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Investigation of psychological dimensions of trust on e-loyalty
A case of Saudi Arabia consumers

Afshan Azam

College of Business Administration, Dar Al Uloom University, Riyadh, Kingdom of Saudi Arabia

Abstract

Purpose – The purpose of this paper is to integrate extant literature on psychological dimensions and trust to develop a model of consumer e-loyalty.

Design/methodology/approach – This paper develops four important psychological-based factors impacting consumer trust and e-loyalty: perception-based, experience-based, knowledge-based and attitude.

Findings – The results of this paper propose that perception-based and experience-based factors are the main determinants of consumer trust and e-loyalty in e-retailing. Consumers do consider information practices.

Research limitations/implications – This paper has attempted to shed some light on the psychological antecedents of consumer trust in e-retailing but still missed some important antecedents for example personality. An option for "not applicable" as an answer choice was not provided in the survey instrument. It is hard for a participant to provide accurate information about his/her past experience that happened three months ago in a self-reported method.

Practical implications – From a theoretical perspective, the psychological-based consumer trust decision-making model provides a holistic view of an online consumer's purchase decision-making process and e-loyalty. From a practical standpoint, the paper identified a number of potentially important psychology determinants of consumers' trust in a website and empirical evidence concerning the relative impact of each of these determinants on consumers' trust and e-loyalty.

Originality/value – To date, this is the first research that has been conducted to analyse psychological dimensions of trust in e-retailers and its influence on e-loyalty by using partial least squares in Saudi Arabia e-commerce research.

Keywords Islamic markets, Islamic e-marketing, The Muslim consumer, The Muslim consumption pattern

Paper type Research paper

1. Introduction

The importance of loyalty has been a critical issue in the study of online retailing. E-loyalty is widely defined as customer's favourable attitude and commitment towards the online retailer that results in repeat purchase behaviour (Srinivasan *et al.*, 2002). As a result, e-loyal customers bring increased profitability to the online retailer through long-time customer commitment and reduced costs of acquiring new customers

(Reichheld *et al.*, 2000). E-loyal customers are not the ones seeking the lowest prices, but the ones willing to pay premium prices. They also tend to refer new customers to the online retailer, providing rich potential sources of profit (Reichheld *et al.*, 2000). Further, e-loyal customers purchase more than newly acquired customers and can be served with reduced operating costs (Van Riel *et al.*, 2001). Therefore, even though the cost of establishing online loyalty is larger than that of traditional brick-and-mortar retailers, profit growth accelerates at an even faster rate *once* the relationship has been built (Reichheld *et al.*, 2000). These previous findings point to the need for understanding how e-loyalty is developed.

In explaining the establishment of e-loyalty, trust (Reichheld and Schefter, 2000) is found to play a pivotal role. For example, studies discovered that trust influence e-loyalty either individually, such as trust → e-loyalty (Sirdeshmukh *et al.*, 2002), or in a sequential order, such as e-trust → e-satisfaction → e-loyalty (Gummerus *et al.*, 2004). As research on trust has been conducted from a variety of disciplinary perspectives, many definitions of trust have evolved. Trust, according to Rousseau *et al.* (1998), is defined as: "[…] a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another".

This definition depicts trust as a mindset, which encourages a person to take risk because of positive expectations (loyalty). For loyalty, the consumers consider that recommendation to others is the most important observed variable (Carter *et al.*, 2012). However, religion has long been playing a significant role in influencing human behaviour and is a significant element of trust in online purchasing decisions (Essoo and Dibb, 2004). This study explores the role of psychological dimensions of Muslim consumers as a factor of trust with the key emphasis being on loyal. Consumer trust in business-to-consumer (B2C) e-commerce context can vary with culture even if they are associated to any religious group. Religion is an observable model of an antecedent to trust (Siala and Siddiqui, 2004). Cultures have different preferences associated with their cultural beliefs concerning the religious attitude. For that reason, the relationship between religion and interpersonal trust in the B2C context is of central importance towards understanding purchasing intentions at the individual level. The significance of religion has been recognized in sociology and psychology (Amin *et al.*, 2014) but has not yet been recognized in B2C e-commerce.

Muslim consumers in Saudi Arabia, Indonesia, Pakistan and Egypt placed Nestle, Lipton and Kraft among the top five Muslim-friendly brands, while banks and insurance firms came at the bottom, according to the Noor Brand Index (Ogilvy and Mather, 2010a, 2010b). Muslim consumers who comprise a large untapped market of 1.8 billion perceive brands based not only on whether they are halal or not, but also on ethical grounds. Tanya Dernaika, Strategic Planning Director, Memac Ogilvy & Mather, said: "Having an Islamic consultancy is important because a lot of the multinationals still do not know much about Islam". Muslim consumers aspire to be perceived as modern without having to be Westernized, Dernaika said: "Around 65 per cent of the respondents said they took pride in being Muslims, but Muslim consumers want to prove they can integrate faith into their modern lifestyle" (Ogilvy and Mather, 2010a, 2010b). According to Wilson and Grant (2013), Islamic marketing represents a new focal-phase torchbearer, as a conspicuous and necessary challenger strain resistant to convention, ensuring fit for purpose marketing – just as "Green" and "Digital" marketing have previously and continue to do so. And so in principle, Islamic marketing could become another new

strain of marketing (Wilson and Grant, 2013). Wilson and Grant's (2013) key argument asserts that Islamic marketing need not be thought to be derived directly from Islamic faith, but rather filtered through more worldly actors and activities by Muslims and non-Muslims alike; as part of a natural phenomenon, where marketing moves through evolutionary and revolutionary phases of meaning and practice – to maintain its relevance and efficacy within new environments.

Having different views and research about Islamic marketing and Muslim consumer behaviour, this paper investigates whether psychological dimensions of trust have any influence on online consumer based on their faith or not? How exactly are these positive expectations (loyalty) formed? Is trust determined by a person's personality or is a more cognitive, perception-based explanation appropriate? Is trust also the acquired knowledge of prior experience with e-retailing? However, despite the proven importance of trust on e-loyalty, the study of their antecedents has only been partially understood in the e-loyalty development process. Here an attempt to identify the set of psychological antecedents of consumer trust and impact on loyalty in e-retailing is made.

The purpose of this study is to propose and test a model of the e-loyalty development process for online retailers, incorporating psychological antecedents of trust. This study strengthens the literature by adding psychological antecedents of trust as possible critical antecedents in the model of e-loyalty development and attempts to build a stronger holistic model. This study fill the gap in e-commerce research by including the unsuccessful purchasing experiences; most studies in the e-commerce environment have collected data concerning a consumer's successful purchasing experiences in Saudi Arabia. Yet, because successful cases represent only a fraction of all consumer transaction behaviours, these past studies may have painted an incomplete picture (i.e. a biased view) of B2C electronic commerce transactions. Accordingly, in the present study, a research design that enables respondents to examine transaction experiences that resulted in non-purchases in addition to completed purchases. In other words, study collected data from both "successful" cases and "unsuccessful" cases, and therefore can provide a more complete picture of a consumer's B2C decision-making process. Finally, the findings of this study provide several insights which should help practitioners better understand the role of trust and its psychological antecedents in e-commerce, and ultimately add e-loyalty-building mechanisms into e-retailers' websites.

This research focuses on consumers' attitude and behaviour towards retailers operating online, not a brand or manufacturer. Within the model, the author maintains distinct aspects of trust, which, in turn, lead to customer e-loyalty.

2. Characteristics of Saudi Arabian consumers

With increasing Internet access, the use of e-commerce services by the population is booming globally and locally in Saudi Arabia. The most recent estimate of e-commerce spending in Saudi Arabia (taken in 2010) is SR12 billion (The Arab Advisors Group, 2009), the largest in the Arab world. According to (Central Department of Statistics and Information, 2013), the currently estimated population of Saudi Arabia is around 29,994,272. It has been reported by The Arab Advisors Group (2009) that Saudi Arabia's IT sector is growing at a rate of 9.3 per cent. Furthermore, the report showed that 3.5 million Internet users or 14.26 per cent of the Saudi population were engaged in e-commerce transactions. The results of the report indicate the country's emergence as

an ideal market for e-commerce activities among the developing countries in the Middle East region. Brendon Ogilvy, Regional Director of Mena, Effective Measure, said:

> Forums are huge, particularly in Saudi Arabia. Saudis resort more to online communications because of the cultural and social restrictions. Some of the largest websites in Saudi Arabia are forum-based, including Hawaa World. According to our analytics, Hawaa World attracts close to 200,000 unique users a day, primarily females (Ogilvy and Mather, 2010a, 2010b).

3. Psychological dimensions of consumer trust in e-retailing

Trust has been studied through these different disciplinary lenses; previous research related to trust in the e-commerce context tends to be disjointed, case-specific and/or loosely integrated. For example, most studies on technological trust have focused narrowly on issues of privacy, security, public key infrastructure and other technical aspects of trust (Hanzaee and Alinejad, 2012), Some recent studies (Cyr, 2013) have focused on the social and behavioural elements of trust in an e-commerce context; however, these were again narrowly focused (e.g. they focused on a limited number of trust antecedents, or focused on trust in the community of sellers as a group), and therefore, researchers have not yet developed a comprehensive understanding of the factors that predict consumer trust on e-loyalty in the e-commerce context. Given the increasing prevalence of B2C Internet commerce, there is an urgent need to analyse an online consumer's decision-making process from a holistic standpoint which can provide an understanding of the complex and dynamic phenomena of trust in online exchanges. Finally, psychological factors were found to have association with trust (Valvi and West, 2013). Valvi and West (2013) findings have significant implications as previous investigations of the link between psychological factors and online consumers trust.

The psychological factors that have an influence on trust in general must first be identified but because there is no comprehensive theory, several theories are combined here to form a more complete picture of factors influencing trust. To simplify, this study has grouped the antecedents into four categories:

(1) perception-based factors (PBFs);

(2) experience-based factors (EBFs);

(3) knowledge-based factors (KBFs); and

(4) attitude.

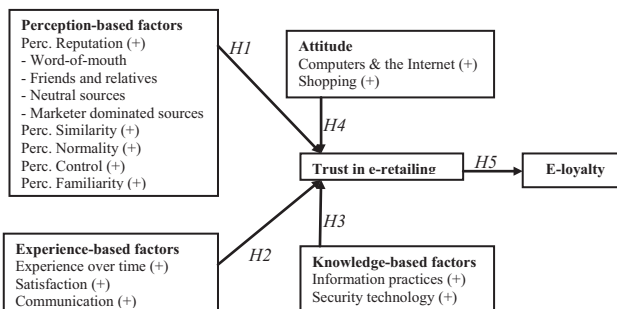These are split up into several factors. Figure 1 depicts the hypothesized effects.

Figure 1.
Proposed research
model

3.1 Perception-based factors

Several scholars (Jarvenpaa and Tractinsky, 1999; Nissenbaum, 2001) have investigated the influence of consumer perception of certain aspects of e-retailers on trust. Here, the various theories were combined and five factors that have been shown to have an influence are included:

(1) perceived reputation of e-retailer;

(2) perceived similarity of e-retailer;

(3) perceived normality of e-retailer;

(4) perceived control of consumer; and

(5) perceived familiarity of consumer.

Reputation is based, at first, on second-hand information about a (potential) seller's traits. This is not as assuring as first-hand information, which is collected during a history of experience with e-retailing. However, the reputation of an e-retailer is likely to influence a buyer's trust towards the e-retailer (Jarvenpaa *et al.*, 2000). According to McKnight *et al.* (2002), sellers with a good reputation are seen as trustworthy and those with a bad reputation as untrustworthy. According to Mitra *et al.* (1999), information sources can be classified into three categories:

(1) consumer-dominated (word-of-mouth; information from friends and relatives);

(2) neutral; and

(3) marketer-dominated (items being ordered according to their level of importance).

If perceived reputation has an influence on consumer trust, then second-hand information is supposed to have an influence on consumer trust also. Ba (2001) calls trust built upon information from consumer-dominated sources "transference based trust", and he explains that if a buyer receives second-hand information from a trusted person, he will use this to define the e-retailer as trustworthy. Likewise, positive information from marketer-dominated sources positively influences consumer trust.

Perceived similarity means that one perceives the other as being similar to oneself. Perceived similarity is believed to have a positive influence on trust, because people grouped together tend to have the same goals and values and, therefore, tend to perceive each other positively. Thus, consumers who perceive Internet merchants to be similar to them will be more likely to trust these merchants.

Perceived normality is defined as the consumer's perception of the buying process as being normal or common. Situational normality depicts a properly ordered setting that seems to enable successful interaction. According to McKnight *et al.* (2002), an individual who perceives a situation as being normal will feel more comfortable and hence will be more trustful towards the other.

Deutsch (1958) defines control as "the consumer's perceived power to influence the other person's outcome and hence to reduce any incentive he may have to engage in untrustworthy behaviour". McKnight *et al.* (2002) have identified three control mechanisms: regulations, guarantees and legal recourse. These increase consumers' perceived control and hence their confidence in e-retailing. When a consumer feels that he or she has some power to influence the outcome of the transactions, he or she is more

likely to expect trustworthy behaviour and thus to trust the other person (Young and Wilkinson, 1989).

As Brehm *et al.* (1998) state, familiarity is the phenomenon that suggests that the more often that people are exposed to a certain stimulus, the more positively they will evaluate and therefore trust it. Furthermore, when dealing with an unknown vendor, consumers are more concerned about privacy, and therefore less likely to trust as Gefen *et al.* (2000) argue. In contrast, increased familiarity means a better understanding of the transaction process with the e-retailer; this increases consumer trust. It should be stated that familiarity is not the same as experience over time. Experience results from active interaction with a process, while familiarity is the result of mere exposure to a person, a store or an event.

In sum, all PBFs are thought to influence consumer trust in a positive way. This yields the first hypothesis:

H1. Positive assessments of PBFs such as perceived investment, perceived similarity, perceived normality, perceived control and perceived familiarity have a positive influence on consumer trust in e-retailing (TER).

3.2 Experience-based factors

Experience is defined as first-hand knowledge. This is accumulated through active participation of the consumer in the online buying process (Wordsmyth Experience, 1999).

The following three experience-related aspects are important:

(1) experience over time;
(2) satisfaction; and
(3) communication.

Ganesan (1994) and McKnight *et al.* (2002) have proposed that trust develops over time, as consumers build trust relevant knowledge through experience with e-retailing. Of course, trust does not result from experience alone. As Ganesan (1994) argues, perceived satisfaction with past outcomes is also very important. People who are experienced in buying online and have had positive experiences will view e-retailing as being trustworthy. E-shopping experience exerts a effect on trust because the shopper considers the products previously acquired and the new acquisitions to be similar in terms of trust in e-tailers (Hernande *et al.*, 2010).

According to Morgan and Hunt, (1994), communication plays an important role in establishing trust. Here, communication is defined along Morgan and Hunt's (1994) definition as the formal and informal sharing of relevant, reliable and timely information between the seller and the customer. To satisfy customers" information needs, such information should be up-to-date in presenting products and services, sufficient to help customers make a choice, represent in right format and easy to understand (Azam *et al.*, 2012a, 2012b). According to Loomis (1959), a well-functioning communication system contains information about expectations, intentions, retaliation (expression of one's planned reaction to violations of expectations) and absolution (expression of means of restoring cooperation after a violation of one's expectation). These four elements have a positive influence on trust, and thus, the lack of their communication might, to a large extent, hinder the development of trust. Moreover, satisfaction has a significant

influence on consumer trust; the more consumers will be satisfied, the more he/she will trust e-purchasing (Azam *et al.*, 2012b). Valvi and West (2013) found that satisfaction and perceived value as precursors to e-trust. Customer satisfaction can be increased by improving Web design and security policies, necessitating communications to remind customers of the website's security. In addition, customers' desire for online purchasing may be maintained only when consumers are satisfied that the websites are convenient and offer value.

These factors clearly show that the more positive the experience of a consumer in the past, the higher the level of TER. The following hypothesis depicts this relationship:

H2. Positive assessments of EBFs such as experience over time, satisfaction and communication have a positive influence on consumer TER.

3.3 Knowledge-based factors
In this paper, a distinct line is drawn between knowledge-based and experience-based trust; i.e., knowledge is seen as "technical" knowledge, which can be divided into knowledge about information practices and knowledge about security technology.

Milne and Boza (1999) argue that people who are knowledgeable about information practices know whether it is possible for a seller to retrieve information from certain sources. Consequently, consumers with good knowledge of negative information practices may be less trusting. On the other hand, it can be argued that consumers who are aware of what is possible when using information practices will be more trustful, as they feel in control. Here a positive relationship between knowledge about information practices and consumer trust is hypothesized. Knowledge is positively associated with trust in online shopping and is positively associated with online shopping activities. This means that consumers' knowledge may determine their level of trust in online retailers and their intention to purchase online. The more the consumers know, the more they trust online shopping (Chen and Jiang, 2010). Customers' computer knowledge has a positive and direct association with trust. The more computer knowledge consumers have, the more they feel trustful on their online purchases and transactions (Valvi and West, 2013).

Also, individuals who have knowledge about security technology also know how various security aspects (integrity, confidentiality, etc.) can be technically improved or even guaranteed. They are able to check for features that indicate that an e-retailer's website is secure. This can result in a positive or negative evaluation of the website. However, in general, it is expected that people with this knowledge are more confident about online buying and would trust e-retailing more, as they will feel more comfortable in their evaluation of a specific e-retailer. Li *et al.* (1999) also found that channel knowledge is seen as a predictor for online buying behaviour. From this, *H3* can be derived:

H3. KBFs, such as information practices and security technology, positively influence consumer TER.

3.4 Attitude-based factors
Several authors have suggested that consumers' attitudes towards shopping and/or computers have an influence on trust in an Internet store. But as consumers can only buy

something in an Internet store if they also have an Internet connection, it seems that their attitude towards the Internet also has an influence on their trust. Therefore, when speaking about consumers' attitude towards TER, all three components (attitudes towards the computer, the Internet and shopping) should be considered. Companies that wish to compete in the e-market must understand the type of customers they are addressing and develop their strategy according to whether they want to capture new e-customers or retain their existing ones. Policies aimed at encouraging e-shopping must be tailor-made for the needs of each type of e-customer, affecting different attitudes depending on the target clients. E-commerce providers cannot control the e-customers' attitude of computer, technology and shopping, but they can develop sites that include options for their customization and, then, guide e-customers through a shopping experience that is confidence-building (Hernande *et al.*, 2010). E-business must provide information about the properties, advantages and convenience of e-commerce, to potential e-customers to improve their attitude towards online shopping and build their trust (Hernande *et al.*, 2010). Thus, the initial stages of customer capture must concentrate on making individuals feel efficient and capable of correctly performing all types of e-transactions. This leads to the formulation of *H4*:

> *H4.* Positive attitudes to computers, Internet and shopping have a positive influence on consumer TER.

3.5 E-trust as antecedents of e-loyalty

Loyalty is defined as the repeated purchase behaviour presented over a period driven by a favourable attitude towards the subject (Keller, 1993), including both attitudinal and behavioural aspects. This combined conceptualization of loyalty is strongly argued by Jacoby and Chestnut (1978), who criticized the behavioural aspect of loyalty research which focused merely on repeat purchasing. Repeat purchase behaviour only reflects the outcome of a decision process in which the emotional, attitudinal facet of loyalty is disregarded. A true loyal customer was found to have commitment and attachment towards the retailer, and is not easily distracted to a slightly more attractive alternative (Shankar *et al.*, 2003). True loyalty indicates higher purchase intention, resistance to switch and willingness to pay more (Shankar *et al.*, 2003). Loyalty of the customers towards the exchange party generally encompasses brand loyalty (for a brand name product), vendor loyalty (for industrial goods), service loyalty (for services) and retailer loyalty (for a retailer/store) (Lim and Razzaque, 1997). Retailer loyalty, the loyalty towards a specific retailer, is of extreme interest to merchants, because high customer acquisition costs are difficult to regain without the commitment and repeat purchasing of the customer (Wallace *et al.*, 2004). In the current investigation, studies focus on retailer loyalty in the online retailing context. For this study, e-loyalty is defined as a customer's favourable attitude and commitment towards the online retailer that results in repeat purchase behaviour, based on the study of Srinivasan *et al.* (2002). E-Trust acts as a catalyst towards enhancing e-loyalty. It is e-trust that reduces the anxiety and panic prevailing in online purchasing due to lack of physical presence of the service provider (Valvi and West, 2013). Trust has been conceptualized as "customer confidence in the quality and reliability of the service offered" (Gabarino and Johnson, 1999, pp. 71-32) and has been presented as a central attribute in relationship initiation, formation and maintenance in a variety of exchange contexts (Sirdeshmukh *et al.*, 2002; Verhoef *et al.*, 2002). Previous studies suggest that trust has a significant impact on the establishment

of loyalty in both offline (Chaudhuri and Holbrook, 2001; Singh and Sirdeshmukh, 2000; Sirdeshmukh *et al.*, 2002) and online (Park and Kim, 2003; Pitta *et al.*, 2006; Reichheld *et al.*, 2000) environments. It is found that trust, not price, is considered as the most important factor for customers in deciding to consolidate their purchases with one online retailer (Reichheld *et al.*, 2000). Most recent research shows that consumers' attitude towards trust is a major indicator of online effectiveness and consumers' loyalty in online shopping (Azam *et al.*, 2013). Reichheld and Schefter (2000) assert that "to gain the loyalty of customers, you must first gain their trust. That's always been the case but on the web […] it's truer than ever" (p. 107), emphasizing the importance of e-trust in e-loyalty development. In an online environment, the navigation functionality and perceived security had a significantly positive effect on trust – which, in turn, influenced customer loyalty (Kim *et al.*, 2011). Taking into account the results, it can be seen that trust was found to be a precursor to loyalty, but a dissatisfied customer does not necessarily imply disloyal behaviour. There can be no loyalty development without early or concurrent trust episodes, as e-trust is a necessary prerequisite of e-loyalty. This is rational for online environments, as there are no exit barriers for consumers; nothing other than a click of the mouse prevents people from choosing another website. However, trust is also dependent on its own antecedents (e.g. psychological factors, perceived value, inertia, convenience motivation and computer knowledge), which should be taken into account when considering its relationship to loyalty (Kim *et al.*, 2011). Therefore, the following hypothesis is proposed:

H5. E-trust has a positive effect on e-loyalty.

4. Research methodology
The design of the study is empirical and confirmatory. A paper questionnaire was distributed to a sample of Saudi Arabian students.

4.1 Sample
Saudi Arabian students were chosen as the research population for this study for a number of reasons:

- The author believes that students are a very good target group for a research study in the field of e-retailing, as they have free access to the Internet and have the opportunity to use this medium for communication and commercial transactions.

- Students regularly buy products that are well-suited for e-retailing, namely, books, CDs, etc. Often these products are offered at a lower price online than offline and this forms a strong incentive to engage in e-retailing.

- Technical, logistical and payment issues have reached an advanced state in the Saudi (Riyadh) e-retailing market. Consequently, as the study was looking for a representative sample of advanced Internet users, a Saudi students sample qualifies for that.

The use of student samples and educational settings is widespread in e-commerce and online behaviour research (Azam *et al.*, 2013). The sample included experienced (80 per cent) as well as inexperienced (20 per cent) buyers. The research was performed by sending questionnaires to three Saudi universities and administering questionnaires to

students in the university by email and face-to-face. Author directed each subject to select one of their frequently used websites, and to ensure the authentication of the responses, a set of questions were given to participants that asked them to search for the relevant service. Subjects were asked to browse the selected websites and search for a particular service. Once the participants found their relevant service and completed their responses on the instruction form, they were asked to fill out the self-administrated questionnaire. Subsequently, they answered a series of questions regarding their perceptions towards PBFs, EBFs, KBFs and attitude constructs. The questionnaire contained a closed format of questions which takes 5-10 min to complete. Data from 250 students were collected. As the questionnaire was administered to groups of students by email, situation, the return rate was close to 100 per cent.

4.2 Summary of respondents

Out of 250 respondents, 40.5 per cent were males and 59.5 per cent were females; 100 per cent respondents were Muslim. Samples contained the respondents of age groups of 18-20 = 55, 21-30 = 165 and 31-40 = 30. In terms of education, 72 per cent of respondents were undergraduate students, 21 per cent were graduate students and the remaining 7 per cent were postgraduate students. As far as Internet experience is concerned, majority of the students use Internet on a daily basis. Computer proficiency of 55 per cent of the respondents was excellent, 30 per cent were very good at using a computer and the remaining 15 per cent were fair or not good. Respondents use the Internet for information-seeking, whereas some use it for online shopping and entertainment.

4.3 Survey instrument

A paper questionnaire was administered to the sample. All categories mentioned in the hypotheses were measured using the responses to this questionnaire. Whereas the hypotheses were stated in general and included several constructs, the questionnaire tested the various constructs separately. Wherever possible, the items were measured on a five-point Likert scale. Some questions were, however, posed in an ordinal or nominal format. The Appendix presents the list of items and corresponding constructs used in my research, with their references.

Pre-tested and validated instruments or items were used when available. Often these items were adapted to reflect the e-retailing focus of the study. If no existing measures were available, items were created to measure the construct. Especially for the dependent variable trust, new items had to be created to measure general instead of specific consumer trust. The existing literature on such constructs was used as a guide to formulate these items. In most cases, two or more items, some of which are reversed to retain participant attention, measure each construct.

Before the actual data collection, a pilot study was conducted by distributing 30 questionnaires to 12 assistant professors, 8 master-level students and 10 undergraduate-level students to validate the questionnaire. Small adjustments to the design of the questionnaire were made to improve its readability. The final items are provided in the Appendix.

5. Data analyses and results

To test the proposed research model, data analyses for both the measurement model and structural model were performed using partial least squares (PLS). The author used PLS-Graph 3.0.1016 with bootstrapping (Ravichandran and Rai, 2000; Wixom

Constructs	Types of indicators	Mean	SD	Alpha	Composite reliability	AVE[a]
Perc. reputation	Reflective	5.20	1.02	0.85	0.906	0.708
Perc. similarity	Reflective	3.90	1.45	0.91	0.962	0.669
Perc. normality	Reflective	3.80	0.96	0.86	0.899	0.720
Perc. control	Reflective	4.65	1.07	0.90	0.911	0.712
Perc. familiarity	Reflective	4.28	0.95	0.95	0.898	0.639
Experience over time	Reflective	4.49	1.28	0.80	0.957	0.759
Satisfaction	Reflective	5.66	1.45	0.81	0.961	0.863
Communication	Reflective	5.35	1.03	0.90	0.854	0.691
Information practices	Reflective	5.00	0.99	0.87	0.820	0.774
Security technology	Reflective	5.81	1.29	0.84	0.839	0.709
Computer and the Internet	Reflective	3.46	1.35	0.95	0.895	0.729
Shopping	Reflective	4.11	0.95	0.93	0.925	0.731
Perception-based factors	Formative	3.99	0.99	0.85	0.931	0.695
Experience-based factors	Formative	4.26	1.36	0.85	0.902	0.699
Knowledge-based factors	Formative	4.92	1.28	0.81	0.805	0.654
Attitude	Formative	3.56	1.10	0.89	0.812	0.711
Trust in e-retailing	Formative	5.10	1.40	0.93	0.815	0.701

Note: [a] *Average Variance Extracted* $= (\Sigma \lambda i)^2 var F / (\Sigma \lambda i)^2 var F + \Sigma \theta ii$

Table I.
Descriptive statistics and reliability indices for constructs

and Watson, 2001). PLS analyses structural equation models, including measurement and structural models with multi-item variables that contain direct, indirect and interaction effects (Chin, 1998a, 1998b).

Choosing between a reflective and a formative indicator is sometimes difficult because the directionality of the relationship is not always straightforward. When indicators could be viewed as causing rather than being caused by the latent variable measured by the indictors, the author operationalized the indicators as formative (MacCallum and Browne, 1993). In this study, the PBFs, EBFs, KBFs and attitude constructs were formed with indicators that reflected different sub-construct PBFs (i.e. perc. reputation, perc. similarity, perc. normality, perc. control and perc. familiarity), EBFs (i.e. experience over time, satisfaction and communication), KBFs (i.e. information practices and security technology) and attitude (i.e. product risk, financial risk and overall risk), respectively; consequently, the direction of causality was from indicator to construct (i.e. formative). All the other indicators in the model were treated as reflective indicators of their respective constructs (Bollen and Lennox, 1991).

As a second-generation data analysis technique (Bagozzi and Fornell, 1982), PLS provides a powerful method for assessing a structural model and measurement model because of the minimal demands on measurement scales, sample size and residual distributions (Chin, 1998a, 1998b). Handling both formative and reflective indicators, PLS can be used not only for theory confirmation, but also for suggesting where relationships might or might not exist and for suggesting propositions for later testing. The combined analysis of the measurement and the structural model enables measurement errors of the observed variables to be analysed as an integral part of the model, and factor analysis to be combined in one operation with hypothesis testing (Gefen *et al.*, 2000).

To ensure the appropriateness of the research instrument, it was tested for construct reliability and construct validity.

5.1 Reliability

The assessment of the measurement model includes the estimation of internal consistency for reliability, and tests of convergent and discriminant validity for construct validity (Chin and Todd, 1995). Internal consistency was calculated using Cronbach's alpha and Fornell's composite reliability (Fornell and Larcker, 1981). Table I shows the descriptive statistics for the constructs, the reliability (Cronbach's alpha) of the scales and the sources from which they were adapted:

$$\text{Composite Reliability} = \frac{\left(\sum \lambda i \right)^2 varF}{\left(\sum \lambda i \right)^2 varF + \sum \theta ii}$$

The Cronbach reliability coefficients of all variables were higher than the minimum cutoff score of 0.60 (Nunnally, 1978), 0.65 (Lee and Kim, 1999) or 0.70 (Nunnally, 1978). In contrast to Cronbach's alpha, which implicitly assumes that each item carries the same weight, composite reliability relies on the actual loadings to construct the factor score and is thus a better measure of internal consistency (Fornell and Larcker, 1981). Composite reliability should be greater than the benchmark of 0.7 to be considered adequate (Fornell and Larcker, 1981). All composite reliabilities of constructs had a value higher than 0.7, indicating adequate internal consistency (Nunnally, 1978). Additionally, all average variance extracted (AVE) values of the constructs were higher than 0.50, the suggested minimum (Fornell and Larcker, 1981). An AVE greater than 0.5 indicates that more than 50 per cent of the variance of the measurement items can be accounted for by the constructs.

5.2 Construct validity

Construct validity was examined by assessing convergent validity and discriminant validity (Chin, 1998a, 1998b). Convergent validity is considered acceptable when all item loadings are greater than 0.50 (Wixom and Watson, 2001), and the items for each construct load onto only one factor with an eigenvalue greater than 1.0. As noted in the Appendix, the items for each construct did indeed load onto only one factor with an eigenvalue greater than 1.0. The cumulative percentages of variance explained by each factor were greater than 63 per cent for all constructs.

The AVE can also be used to evaluate discriminant validity. The AVE from the construct should be higher than the variance shared between the construct and other variables in the model (Fornell and Larcker, 1981). Discriminant validity can be checked by examining whether the correlations between the variables are lower than the square root of the AVE. Table II indicates that all the square roots of each AVE value are greater than the off-diagonal elements. This indicates discriminant validity among variables.

Constructs	PR	PS	PN	PC	PF	EOT	SA	CO	IP	ST	C&I	SO	PBF	EBF	KBF	AT	TER
Perc. reputation	**0.87**																
Perc. similarity	0.40	**0.82**															
Perc. normality	−0.16	0.12	**0.80**														
Perc. control	0.12	0.03	0.06	**0.84**													
Perc. familiarity	0.50	0.25	0.13	0.10	**0.84**												
Experience over time	0.20	0.10	0.10	0.02	0.41	**0.90**											
Satisfaction	0.33	0.16	0.09	0.13	0.02	0.17	**0.93**										
Communication	0.63	0.68	0.21	0.05	0.48	0.30	0.23	**0.86**									
Information practices	0.47	0.31	0.28	0.02	0.35	0.36	0.13	0.50	**0.80**								
Security technology	0.20	0.12	0.28	0.31	0.30	0.21	0.09	0.14	0.11	**0.88**							
Computer and the Internet	0.33	0.15	0.01	0.40	0.39	0.35	0.29	0.13	0.22	0.35	**0.93**						
Shopping	0.63	0.68	0.59	0.44	0.51	0.22	0.19	0.31	0.39	0.11	0.21	**0.84**					
Perception-based factors	−0.17	−0.23	−0.03	−0.03	−0.06	0.39	0.25	0.15	−0.12	0.50	0.22	0.21	**0.95**				
Experience-based factors	0.50	0.13	0.30	0.19	0.35	0.47	0.22	0.38	0.10	0.17	0.02	0.23	0.60	**0.89**			
Knowledge-based factors	−0.21	−0.09	0.03	0.13	0.41	0.21	0.11	0.01	0.30	0.25	0.13	0.17	0.23	0.119	**0.80**		
Attitude	0.31	0.41	0.39	0.25	0.14	0.08	0.21	0.34	0.17	0.09	0.41	0.03	0.50	0.22	0.14	**0.81**	
Trust in e-retailing	0.49	0.37	0.43	0.30	0.23	0.50	0.29	0.31	0.44	0.11	0.19	0.28	0.37	0.41	0.50	0.35	**0.84**

Notes: Diagonal elements (bold) are the square root of average variance extracted; these values should exceed the inter-construct correlations for adequate discriminant validity

Table II.
Correlations of latent variables
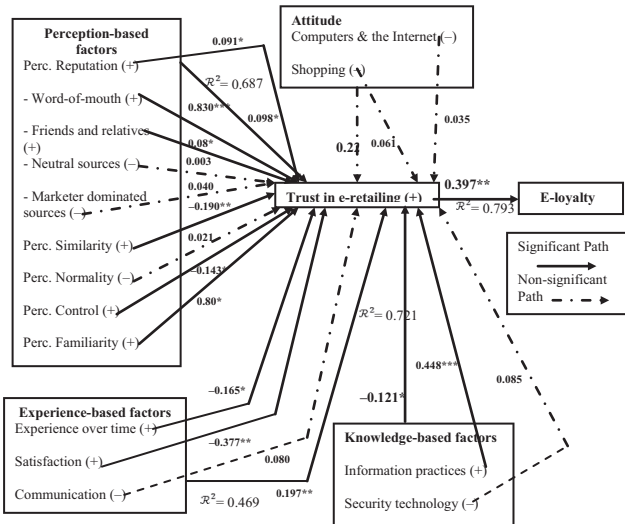
Notes: **Significant at the 0.05; **significant at the 0.01;
***significant at the 0.001 level

5.3 Structural model assessment
The assessment of the structural model includes estimating path coefficients and R^2 and the path coefficients indicate model fit, i.e. how well the model is performing (Chin, 1998a, 1998b). Figure 2 shows the results of assessment and hypothesis testing.

As shown in the figure, consumers' PBFs had a strong positive effect on a consumer's TER. As I proposed and expected, the path coefficients of both PBFs → TER was significant with $\beta = 0.98$ at the 0.05 level. Thus, word-of-mouth → TER, friends and relatives → TER, perceived similarity → TER, perceived control → TER and perceived familiarity → TER were supported at $\beta = 0.91$, $p < 0.05$; $\beta = 0.830$, $p < 0.001$; $\beta = 0.91$, $p < 0.05$; $\beta = -0.143$, $p < 0.05$; and $\beta = 0.80$, $p < 0.05$, respectively. Whereas, three hypothesized paths from the perception-based trust antecedents, i.e. neutral sources → TER, marketer-dominated sources → TER and perceived normality → TER, were non-significant at $\beta = 0.003$, $\beta = 0.040$ and $\beta = 0.021$, respectively. In sum, the study found support for *H1*.

The hypothesized paths from the EBF to consumer's TER was significant at $\beta = 0.197$, $p < 0.01$. This finding supports *H2*. Among the constructs of EBF, experience over time → TER and satisfaction → TER had a significant effect at $\beta = -0.165$, $p < 0.05$ and $\beta = -0.377$, $p < 0.01$, respectively. The third construct of EBF communication has no significant effect on TER at $\beta = 0.080$. These findings support *H2*.

The model analysis supports *H3*, KBFs have a significant influence on consumer's TER at $\beta = -0.121$, $p < 0.05$. The model partially supports KBFs such as information practices on TER at $\beta = 0.448$, $p < 0.001$, but the analysis did not show any significant influence of security technology on TER ($\beta = 0.085$).

Interestingly, attitude ($\beta = 0.22$) along with both its constructs computers and the Internet ($\beta = 0.22$) and shopping ($\beta = 0.22$) did not show any significant influence on

consumer's TER. The analytical results did not show any support for *H4*. The R^2 values for PBF, EBF and KBF were 0.687, 0.469 and 0.721, reflecting that the model provides strong explanations of the variance in consumers' perception, consumers' experience and consumers' knowledge factors to e-loyalty, respectively.

The nature of my dependent variable, e-loyalty, dictates that it is measured with a single dichotomous (trust or not trust) indicator. PLS assumes that variables are scalar rather than dichotomous (Chin, 1998a, 1998b), and therefore, would underestimate the magnitude of an effect on a dichotomous variable. To more accurately estimate the effect of TER on e-loyalty, a logistic regression analysis of the bivariate relationship between trust and e-loyalty was conducted. The logistic regression model also included three other constructs (PBFs, EBFs and KBFs) as potential predictors so that the effects of TER on e-loyalty could be isolated from other effects. Tables III and IV presents the results from the logistic regression analysis. Author found that TER was indeed a strong predictor of e-loyalty ($\beta = 0.397$, $R^2 = 0.793$; $p < 0.001$), while other constructs did not have a strong effect on purchase (log likelihood ratio L = 706.318, $p < 0.001$). In sum, the results strongly suggest that when consumers have a higher level of trust (in e-retailing) in the Internet vendor's website, they are more likely to be loyal to that site, thus supporting *H5*.

6. Results

Model suggests statistical significance for many hypotheses proposed in the current study. This study supports that, for those participants with experience in e-retailing, PBFs influence consumer TER. For e-retailing experienced participants, there are five PBFs that have a statistically significant influence on trust: reputation, word-of-mouth, information from friends and relatives, perceived similarity, perceived control and perceived familiarity. This category of second-hand information consisted of three more detailed factors: information from consumer-dominated sources, divided into the two constructs, information from friends and relatives and word-of-mouth, information from neutral sources and information from marketer-dominated sources. The constructs information from

Table III.
Summary of statistics and logistic regression results

E-loyalty	Trust in e-retailing mean	Trust in e-retailing SD	N
No e-loyalty	4.92	1.55	231
E-loyalty	5.11	1.09	190

Model	Chi-square	df	Significance
Model	45.429	6	0.000
−2 log likelihood (L)		706.318	

Table IV.
Results of logistic regression analysis

Variable	B	SE	Wald	Significance	R^2
Trust in e-retailing	0.397	0.115	17.362	0.000	0.793
Perception-based factors	0.041	0.192	0.501	0.493	
Experience-based factors	0.056	0.119	0.321	0.488	
Knowledge-based factors	0.64	0.215	0.603	0.431	
Constant term	−3.283	0.738	12.005	0.001	

word-of-mouth and friends and relatives has a significant influence on TER, similar to previous studies (Mitra *et al.*, 1999). It can be concluded that the opinions of friends and relatives about e-retailing as well as information about e-retailing gathered from someone who has actual experience with buying online have a significant influence on consumer trust. Information from neutral sources and marketer-dominated sources, however, does not influence the level of TER. Furthermore, the influence of consumers' perceived similarity of e-retailers to themselves is statistically significant. It can be concluded that a consumer who perceives e-retailers to have different goals and values will be more likely to distrust e-retailers. Normality does not have an influence on trust according to this study. Nevertheless, perceived control has a large influence on TER. As expected, the results indicate that consumers who perceive that they have the power to influence e-retailers' financial outcomes, and hence reduce any reasons that e-retailers may have to engage in untrustworthy behaviour, will be more trusting of e-retailers. Finally, a statistically significant effect of familiarity on trust was seen. This seems to indicate that familiarity is not important for people who have experience in e-retailing but rather is an important issue to distinguish experienced from inexperienced participants. In sum, results found support for *H1*. PBFs are the main determinants of TER in my study.

Positive assessments of EBFs have a positive influence on consumer TER – received partial support. The influence of EBFs on trust was analysed. However, only EBFs could be included when they were independent of actual experience in e-retailing. This study strongly supports the positive relationship between experience over time and TER. TER of participants with no experience in e-retailing exhibits lower levels of trust due to lower experience with e-retailing. Also, the other experience factors, such as satisfaction, show a significant influence on TER, whereas communication did not show any significant influence. Experience factors, however, significantly explain the differences in trust levels between experienced and inexperienced participants.

KBFs such as information practices and security technology positively influence consumer TER – received partial support. Current study shows that knowledge about information practices significantly influences trust. Therefore, increased knowledge about information practices increases consumer TER. Knowledge about security technology does not affect trust in the proposed model.

Positive attitudes to computers, shopping and the Internet have a positive influence on consumer TER – was not supported. Contrary to a study conducted by Jarvenpaa and Tractinsky (1999), none of the attitude-based factors seemed to have a significant influence on trust. This held for both experienced and inexperienced participants. Therefore, the hypothesis on attitude (*H4*) was rejected. The only "explanation" for this may be that attitude towards computers and the Internet and attitude towards shopping are just not related to trust with respect to e-retailing.

Finally, study shows strong support for *H5*. This study suggests that TER will enhance e-loyalty in an online environment.

7. Discussion and conclusion
Perception, experience, knowledge and attitude were hypothesized to have an influence on determining consumers' TER and then on the development of e-loyalty. A comprehensive survey analysed which of these factors predicted Saudi Arabian consumer TER and then of e-trust on e-loyalty. An overview of the factors that were found to have a significant influence on consumer TER is shown in Figure 2.

When analysing reasons for consumer TER, Saudi consumers seem to make their decision to trust an e-retailer on a perception-based, cognitive basis. The majority of significant factors (reputation, word-of-mouth, information from friends and relatives, perceived similarity, perceived control, perceived familiarity) are all directly related to the customer's perception of e-retailing.

The image a person has of e-retailers is thus the most important determinant of TER. These antecedents completely determine consumer TER for experienced buyers. Issues like the reputation of e-retailing and information from consumer-dominated sources (perceived similarity, and perceived control) are the main issues that determine online consumer trust.

A lack of perceived familiarity with Internet and e-retailing may be a reason for the low trust levels of participants with no e-retailing experience. For an online business, this is rather good news, as all of these are factors that can be influenced at least to some extent. By dedicating more resources to marketing initiatives or simply by doing good business and thus supporting positive reputation and word-of-mouth among customers, e-retailers can increase TER in general and thus in their virtual stores.

Inexperienced Internet users can increase their familiarity with the Internet and e-retailing without actual e-retailing experience. Providing potential customers with information about e-retailing would have a positive influence on familiarity and thus on consumer trust. Long pages full of legal small print will not help improve customer's familiarity but probably scare them even more. Instead, a company website should explain the e-retailing process and the guarantees given to customers. Often, a customer has to experience the buying process to find out that it works.

Extra costs, such as delivery, are not always disclosed to the customer until shortly before the consummation of the buying process. A person unfamiliar with e-retailing may not dare to investigate the shopping process by pretending to buy a product if he or she fears that the result may be an unintended buy. It is the responsibility of the e-retailer to provide all the necessary information and make it easily accessible. My hypotheses were partly supported for KBFs (about information practice) and for EBFs (the duration of experience with e-retailing). In both cases, only a rather small part of the possible influences were indeed seen. These factors are only statistically significant with respect to the different trust levels between buyers and non-buyers. Thus, KBFs and EBFs in general seem to play a rather limited role in determining consumer trust.

Interestingly, attitude-based factors were completely eliminated from the model. This means that, contrary to expectations, trust in online retailing was not apparently influenced by an individual's attitude towards computers and Internet and shopping. Although the study measured only two attitudinal factors, it did not expect that other attitudinal factors would show different results. In contrast to the significant relationships of other researchers, attitude towards shopping, computers and the Internet did not have a significant influence on Saudi consumer TER.

The increasing competitiveness in the electronic business is motivating varying research on the principal antecedents of consumer loyalty. Overall, it is critical for the online retailers to realize the close relationships of e-trust in the development of e-loyalty. When consumers interact with online retailers, they perceive that they are interacting with an organization through a technical interface, evaluating not only the retailer's website performance but also the consumers' PBFs, EBFs and KBFs and entire purchase experience that extends to e-loyalty. Therefore, results can help online retailers realize the role of all four distinct dimensions of consumers' PBFs, EBFs, KBFs and TER on e-loyalty.

The psychological dimensions that matter to Saudi consumers, where most of those dimensions are truly universal, such as perception-based values, perceived similarity, perceived control, perceived familiarity satisfaction, experience and information practices. Most of the results are quite similar to previous research (non-Muslim consumer), except few, as explained previously. This research shows that on a broader view, psychological dimensions did not show any change in the behaviour of Saudi consumers for being a Muslim as against a non-Muslim consumer. E-retailers can then go further and start empathizing and incorporating the nuances to show that they understand the Saudi consumers' values and needs as Muslims. The results suggest that researchers need to be more specific while defining the constructs' effect on Saudi online consumer behaviour and brand selection as Muslim e-consumers. Current research is not suggesting that e-retailers should convert or change their practices, but filtered the specific dimensions that are relevant to online Muslim consumers.

The question that remains is: How far are these results applicable to an individual e-retailer? Clearly, each individual e-retailer should contribute to improving customer's perception of e-retailing in general. This author can also assume that Saudi Muslim customers would probably form trust in individual retailers in a similar way as non-Muslim customers. According to the results, PBFs like perceived reputation, perceived similarity, perceived control and perceived familiarity are the main determinants of TER and e-loyalty for the Saudi e-consumer sample being used.

7.1 Theoretical and practical implications

This study has both theoretical and practical Implications. From a theoretical perspective, the psychological-based consumer trust decision-making model provides a holistic view of an online consumer's purchase decision-making process, incorporating the effects of the consumer's trust and a range of psychological dimensions of trust and assessing the impact of these factors not only on purchase intentions about also on e-loyalty. Thus, our study provides perhaps the most comprehensive understanding to date of the trust- and psychology-related factors that loyal consumers consider as they engage in online commerce. In addition, prior studies have often not adequately distinguished among PBFs, EBFs, KBFs and attitude-based factors, and concomitantly have not understood their relationships with each other or how they work independently or in combination to influence trust and e-loyalty. By distinguishing among the concepts both conceptually and empirically, it is believed that the study results have provided important insights into their distinct roles in the online purchase experience.

From a practical standpoint, the results highlight several psychology-based trust-enhancing factors that may guide not only to win e-loyalty but to the successful completion of electronic commerce transactions in B2C environments. Specifically, the study identified a number of potentially important psychology determinants of consumers' trust in a website, and ultimately of their likelihood of purchasing from a website, and it provided empirical evidence concerning the relative impact of each of these determinants on consumers' trust and e-loyalty. Thus, the theoretical framework and results may allow Internet retailers to better incorporate trust-building mechanisms into their websites by focusing on the factors identified in this study. More specifically, study results suggest that as consumers' perceptions of PBFs, EBFs, KBFs and attitude constructs are the strongest predictors of trust, Internet business managers should pay particular attention to these factors to increase transaction volume and retain loyal customers.

7.2 Limitations

Some limitations of the research design could bound the application of the findings. Firstly, this study has attempted to shed some light on the psychological antecedents of consumer TER but still missed some important antecedents, for example personality-based factors.

Secondly, an option for "not applicable" as an answer choice was not provided in the survey instrument. This may contribute to reducing missing values as well. In the event of not providing the not applicable option, respondents might have been compelled to click on any option when they were not able to find the exact answer reflecting their opinions. To assess the answer scales accurately, it would be better to provide a "not applicable" option to avoid a biased data set.

In general, it is hard for a participant to provide accurate information about his/her past experience that happened three months ago. The longer the history is, the less accurate the information that is provided. To overcome such issues and problems in the self-report method, an experiment research is recommended to investigate the effects of trust in e-retailers.

This study collected general information about participants' past online purchasing experiences without specifying a particular brand (product/service) they had purchased. This instrument design has a certain tradeoff. The good side is that the data reflect consumers' general experiences and thus the research findings may have high generalizability. The bad side is that some antecedents such as trust and loyalty may not be detected. Trust and loyalty are all associated with a specific time, place and object. For example, the perception of trust is always associated with a specific vendor and/or a particular brand; perception and experience priority are associated with a particular time and location. To analyse the specific psychological dimensions, future research should use a comparative study between Muslim and non-Muslim brands.

In conclusion, this study provides a valuable research model and empirical results in the area of online consumer behaviour. Meanwhile, it exposes some limitations of the research method and the measurement instruments. Overcoming these limitations in future research will open new research avenues for the study of online consumer behaviour.

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Corresponding author

Afshan Azam can be contacted at: azamafshankhan@gmail.com

Appendix AI

Constructs	Loadings
Perception-based factors	
Reputation (some items adapted from (Ganesan, 1994; some created by authors)	
1. E-retailers have a reputation of being honest (Ganesan, 1994)	0.912
2. E-retailers are known to be concerned about their customers (Ganesan, 1994)	0.919
3. Internet stores have a reputation of not having adequate disclosure requirements, like warranties and guarantees in place (reverse)	0.901
4. E-retailers have a reputation of not keeping their contractual promises (reverse)	0.928
5. Most people think that buying online is secure	0.899
6. Most people think that buying online is not harmful for your privacy	0.922
7. E-retailers have a bad reputation in the market (not included) (Ganesan, 1994)	0.950
Word-of-mouth (consumer-dominated sources, created by authors)	
1. I know someone who had bad experiences with buying online (reverse)	0.856
Information from friends and relatives (consumer-dominated sources created by authors)	
1. Most of my friends and relatives think that e-retailers are trustworthy	0.913
Information from neutral sources (created by authors)	
1. There is a lot of negative information in the media (TV, radio, newspapers, periodicals, etc.) about buying online (reverse)	0.799
2. According to consumer reports, it is not advisable to buy from an Internet store (reverse)	0.869
Information from marketer-dominated sources (created by authors)	
1. E-retailers promote that they are trustworthy	0.951
2. I know advertisements of e-retailers that argue that it is secure applicable to buy from an Internet store	0.925
3. I know of e-retailer advertisements that say privacy will not be invaded when something is bought online	0.934
Perceived similarity (Doney and Cannon, 1997)	
1. I perceive the interests of traditional retailers to be more similar to mine than the interests of e-retailers (reverse)	0.919
2. I perceive the values of e-retailers to be more similar to mine than the values of traditional retailers	0.843
3. I perceive e-retailers as being more similar to me than traditional e-retailers	0.821
Perceived normality (created by authors)	
1. To buy something from an Internet store is not a common thing to do (reverse)	0.886
2. Most people do not think that it is normal to buy products from an e-retailer (reverse)	0.901
3. It is not commonly accepted to buy something from an e-retailer (reverse)	0.836
	(*continued*)

Table AI.
Questionnaire items

Constructs	Loadings
Perceived control (created by authors)	
1. There exist adequate laws that will protect me when I make online purchases	0.714
2. Many e-retailers make use of seals of approval like Visa, e-trust and SET which will protect me when I make online purchases	0.851
3. Many e-retailers do not have adequate labelling and disclosure requirement like warrantees, guarantees, product standards and specifications in place (reverse)	0.788
4. In my opinion, e-retailers have adequate mechanisms in place that will safeguard me from defective products	0.795
5. Most e-retailers do not have conditions of cancellation in place (reverse)	0.783
6. If an e-retailer posts a privacy policy on his/her	0.743
7. Website I would trust that e-retailer to follow the policy	0.889
8. Most e-retailers have an appropriate refund mechanism in place	0.861
Perceived familiarity (adapted from Garbarino and Johnson, 1999; some created by authors)	
1. I like a feeling of familiarity before I buy something from an e-retailer (Garbarino and Johnson, 1999)	0.856
2. I know [...] number of e-retailers (ordinal)	0.813
3. I use the Internet (how often) (ordinal)	0.749
4. I use the Internet since months years (number)	0.888
Experienced-based factors	
Experience over time (created by authors)	
1. Have you made purchases from e-retailers in the past (nominal)	0.855
2. How many times did you buy something from an e-retailer (ordinal)	0.829
3. I buy things from the Internet since months, years (number)	0.913
Satisfaction (created by authors)	
1. My experiences with e-retailers were always positive	0.899
2. My experiences with e-retailers were as satisfactory as my experiences with traditional retailers	0.941
3. I felt pleased with respect to the outcomes of the last five times I bought something online	0.918
Communication (created by authors)	
1. The e-retailers I have experience with have problems answering my questions (reverse)	0.846
2. The e-retailers I have experience with are responsive to my needs of information	0.856
3. I always knew what the privacy policy of the e-retailers I have experience with was	0.823
4. I always knew what the security policy of the e-retailers I have experience with was	0.914
	(*continued*)

Table AI.

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Constructs	Loadings
Knowledge-based factors	
Knowledge about information practices (created by authors)	
1. I believe that e-retailers can without my knowledge obtain my name and address from Internet usage (reverse)	0.904
2. Third parties can without my knowledge obtain the information that I have given to an e-retailer	0.897
3. I believe that e-retailers can without my knowledge obtain my name and address from buying on the Internet (reverse)	0.936
4. I believe that e-retailers can without my knowledge obtain my e-mail address from Internet usage (reverse)	0.941
5. I believe that e-retailers can without my knowledge obtain information about my surfing behaviour	0.901
Knowledge about security technology (created by authors)	
1. I know what security is	0.877
2. A message locked with a certain public key can only be opened applicable with the corresponding public key (reverse)	0.798
3. My browser indicates when I enter a secure area	0.878
4. All secure servers are technically the same and are equally secure (reverse)	0.891
Attitude-based factor	
Attitude towards the Internet and computers (Jarvenpaa and Tractinsky, 1999; some created by authors)	
1. Computers make work more interesting (Jarvenpaa and Tractinsky, 1999)	0.855
2. I enjoy interacting with computers (Jarvenpaa and Tractinsky, 1999)	0.793
3. I use computers for fun (Jarvenpaa and Tractinsky, 1999)	0.826
4. I like using the Internet	0.865
5. I use the Internet for fun	0.855
6. The Internet makes work more interesting	0.879
Attitude towards shopping (Jarvenpaa and Tractinsky, 1999)	
1. I view shopping as an important leisure activity	0.839
2. I dislike shopping (reverse)	0.836
3. For me, shopping is a pleasurable activity	0.899
4. I would prefer somebody else to do my shopping (reverse)	0.879
Trust in e-retailing	
Created by authors	
1. I think that e-retailers usually fulfill the commitments it assumes	0.876
2. I think that the information offered by e-retailers is sincere and honest	0.855
3. I think I can have confidence in the promises that e-retailers make	0.859
4. E-retailers do not make false statements	0.864
5. I think that retailers have the necessary abilities to carry out their work	0.801
6. I think that e-retailers have sufficient experience in the marketing of the products and services that they offers	0.913
7. I think that e-retailers have the necessary resources to successfully carry out their activities	0.911

Table AI.

Constructs	Loadings
E-loyalty	
Created by authors	
1. I visit website more frequently	0.929
2. Where I purchase the majority of the products and services from e-retailers' website	0.954
3. This is my favourite site for purchasing the products and services in this Internet category	0.915
4. Not counting retailers' website, in the last few months I have visited very few sites that offer products and services	0.927
5. The frequency with which I visit e-retailers' websites that offer similar products and services is much less	0.941
6. I don't usually purchase products and services from offline stores	0.923

Psychological dimensions of trust

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Table AI.