit index (IFI)	≥ 0.90 (Hair et al., 2006)	0.951
Relative fit index (RFI)	≥ 0.90 (Hair et al., 2006)	0.902

Figure 1 Internet continuance intention shopping model in Saudi Arabia



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 standardised regression weights, standard error, and critical ratio for each path. Table 5 illustrates the standardised regression weights, standard errors, and critical ratios. The hypothesised associations are strongly significant at $p = 0.000$. Perceived

enjoyment is the strongest predictor of continuance intention ($\beta = 0.607$), followed by subjective norms ($\beta = 0.205$), and then perceived usefulness ($\beta = 0.147$). The model explains 71% of the variance in continuance intentions (Figure 1).

5.1 Invariance analysis

When comparing cultures or groups, research participants may not recognise the same meaning and understanding of survey items. Scholars thus have emphasised the importance of minimising possible research biases in cross-national and cross-cultural research derived from the data collection (Yi et al., 2008). To minimise the bias, we applied back-translation (Brislin, 1986). In addition, we assess the measurement invariance (equivalence) across the groups to consider the constructs' factorial invariance (Cheung and Rensvold, 1999).

The invariance analysis indicates whether any differences occur between genders. The factorial analysis reveals whether men and women conceptualise the model constructs the same way. If we find a gender 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.

Table 8 Goodness-of-fit indices (male – female)

<i>Confirmatory factor analysis CFA (goodness-of-fit measure)</i>	<i>Acceptable values</i>	<i>Value</i>
Chi-square CMIN	NA	912.028
Degree of freedom	NA	472
CMIN/DF	Chi square / $df \leq 5$ (Bentler and Bonnett, 1989)	1.932
P value	$p \leq 0.05$ (Hair et al., 2006)	0.000
Root mean square residual (RMR)	No established thresholds (the smaller the better) (Hair et al., 2006)	0.244
Goodness-of-fit (GFI)	> 0.90 (the higher the better) (Hair et al., 2006)	0.766
Comparative fit index (CFI)	> 0.90 (Hair et al., 2006)	0.931
Root mean square error of approximate (RMSEA)	< 0.08 (Hair et al., 2006)	0.063
Normal fit index (NFI)	≥ 0.90 (Hair et al., 2006)	0.869
Incremental fit index (IFI)	≥ 0.90 (Hair et al., 2006)	0.932
Relative fit index (RFI)	≥ 0.90 (Hair et al., 2006)	0.847

To compare the male and female samples, we use factorial invariance (metric equivalence) to assess the extent to which measures from both groups have the same meaning (Hair et al., 2006). The CMIN = 912.028, $df = 472$, CMIN/DF = 1.932, RMR = 0.244, CFI = 0.931, and RMSEA = 0.063, indicate outstanding goodness-of-fit indices across the groups (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 ($\Delta \chi^2$) = 14.608, and $p = 0.689$, 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 ($p = 0.689$). Therefore, the goodness-of-fit indices are comparable across age groups, supporting the invariance of the unconstrained and constrained models. We thereby establish metric equivalence and can proceed in our analysis to regression paths.

Table 9 Invariance analysis (male and female)

<i>Model</i>	Δdf	$\Delta\chi^2$	<i>p</i>
Measurement weights	18	14.608	0.689
Structural weights	9	14.221	0.115

Table 10 Invariance analysis of regression weights between the constructs for males vs. females

<i>Paths</i>	<i>Male sample</i>			<i>Female sample</i>			<i>Invariance</i>		
	<i>RW</i>	<i>CR</i>	<i>P value</i>	<i>RW</i>	<i>CR</i>	<i>P value</i>	ΔDF	$\Delta CMIN$	<i>P value</i>
PU <--- SQ	0.330	3.492	***	0.493	3.740	***	1	1.025	0.311
Trust <--- SQ	0.616	6.865	***	0.712	7.625	***	1	0.551	0.458
PU <--- Trust	0.497	5.032	***	0.288	2.135	0.033	1	1.559	0.212
SN <--- PU	0.669	4.982	***	0.368	4.319	***	1	3.763	0.052
Enj <--- PU	0.536	5.701	***	0.384	6.142	***	1	1.914	0.166
CIU <--- PU	0.317	2.116	0.034	0.127	1.710	0.087	1	1.303	0.254
Enj <--- SN	0.067	1.327	0.184	0.211	3.837	***	1	3.663	0.056
CIU <--- SN	0.125	1.677	0.094	0.259	4.037	***	1	1.845	0.174
CIU <--- Enj	0.763	3.595	***	1.016	6.631	***	1	0.891	0.345

Table 11 Means: (male – default model) – for the gender sample (male – female)

	<i>Estimate</i>	<i>SE</i>	<i>CR</i>	<i>P</i>
PU	-.039	.148	-.263	.793
Trust	-.129	.143	-.904	.366
Enj	-.029	.138	-.209	.835
CIU	.005	.151	.035	.972
SQ	-.018	.141	-.126	.900
SN	.033	.146	.226	.821

The regression paths invariance analysis determines if male and female respondents have the same relationships with same variables in the research model. The findings in Table 9 suggest overall coefficient invariance between men and women across the research model with all regression paths constrained ($\Delta\chi^2 = 14.221$, $\Delta df = 9$, $p = 0.115$). Despite the lack of overall coefficient invariance, we consider the relationships between model constructs individually for any non-invariance. The findings in Table 10 indicate that men and women are non-invariant in certain relational paths. The coefficient of perceived usefulness \rightarrow continuance intentions is greater for men than for women. Additionally, the coefficients of subjective norm \rightarrow perceived enjoyment and subjective norm \rightarrow continuance intentions are not significant for men and indicate greater influence of subjective norm for women than for men. These findings confirm Venkatesh's et al. (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 own evaluations of the usefulness of the technology.

The results of the latent mean analysis appear in Table 11, indicating that the mean values of all of the constructs are invariant between males and females (Hair et al., 2006)

5.2 Direct and indirect effect analysis

The direct and indirect (mediated) effects in Table 12 reveal that the greatest total influences on continuance intentions come from perceived usefulness for both the male (0.743) and female (0.636) samples. The next greatest influences come from site quality (0.521) for men and enjoyment (0.425) for women. Additionally, trust has more influence (0.391) on continuance intention for males than females (0.156). Site quality, trust, perceived usefulness, and subjective norm all play significant roles for online shopping continuance intentions in Saudi Arabia for both men and women.

Table 12 Direct and indirect influences on CIU

Construct	CIU (male)			CIU (female)		
	Direct	Indirect	Total	Direct	Indirect	Total
SQ	-	.521	.521	-	.392	.392
TRUST	-	.391	.391	-	.156	.156
PU	.279	.465	.743	.117	.519	.636
SN	.136	.056	.192	.233	.192	.425
ENJ	.489	-	.489	0.639	-	0.639

6 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 behavioural gender differences among students in Saudi Arabia. The online field survey validates the hypothesised 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 71% of continuance e-shopping intentions. The research model provides some interesting results. Unlike findings from developed countries that show perceived usefulness and satisfaction to be the dominant predictor of intention or continuance intention (Davis, 1989; Taylor and Todd, 1995; Igbaria et al., 1996; Gefen and Keil, 1998; Agarwal and Prasad, 1999; Dishaw and Strong, 1999; Moon and Kim, 2001; Venkatesh, 2000; Venkatesh and Davis, 2000; Premkumar and Bhattacharjee, 2008), the results of this study indicate that perceived enjoyment is the strongest predictor, which motivates individuals continuance intention to use e-shopping (see Table 6; standardised regression weight ($\beta = 0.607$, $CR = 7.734$). Subjective norm (social pressure) ($\beta = 0.205$, $CR = 4.356$), and perceived usefulness ($\beta = 0.147$, $CR = 2.368$) are shown to be the next factors, which influence continuance intention usage. In addition, trust and site quality have strong indirect influence on continuance intention e-shopping usage. The dominance of enjoyment over perceived usefulness in predicting continuance intention to use e-shopping in the context of Saudi Arabia could

be because thousands of websites provide similar services in terms of usefulness and benefits. Therefore, attracting and retaining users by providing an enjoyable and playful e-shopping site has become very important.

Enjoyment as the strongest predictor of continuance e-shopping in Saudi Arabia, particularly for females, which is in line with prior findings that women tend to accept technology based on their hedonic experiences [and also on the opinions of others (Teo et al., 1999; Venkatesh et al., 2000)]. Additionally, Childers et al. (2001) also find that enjoyment can predict attitude towards e-shopping, just as much as usefulness can. With regard to e-shopping, the hedonic enjoyment constructs in the research model may reflect the pleasure users obtain from shopping online, which reinforces continuance intentions.

However, these findings are consistent with previous research 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 own evaluations of the usefulness of the technology (e.g., Davis et al., 1989; Taylor and Todd, 1995; Teo et al., 1999; Venkatesh et al., 2000; Bhattacharjee, 2001a; Childers et al., 2001; George, 2002; Shih and Fang, 2004; Venkatesh et al., 2003). Enjoyment, perceived usefulness, and subjective norms have positive influences (direct or indirect) on consumers' continuance e-shopping intentions.

The measurement weights of the male and female groups are invariant. Testing for factorial regression paths invariance, we find that the relationship path between site quality \rightarrow trust; site quality \rightarrow perceived usefulness; trust \rightarrow perceived usefulness; perceived usefulness \rightarrow enjoyment; perceived usefulness \rightarrow subjective norms; and enjoyment \rightarrow continuance intentions are similar for both genders in Saudi Arabia. However, for female participants, the perceived usefulness \rightarrow continuance intentions path is not supported. On the other hand, for males the subjective norms \rightarrow enjoyment; and subjective norms \rightarrow continuance intentions paths are not supported. That is, men are more influenced by evaluations of the utilitarian usefulness of technology, whereas women tend to accept technology based on their hedonic experiences and the opinions of others (Teo et al., 1999; Venkatesh et al., 2000).

Site quality and trust are strong antecedents of perceived usefulness (site quality $\beta = 0.379$, CR = 4.695; trust $\beta = 0.385$, CR = 4.740). Both site quality (0.521) and trust (0.391) have large indirect effects on continuance intentions. These findings are consistent with the collectivist culture of Saudi Arabia, where people tend to trust only those within their in-group (Yamagishi and Yamagishi, 1994). Furthermore, 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 act through perceived usefulness, subjective norms, and enjoyment. This model pertains to post-purchase behaviour after a first-hand e-shopping experience. If initial trust and usefulness expectations are confirmed, other people in the consumer's social circle may be encouraged to use and enjoy the site.

7 Conclusions and contribution

From a theoretical standpoint, these research 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 in Saudi Arabia. We also posit that enjoyment, subjective norms, and perceived usefulness have direct and

indirect effects on continuance intention. The greater positive indirect effects of site quality on perceived usefulness, subjective norms, and enjoyment and 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. For example, if a new customer is more likely to judge a website by its appeal reflecting its quality and trustworthiness rather than its usability, then e-retailers need to pay attention to increasing the appeal of their sites. Furthermore, e-retailers should emphasise their trustworthiness by (e.g.) marketing their robust security and policies measures, adding a frequently asked questions (FAQ) section and including statements such as 'secure servers' (Gehrke and Turban, 1999).

Continuance intention to use a technology such as e-shopping is not only determined by subjective norms, but also by users' needs to build relationships with others inside the online social communities (Schau and Gilly, 2003). According to Wilska (2003, p.459), the customer's relation to technology would impact the whole of consumers' lifestyles. To have a significant effect on e-shopping continuance intentions, any e-shopping environment should encourage a shopping experience that is useful and enjoyable. Customers' involvements in the product design process are likely to be perceived as more enjoyable, e.g., Nike (<http://www.nike.com>) online shoppers can customise shoes, colours, styles, and even select a name or message. Similarly, communications on useful offers or products, as available with shopping social networking sites such as Osoyou (<http://www.osoyou.com>) are likely to be perceived as a useful way of sharing life with friends and relatives.

Second, the results support previous findings that perceived usefulness reflects the utilitarian aspects of online shopping, whereas 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 the effect is direct. For instance, if an individual 'feels good' about an online activity, it is intrinsically motivating, and the individual is more likely to engage in it. Individuals using an online shopping site and experiencing enjoyment and playfulness are more absorbed and interested in the interaction. Such interaction shapes the individual intention to visit online shopping again later.

Moreover, this result demonstrates that perceived usefulness had a strong total 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 consumers in selecting and continuing to use online stores and can increase customer satisfaction. Consumers may continue using an e-commerce service that they consider useful, even if they are dissatisfied with it (Bhattacharjee, 2001a).

Third, in the context of Saudi Arabia, few prior studies use SEM as their methodological approach, and even fewer apply invariance analysis to verify behavioural gender differences with a sample obtained from Saudi Arabia. Our model addresses this knowledge gap and provides an improved explanation of behavioural differences in continuance e-shopping intentions in Saudi Arabia. Moreover, the model contributed to an understanding of the factors that encourage consumers to increase their continuance shopping intention. Another key conclusion from this study is the importance of both the direct and indirect effects of gender differences among students in Saudi Arabia, which

should be taken into consideration when developing any website and marketing strategy for e-retailing.

8 Research limitation and future research

Typical of most field surveys, this study suffers some limitations. First, the innovative use of an online survey in the Saudi Arabian market may lead to a novelty effect bias. Second, the online survey was posted with permission on Saudi universities' online forums. The survey may thus suffer from a non-response bias, and there is no systematic way to test for the response rate. Nevertheless, we consider that the potential biases are outweighed by the access to a substantial sample spread across the main regions of the country.

In the online context of Saudi Arabia; further research could usefully include finding ways to appeal to both hedonic and utilitarian shoppers, especially within the large younger segment of the population. This research demonstrates that the well-established TAM can be integrated with ECT, a finding which leads us to call for additional, future research related to continuance intentions, such as comparisons of new e-shoppers vs. continuing users who have more internet knowledge and experience.

The impact of additional factors, such as satisfaction, loyalty, and interactivity, and the moderating effect of other demographic factors such as income, age, and regional location, should be considered in future research investigations.

Finally, in line with the current interest in cross-cultural research, we recommend that the research model should be tested in other cultures, particularly those that may have parallels with Saudi Arabia, such as the Gulf Regions.

9 Managerial implications

This study provides managers with useful and important information about planning their websites and marketing strategies. Limayem et al. (2000) argue that providing and managing accurate information with clear and brief text attached with the appropriate images is essential and comprises the primary role of web designers and marketers. Thus, managers and site developers should focus on the quality and informative content, which reflect usefulness and enjoyment in order to minimise churn.

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 website's usefulness, site quality, interactivity, and enjoyment, which can increase perceptions of the firm's trustworthiness. Moreover, significant effects of subjective norms on enjoyment and continuance intention suggest that recommendations from other people still play a major role in an individual's e-commerce continuance intention behaviour. Therefore, managers should endorse and facilitate positive word of mouth, through social networks such as Blogger, Delicious, Facebook, Google Bookmarks, MySpace, Twitter, and many more, to enhance family, friends, potential customers, and actual customers' perceptions about their websites' usefulness and trustworthiness.

This study draws attention to the direct and indirect gender differences in Saudi Arabia, which should be taken into consideration when developing any website and marketing strategy. Saudi e-retailers should emphasise the usefulness (utilitarian values) of their websites in their marketing strategy when communicating with men, whilst emphasise their enjoyment (hedonic values) when designing their marketing mix for women. Finally, understanding the differences between male and female 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.

Acknowledgements

The authors would like to thank the respondents from the different regions of Saudi Arabia, UK and particularly the editors and anonymous reviewers for their many helpful suggestions. Special thanks to our families for their continued support.

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