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Building e-trust and e-retention in online shopping: the role of website design, reliability and perceived ease of use

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Abstract

Purpose – This study aims to examine the impact of website design, reliability and perceived ease of use as an engagement motivational factors on customer e-trust and e-retention in online shopping.

Design/methodology/approach – By using deductive approach, quantitative methods and purposive sampling technique, this study has collected the data from 295 young online customers to enhance an understanding of website design, reliability and perceived ease of use in an online shopping context.

Findings – The findings revealed interesting insights where reliability is the most significant predictor of customer e-trust in online shopping, followed by perceived ease of use and website design. In addition, a

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significant mediating effect of e-trust is found between customer e-retention, website design, reliability and perceived ease of use.

Research limitations/implications – Future research is recommended to predict the antecedents of online engagement motivational factors with value co-creation and co-creation experience in online shopping context.

Originality/value – This study offers fresh insights about driving elements and impediments of online customer retention. Customer engagement comprising of website design, reliability and perceived ease of use appear to influence the online customer retention through direct and indirect effect.

Keywords Customer engagement, Uses and gratification theory, E-retention, Website design, Perceived ease of use

Paper type Research paper

Creación de e-confianza y e-retención en las compras online: el papel del diseño del sitio web, la fiabilidad y la facilidad de uso percibida

Resumen

Propósito – Este estudio tiene como objetivo examinar el impacto del diseño del sitio web, la fiabilidad y la facilidad de uso percibida como factores de motivación del compromiso en la e-confianza y la e-retención del cliente en las compras en línea.

Metodología – Mediante el uso de un enfoque deductivo, métodos cuantitativos y una técnica de muestreo intencional, este estudio ha recogido datos de 295 jóvenes clientes en línea para mejorar la comprensión del diseño del sitio web, la fiabilidad y la facilidad de uso percibida en un contexto de compra en línea.

Conclusiones – los resultados revelan datos interesantes, como que la fiabilidad es el factor predictivo más significativo de la confianza electrónica de los clientes en las compras en línea, seguido de la facilidad de uso percibida y el diseño del sitio web. Además, se observa un efecto mediador significativo de la e-confianza entre la e-retención del cliente, el diseño del sitio web, la fiabilidad y la facilidad de uso percibida.

Limitaciones – Se recomiendan futuras investigaciones para predecir los antecedentes de los factores motivacionales del compromiso online con la co-creación de valor y la experiencia de co-creación en el contexto de las compras online.

Originalidad – Este estudio ofrece nuevas perspectivas sobre los elementos impulsores y los impedimentos de la retención de clientes online. El compromiso del cliente, que incluye el diseño del sitio web, la fiabilidad y la facilidad de uso percibida, parece influir en la retención de clientes online a través de efectos directos e indirectos.

Palabras clave Compromiso del cliente, Teoría del usos y gratificaciones, E-retención, Diseño del sitio web, Facilidad de uso percibida

Tipo de artículo Trabajo de investigación

在网上购物中建立电子信任和电子保留：网站设计、可靠性和感知的易用性的作用

摘要

目的 – 本研究旨在考察网站设计、可靠性和感知易用性作为参与动机因素对网上购物中顾客电子信任和电子保留的影响。

方法 – 通过使用演绎法、定量方法和目的性抽样技术, 本研究收集了295名年轻在线顾客的数据, 以加强对在线购物中的网站设计、可靠性和感知易用性的理解。

研究结果 – 研究结果揭示了有趣的见解, 即可靠性是网上购物中顾客电子信任的最重要的预测因素, 其次是感知到的易用性和网站设计。此外, 在顾客电子保留、网站设计、可靠性和感知易用性之间发现了电子信任的显著中介效应。

研究局限 – 建议未来的研究预测在线参与动机因素与价值共创和在线购物背景下的共创经验的前因。

原创性 – 本研究提供了关于在线客户保留的驱动因素和障碍的新见解。由网站设计、可靠性和感知易用性组成的客户参与似乎通过直接和间接效应影响了在线客户保留。

关键词 客户参与 、使用和满足理论 、电子留存 、网站设计 、感知到的使用便利性

文章类型 研究型论文

1. Introduction

Recent marketing research has shown that focusing on customer engagement (CE) can result in enhanced market share, a competitive advantage, higher profits, increased consumer value and stronger customer relationships characterized by increased attachment, loyalty, trust, commitment and satisfaction (Ijaz *et al.*, 2016; Kumar and Lata, 2021; Wagner *et al.*, 2020). Customers who are actively involved in the company's marketing process are more likely to make purchases and refer friends and family to the business by providing positive feedback on existing and proposed products and services (Pansari and Kumar, 2017).

CE plays an important role in online mediums of interaction (Japutra *et al.*, 2022). These interactions are a result of both emotional and utilitarian drivers (Siddique *et al.*, 2021). The recent debate in the CE literature advocates that positive interaction with customers on online platforms may lead to favorable outcomes for the service providers (Kang *et al.*, 2021). These favorable outcomes may arise in the form of customer loyalty (Zaid and Patwayati, 2021), customer repurchase intention (Majeed *et al.*, 2022) and customer e-retention (Arora *et al.*, 2021). CE is relying on several factors which may include positive interaction with the website, creative and convenient website design, the reliability of the service provider and the convenience to use the website (Sukendia and Harianto, 2021). These factors are important to engage customers toward online purchases and posting positive reviews about the webstore (Busalim and Ghabban, 2021).

Moreover, one of the major concerns of e-commerce companies is customer e-retention. This is imperative because customer e-retention has a strong influence on the company's profitability (Giao *et al.*, 2020; Javed *et al.*, 2018). As argued by Ali *et al.* (2010), the cost of acquiring a new customer is seven times greater than that of maintaining an old one. Purani *et al.* (2019) also agreed that customer acquisition for online shops is more challenging than for traditional outlets. Furthermore, scholarly thoughts on the concept of e-retention argue that it varies from situation to situation. Some scholarly insights have defined the concept in terms of loyalty (Ahmad and Al-Hawari, 2014, Al-Hawari, 2015, in Al-hawari and Mouakket, 2010), whereas others have associated it with the repurchase intentions of the customers (Zhou *et al.*, 2009; Wen *et al.*, 2011).

In addition, many of the extant studies recognize CE by integrating other factors to determine customer retention in the online retail market. Most studies focused on consumer value creation (Vakulenko *et al.*, 2018; Wijaya *et al.*, 2020), e-commerce strategy (Sambhanthan and Good, 2016; Tang and Yang, 2020) and website quality (Giao *et al.*, 2020; Ramadhanti and Slamet, 2020). Though CE has been widely discussed in the literature through different factors yet, the integrative formulation of website design, its reliability and ease of use as a predictor of developing CE with online webstores has not yet been studied. We integrate these variables due to the following reasons.

First, as reported by Chung *et al.* (2018), to determine the nature of CE with websites, it is necessary to consider website design as a significant strategic customer touchpoint through which retailers can sell items and engage customers. Second, according to Lăzăroiu *et al.* (2020), customers are motivated to interact with a company's website when they believe the website to be a reliable resource for locating and assessing products, as well as for submitting and reading evaluations of those products and services. As perceived reliability encourages customers to submit their online reviews on a social platform, Ventre and Kolbe (2020) further bolster the case by pointing out that this opinion favorably affects the level of trust that other buyers have in their purchase decision. Third, perceived ease of use has been identified as the most crucial and vitally studied variable in the context of online buying, according to a large body of research. Due to the shopping website's user-friendliness,

customers find it simple to navigate and choose their items. However, websites that make it difficult for users to find and buy what they are looking for tend to see fewer visitors and fewer sales.

Furthermore, the role of e-trust as a mediator to predict the nexus between the abovementioned factors and customer e-retention further extends the line of discussion in the online engagement and e-retention prospect. Those customers who are more engaged with the webstore because of its convenience, reliability and creative design may likely develop a strong level of trust with the e-service provider (Tran and Vu, 2019). These online actions may likely develop an influential relationship of the customers with the webstores, service brands and online organizations. This relationship which is an outcome of different emotional and utilitarian factors helps the e-service providers in e-customer retention. Customer retention and developing the loyalty of customers are the most challenging aspects of online shopping due to the presence of many competitors (Choi, 2020). However, the researchers did not concentrate on incorporating an integrated view of these success factors in online retail into a systematic research model. Thus, further empirical research on these aspects is necessary.

The present study has taken in point the case of loyalty which emerges from the trust provided by the online service provider which will gauge the customer repurchase intention (e-retention) in an online shopping context. Thus, defining the concept of e-retention as the extent to which customers indicate certain behaviors over and over to online shopping in specific situations through cognitive disposition and positive attitude. Hence, this study will treat e-retention in the context of online repurchase intentions.

Addressing these gaps, this study aims to examine the impact of website design, reliability and perceived ease of use as an engagement motivational factor on customer e-trust and e-retention in online shopping. E-commerce companies must identify the ways of retaining customers on a long-term basis, as this leads to more profits and revenues (Lee *et al.*, 2009). This has been further buttressed by Lee *et al.* (2009) who stated that customers who are satisfied with a website's services not only repurchase from the same website but also become loyal. Thus, the concept of customer loyalty is important for retaining customers (Auf *et al.*, 2018; Rodríguez *et al.*, 2020). The customers who trust service providers are also the retained customers most of the time (Soyeun *et al.*, 2020) of the customers.

Theoretically, the present study is extending the line of discussion in the following ways. First, the present study has empirically investigated the important roles of website design, reliability and perceived ease of use as underlying factors of online CE which not only helps in developing strong customer e-trust during online shopping, but it will channelize in retaining existing customers. Second, we have empirically investigated the mediating role of e-trust between factors of CE and customer e-retention. Third, this study has provided practical insights for the practitioners to enable e-trust which is a response to online CE motivational factors that proved to be a prominent factor in enhancing e-retention among consumers.

2. Literature review

2.1 Theoretical background and concept development

Uses and gratification (U&G) theory forms the well-rooted explanation for the motivations customers develop to use media-enabled channels (Maslowska *et al.*, 2016). These motivations include both emotional and utilitarian factors, i.e. online information, hedonic entertainment, online social interaction and personal identity (Maslowska *et al.*, 2016). The literature (Malthouse and Peck, 2011) further elaborates on developing different ways of

engagement using U&G theory. CE is relying on different motivational factors consumers are seeking before interacting with online webstores (Busalim *et al.*, 2019). The massive usage of online e-commerce platforms, mobile marketing and social media marketing has made it compulsory for e-commerce webstore service providers to understand the motivational factors for interacting and engaging online customers (Busalim and Ghabban, 2021). A similar study (Larivière *et al.*, 2013) has extended the U&G theoretical axioms by adding convenience and monetary motivation in the context of mobile marketing. Furthermore, Muntinga *et al.* (2011) added remuneration and empowerment to extend the theoretical discussion on U&G theory. The present study has further added website design (creativity), reliability of the webstore/service provider and its perceived ease of using the website as the underlying dimensions of CE which will help the service providers for better and positive interaction with their customers.

CE is defined as "the establishment of a deeper, more meaningful bond between the organization and the customer" (Khan *et al.*, 2016). Respectively, CE is also relying on self-efficacy (Maslowska *et al.*, 2016). For instance, consumers use online platforms as a medium of purchasing and interacting with different services offered at the webstore (Shamim *et al.*, 2021). Therefore, the risk of minimum challenge a consumer is expecting from the online webstore shall exhibit more engagement behavior as compared to those having less self-efficacy and more risk associated with the online webstores. Thus, the fit between the regulatory orientation and the goal accomplishment (purchase/repurchase intention) are important as it will enhance the online engagement ties between the service provider and its customers.

Therefore, the present study extends the line of discussion by investigating the mitigating factors of CE which will enhance the e-trust with the webstore. The firm level of trust will contribute to developing a long-term e-retention with their customers. Furthermore, the mediating role of trust is important because despite having reliability, convenience and attractive design, customers shall only carry forward their relationship with the service provider if they are having a strong level of trust in the e-service provider. Table 1 explains the recent insights from the literature on technology adoption, technology innovation and CE.

2.2 Hypotheses development

2.2.1 Website design, customer e-trust and customer e-retention. Website design refers to the process of creating websites incorporating the aspects of Web page layout, content production and graphic design (Zhou *et al.*, 2009) which helps in developing positive interaction with the webstore. These multiple interactions help online firms to develop a strong level of trust among the customers. The quality of website design is a crucial factor in enhancing customer trust and retention in e-commerce (Basha *et al.*, 2020; Cho and Park, 2001). Research works by Giao *et al.* (2020) and Jiyoung *et al.* (2009) argued that website design significantly affects customer loyalty, trust, satisfaction and quality assessment of website retailers. In a similar vein, purchase intention is positively impacted by website design (Wardhani, 2020).

Customer e-retention refers to the customer's intention to purchase products or services from the same online channel/store again (ThakreemBanua, 2021). Customer retention in e-commerce is described as the customer's willingness to buy a product from the same retailer through online channels (Wen *et al.*, 2011). The willingness to purchase from the online platform is relying on different factors one of which is website design (Nam *et al.*, 2021). The attractive and creative website design helps the customers to engage with the store positively. Customers nowadays look for more catchy and appealing website designs

Table 1. Valuable insights from the past literature

Reference and methods	Key findings	Theoretical foundation
Amin *et al.* (2014); quantitative methods – structural equation modeling (SEM) – 302 valid responses	There is a positive relationship between PEOU, PU and mobile users' satisfaction. PU is positively related to trust and mobile users' satisfaction. Moreover, trust positively influences mobile users' satisfaction	The technology acceptance model and trust theory
Castaneda *et al.* (2007) Quantitative method using structural equation modeling (SEM)	The user's experience of the website played a moderating role. For less experienced users, perceived ease of use was found to be a more important factor in deciding to revisit the website, whereas perceived usefulness had more effect on more experienced users	The technology acceptance model and trust theory
Ozturk *et al.* (2016) – Quantitative; SEM; 396 valid responses	Convenience, compatibility and perceived ease of use (PEOU) had a significant impact on the users' loyalty intentions toward MHB technology. In addition, compatibility significantly influenced PEOU and convenience and PEOU had a significant impact on loyalty and convenience	The technology acceptance model
Mbama *et al.* (2018) – qualitative-thematic analysis	The attributes affecting DB experience are as follows: service quality, functional quality, perceived value, service customization, service speed, employee–customer engagement, brand trust, DB innovation, perceived usability and perceived risk. They affect customer experience, satisfaction and loyalty and financial performance	Digital marketing theory
Quantitative – structural equation modelling – 598 valid responses	Results reveal that the key website attributes, namely, website interactivity, website aesthetics, customization, ease of use and telepresence positively affect CE. The results also delineate positive associations between CE, customer trust and customer retention	The technology acceptance model (TAM) and the theory of planned behavior (TPB)
Islam *et al.* (2019) Field experiments – 295 valid responses	The results showed website interactivity enhances customer perceptions of usefulness and ease of using retail websites	The technology acceptance model (TAM)
Molinillo *et al.* (2021) Quantitative-SEM	The results showed that information and service quality are key antecedents of perceived value, whereas rewards and recognition and customization are nonsignificant	The technology acceptance model (TAM) and the theory of planned behavior (TPB)

Note: DB = Digital banking
Source: Authors' own work based on the past literature cited in the table

which helps them to explore more in terms of hedonic and utilitarian value outcomes (Chaouali and Souiden, 2022). Customer e-retention contributes to a firm's profits by saving the cost of attracting new customers; further, long-term customers purchase more, spread positive word of mouth, take less time to make a purchase and are less sensitive to product prices (Capponi *et al.*, 2020).

In addition to the findings of the previous research, (Chakraborty *et al.*, 2022), it can be argued that there are a variety of subjective elements that contribute to website design quality that can have an impact on customer perceptions of the brand. Not only that but both Giao *et al.* (2020) and Albayrak *et al.* (2020) indicate that the information shown on a website may influence users' levels of pleasure, which in turn can have substantial repurchases.

Based on the above discussion, the following hypotheses are proposed:

H1a. Website design positively influences customer e-retention in online shopping.

H1b. Website design has a positive effect on customer e-trust in online shopping.

2.2.2 Reliability, customer e-trust and customer e-retention. Reliability is described as the provision of the promised service/product in the given time frame with exact details displayed on the website, and as per customer expectations (Kim and Lee, 2002). Companies are trying to build e-trust and customer e-retention by providing reliable services (Zhu *et al.*, 2002). These reliable services are in other words developing positive CE with the webstores. Furthermore, calling and emailing customers are effective methods to reduce the uncertainty among customers regarding online shopping (Madad *et al.*, 2017). These methods are catered to develop positive engagement ties with the customers which results in developing a high level of trust among the customers. The reliability of a product or service is associated with the aspect of trust derived from accurate delivery and fulfilment of the terms and conditions of purchase (Alkhateeb, 2020; Wen *et al.*, 2011).

Furthermore, Ratnawati and Lestari (2018) claimed that a high degree of reliability in terms of favorable brand image would increase the likelihood of the choice of a brand for their consumer trust in the brand, hence, generating greater customer loyalty and decreasing market competition. Multiple studies, like those by Marliawati and Cahyaningdyah (2020) and Adiwidjaja (2017), corroborate this assertion by demonstrating the favorable impact of a positive brand image on customer loyalty. Indeed, trust is a major element that concerns customers during online shopping (Basha *et al.*, 2020; Kim and Lee, 2002). Thus, it is postulated that:

H2a. Reliability positively influences customer e-retention in online shopping.

H2b. Reliability has a positive effect on customer e-trust in online shopping.

2.2.3 Perceived ease of use, customer e-trust and customer e-retention. PEOU is the extent to which a customer finds a website and its interface easy to access and use (Moslehpour *et al.*, 2018). Past scholars have reported that perceived ease of use is considered as a crucial element for retaining customers (Vatolkina *et al.*, 2020; Wen *et al.*, 2011; Flavián *et al.*, 2006). Online shopping and visits to a website are increased if customers find the website easy to use (Koufaris, 2002). In addition, perceived ease of use has a positive impact on repurchasing (Alkhateeb, 2020; Basha *et al.*, 2020). Customers' perceived ease of shopping on a Web-based store can increase their e-trust and e-retention concerning future purchase transactions (Escobar-Rodriguez and Monge-Lozano, 2012; Silitonga *et al.*, 2020). Customers avoid using

a technology-enabled platform that is difficult to comprehend. Instead, they will look for alternatives that provide the same activities but are easier to learn (Wilson *et al.*, 2021).

Recent studies, for instance, Daud *et al.* (2018) and Balci (2021), discovered that perceived ease of use and perceived usefulness both had a substantial influence on influencing customers' repurchase intentions via trust within the e-commerce industry. Furthermore, Maryanto and Kaihatu (2021) discovered that perceived usefulness and perceived ease-of-use both positively and significantly increase consumer loyalty through trust. Similarly, Mulyaningsih (2022) noted that perceived ease-of-use and usefulness strongly influenced customers' levels of trust in a system or technology, which in turn influenced and impacted the creation of loyalty in the consumers' perceptions.

Therefore, it is hypothesized that:

H3a. Perceived ease of use positively influences customer e-retention in online shopping.

H3b. Perceived ease of use has a positive effect on customer e-trust in online shopping.

2.2.4 Mediating role of e-trust. Trust refers to the expectation of one party concerning the motives of the other party (Casalo *et al.*, 2008). E-trust among customers is a crucial part of e-commerce transactions (Raman, 2020). Past studies have found that trust plays a mediating role while measuring purchase intention (Dang *et al.*, 2020; Irshad *et al.*, 2020). Likewise, Pavlou and Chai (2002) and Rauyruen and Miller (2007) noted the significant role of trust as a mediator in determining customer repurchase intention, which in turn enhances customer satisfaction. E-trust positively influences consumer behavior as consumers will not engage in e-commerce transactions if they do not trust the store (Marriott *et al.*, 2017; Shilpa and Rathi, 2020; Silitonga *et al.*, 2020).

In recent studies, for instance, Boateng (2018) and Nguyen and Khoa (2019), trust has a more substantial impact on influencing consumer loyalty than satisfaction does. These results were supported by different studies (Al-Adwan *et al.*, 2020; Aslam *et al.*, 2020), who found that trust had a favorable effect on consumer loyalty. Researchers Bulut and Karabulut (2018), Riquelme *et al.* (2019) and (Wilis and Nurwulandari, 2020) all came to the same conclusion: trust increases consumer loyalty. As with the concept of satisfaction, the connection between trust and loyalty has become one of the most talked-about and popular topics in market research. This is because it will always be interesting to fully understand how consumers' trust in a company could eventually affect their loyalty to that company which can be achieved by the customer retention.

Given this understanding, the following hypotheses are posited:

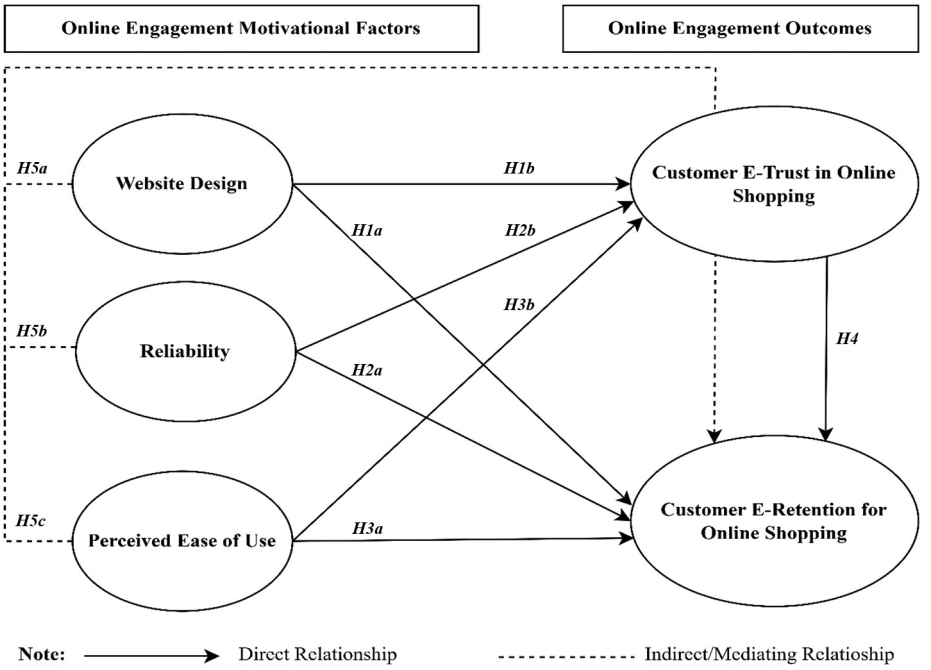
H4. E-trust positively influences customer e-retention in online shopping.

H5a. E-trust mediates the relationship between website design and customer e-retention in online shopping.

H5b. E-trust mediates the relationship between reliability and customer e-retention in online shopping.

H5c. E-trust mediates the relationship between perceived ease of use and customer e-retention in online shopping.

Based on the aforesaid literature, the proposed research framework is illustrated in Figure 1.



Source: Authors' own work

Figure 1.
Research framework

3. Methodology

3.1 Study design

The study design was based on positivist research philosophy. The nature of the study was cross-sectional as the data was collected at one point in time and from multiple respondents. The research approach was deductive. Data was collected from public higher education institutions in Malaysia. The higher learning institutions were selected because of the maximum likelihood of the chance for respondents to meet the study criteria. Furthermore, we have designed an exclusion criterion where only those respondents who have been involved in online shopping will be asked for the data collection. We have designed an initial question that we further standardized as only those respondents who have been involved in online shopping behavior were asked to fill out the questionnaire. We have used a purposive sampling technique to extract the potential sample from the pool of the population.

3.2 Sampling procedures

As part of quantitative research, a self-administered questionnaire was provided to 300 young e-shoppers, who were selected via the purposive sampling technique. The participants were the students of a public higher learning institution in northern Malaysia who are frequent customers of online stores. Each questionnaire was directly handed to the participating consumers in a sealed envelope with a pencil. To reduce participation referrals, the researchers explained the study's purpose and the survey were only distributed to those who showed a willingness to participate and spend a minimum of 10–15 min to complete it.

Variable	Cases (%)
Gender	
Male	135 (45.76)
Female	160 (54.24)
Age	
19–24	105 (35.59)
25–34	135 (45.76)
35–44	55 (18.6)
Education	
Bachelor's degree	127 (43.05)
Master's degree	121 (41.01)
PhD	47 (15.94)
Nationality	
International	139 (47.12)
Local	156 (52.88)
Online shopping experience	
1–2 times	39 (13.22)
3–5 times	65 (22.03)
6–10 times	191 (64.75)
Internet usage experience	
1–2 years	30 (10.17)
3–4 years	58 (19.66)
5–6 years	122 (41.35)
7–10 years	85 (28.82)

Source: Authors' own work

Table 2. Demographic characteristics of respondents

Direct distribution of questionnaires minimizes bias and confirms the anonymity and confidentiality of the respondents.

A total of 295 responses were completed and used for data analysis. This sample size was considered adequate based on Hair *et al.*'s (2014) suggestion that a tolerable sample size should be more than 100 cases. As shown in Table 2, 46% of the respondents were female and 54% were male; 52.88% of them were local students and 47.12% were international students, while most of the participants were pursuing their bachelor's degrees. Sixty-five percent of respondents had shopped online from six to ten times while 70% of the e-shoppers were internet users for the past five years.

3.3 Questionnaire development

A two-section questionnaire was prepared, encompassing the demographic characteristics of the respondents and perceptions of online customers. Section A collected information on the participants' gender, nationality, education, online shopping experience and internet usage experience. Section B recorded the perceptions of online customers regarding e-trust, website design, reliability, perceived ease of use and customer e-retention. The construct of website design was evaluated using the four items adapted from Zhou *et al.* (2009), and reliability was measured using the four items developed by Kim and Lee (2002). Four items were adapted from Escobar-Rodriguez and Monge-Lozano (2012) to measure the perceived ease of use, whereas e-trust was tested using the five items

developed by Gefen *et al.* (2003). Finally, customer e-retention was examined using the three items adapted from Wen *et al.* (2011).

4. Data analysis

4.1 Partial least square structural equation modeling

The partial least square structural equation modeling (PLS-SEM) approach was performed via a two-stage assessment:

(1) the measurement model; and

(2) the structural model.

The first was performed to conduct a psychometric analysis of the construct measures in terms of their validity and reliability, whereas the latter was executed to check the strength of the hypothesized relationships.

4.2 Outliers and common method bias

First, multivariate outliers with a significance level of more than 0.001 were identified and deleted as Lynch (2013) recommended. Given the single source of the data, both procedural and statistical remedies were applied to avoid potential common method variance (Podsakoff *et al.*, 2012). The variables' measurements were placed randomly (Podsakoff *et al.*, 2012). Furthermore, a shorter version of the behavioral intention measurement ensured no overlapping between constructs (e.g. Patwary *et al.*, 2022). Harman's single-factor test was also applied, indicating that a single factor explained only 16.54% of the total variance of 63.23%. Because this value was less than 50%, it can be established that the data did not have a common method variance (Podsakoff and Organ, 1986).

4.3 Measurement model assessment

In the measurement model, reliability, convergent validity and discriminatory validity of the constructs were assessed. Cronbach's alpha and composite reliability (CR) were used to evaluate the internal consistency reliability. As shown in Table 3 that is explaining the measurement model, the values for both measures exceeded the threshold value of 0.70, inferring adequate reliability (Hair *et al.*, 2018). Meanwhile, convergent validity was measured to determine whether the loadings of measuring items were above 0.60, and the average variance extracted (AVE) value surpassed 0.50. In the present study, both requirements were met (i.e. item loadings range between 0.736 and 0.880 and AVE ranges between 0.557 and 0.757). Thus, these results confirmed the convergent validity of the construct measures used (Bagozzi and Yi, 1988; Hair *et al.*, 2018).

Discriminant validity was evaluated by verifying whether the square root of AVE was higher than the interconstruct correlation coefficients and whether the heterotrait–monotrait (HTMT) ratios were less than 0.85, as suggested by Henseler *et al.* (2015). Table 4 reports that the correlation coefficients varied between 0.282 and 0.843, and the square root of the AVE exceeded these (Fornell and Larcker, 1981). These results establish discriminant validity.

4.4 Structural model assessment

The structural model was assessed by calculating the coefficient of determination (R^2) and the path coefficients via a bootstrapping procedure of 5,000 resamples. Table 5 and Figure 2 show that website design had an insignificant impact on customer e-retention in online shopping ($\beta_1 = 0.004$, t-value $= 0.102$, $p > 0.05$); hence, *H1a* was not supported. Besides,

	Loadings
Website design (WD) Adapted from Zhou *et al.* (2009) – $\alpha = 0.737$, CR = 0.834, AVE = 0.557	
Overall, online shopping websites work very well, technically	0.736
Visually, online shopping websites resemble other websites I think highly of	0.758
The online shopping websites are simple to navigate	0.742
The online shopping websites clearly show how I can contact or communicate with it	0.748
Reliability adapted from Kim and Lee (2002) – $\alpha = 0.873$, CR = 0.913, AVE = 0.725	
The online stores deliver on its undertaking to do certain things by a certain time	0.848
The online stores show a sincere interest in solving customer problems	0.838
Transactions with the online stores are error free	0.855
The online stores have adequate security	0.863
Perceived ease of use (PEU) Adapted from Escobar-Rodriguez and Monge-Lozano (2012) – $\alpha = 0.880$, CR = 0.917, AVE = 0.735	
I don't make mistakes when using the online stores	0.837
Interacting with online stores is often pleasant	0.879
I do not need to consult the user manual often when using an online store	0.858
They are interacting with online stores, which does not require a lot of mental effort	0.856
Online trust (ET) adapted from Gefen *et al.* (2003) – $\alpha = 0.886$, CR = 0.917, AVE = 0.688	
I feel safe in my transactions with the website/online stores	0.852
I believe online stores can protect my privacy	0.848
I select online stores, which I believe are honest	0.842
I feel that online stores would provide me with good service	0.859
I feel that online stores are trustworthy	0.740
E-retention (ER) adopted from Wen *et al.* (2011) – $\alpha = 0.839$, CR = 0.903, AVE = 0.757	
I intend to continue using online shopping rather than discontinue its use	0.884
My intention is to continue using online shopping rather than use traditional shopping	0.846
If I could, I would like to continue shopping online as much as possible	0.880

Source: Authors' own work

Table 3. Construct reliability, Cronbach's alpha, CR and AVE of latent variables

Variables	1	2	3	4	5
(1) E-trust					
(2) E-retention	0.843				
(3) Perceived ease of use	0.726	0.824			
(4) Reliability	0.734	0.799	0.674		
(5) Website design	0.350	0.318	0.337	0.282	

Source: Authors' own work

Table 4. Discriminant validity (HTMT)

website design had a noteworthy relationship with e-trust in online shopping ($\beta_2 = 0.093$, t-value = 2.045, $p < 0.05$), signifying that *H1b* was supported.

In addition, reliability positively impacted customer e-retention in online shopping ($\beta_3 = 0.265$, t-value = 5.761, $p < 0.05$), thereby supporting *H2a*. Likewise, reliability also positively influenced customer e-trust in online shopping ($\beta_4 = 0.402$, t-value = 7.262, $p < 0.05$), which indicates that *H2b* was accepted. Further inspection of the linkages between perceived ease of use and customer e-retention in online shopping produced significant results whereby $\beta_5 = 0.326$, with t-value = 5.771 at $p < 0.05$. Therefore, *H3a* was supported. Likewise, perceived ease of use also had a positive association with online trust ($\beta_6 = 0.384$, t-value = 6.846, $p < 0.05$), supporting *H3b* as expected. Moreover, *H4*, which posited that

e-trust positively influences customer e-retention in online shopping was also supported ($\beta_7 = 0.348$, t-value $= 6.599$, $p < 0.05$).

The R^2 of the present study was tolerable (i.e. e-trust $= 0.532$ and e-retention $= 0.664$) as it exceeded 0.10, a threshold set by Falk and Miller (1992) and Hair *et al.* (2010). Besides, the results of Stone–Geisser's (Q^2) value by using a blindfolding procedure for e-trust ($Q^2 = 0.363$) and e-retention ($Q^2 = 0.501$) were above 0, signifying that the current research model is satisfactory and has a high predictive relevance (Hair *et al.*, 2014).

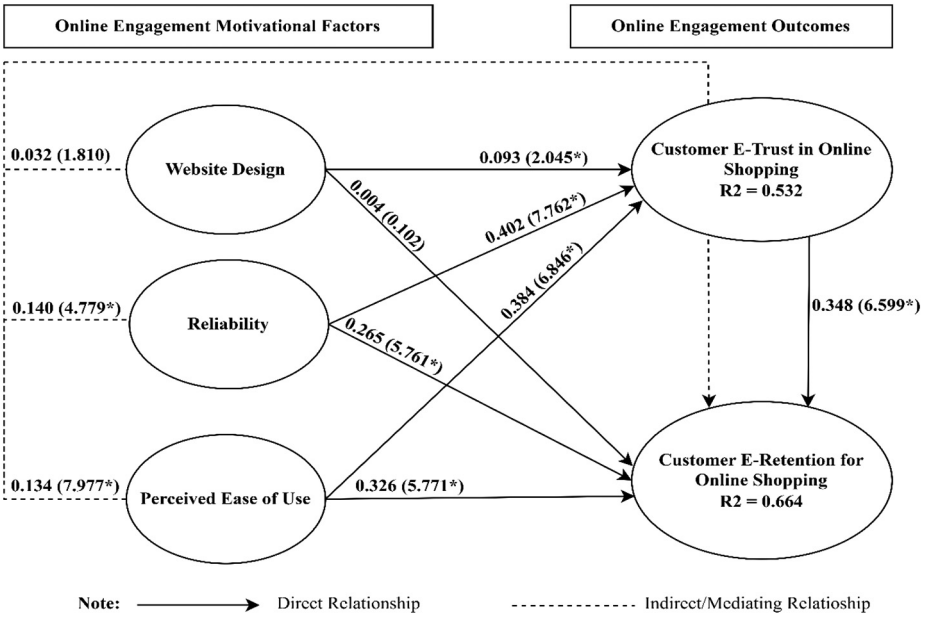
4.5 Mediating effect of e-trust

The path analysis of the indirect effects of website design, reliability and perceived ease of use on customer e-retention in online shopping that are mediated through e-trust is

Relationship		Beta	SE	t-values	Result
H1a	Website design —> E-retention	0.004	0.036	0.102	Not supported
H1b	Website design —> E-trust	0.093*	0.045	2.045	Supported
H2a	Reliability —> E-retention	0.265*	0.046	5.761	Supported
H2b	Reliability —> E-trust	0.402*	0.055	7.262	Supported
H3a	Perceived ease of use —> E-retention	0.326*	0.057	5.771	Supported
H3b	Perceived ease of use —> E-trust	0.384*	0.056	6.846	Supported
H4	E-trust —> E-retention	0.348*	0.053	6.599	Supported

Note: *$p < 0.05$
Source: Authors' own work

Table 5.
Relationships with e-retention and e-trust



Source: Authors' own work

Figure 2.
Hypotheses results

presented in Table 6. The analysis was performed using a bootstrapping method in the PLS-SEM approach. Contrary to the expectations, the indirect effect of website design on customer e-retention through e-trust in online shopping was insignificant ($p > 0.05$). Thus, it can be conjectured that e-trust does not mediate the association between website design and customer e-retention. Hence, *H5a* was not supported as website design has neither a direct nor an indirect effect on customer e-retention in online shopping through e-trust. Table 6 presents the mediation results.

An examination of the indirect effect of reliability on customer e-retention through e-trust in online shopping yielded a significant relationship ($p < 0.05$). Therefore, it can be deduced that e-trust mediates the association between reliability and customer e-retention in online shopping. Consequently, *H5b* was supported. To be specific, reliability has direct significant effects on e-retention, and when the association between them is mediated through e-trust, the indirect effect is also significant, resulting in a full mediation.

Next, *H5c* was tested to inspect whether e-trust mediates the association between perceived ease of use and customer e-retention while shopping online. The indirect effect of perceived ease of use on customer e-retention through e-trust was significant. Thus, it can be concluded that e-trust mediates the association between perceived ease of use and customer e-retention. Thus, *H10* was supported. The direct association between perceived ease of use and e-retention is significant, and when it is mediated through e-trust, the indirect effect is also significant, resulting in a full mediation.

5. Discussion, implications and agenda for future research

5.1 Discussion of findings

The discussion is as follows: first, the findings revealed that website design does not have a noteworthy relationship with customer e-retention in an e-commerce setting. The results explain that e-retention is based on the level of trust which is gauged by the engagement ties with the webstores. The regulatory engagement theory which advocates that the strength of engagement increases when an individual overcomes certain challenges are in line with the findings of this study. Customers first engage with the webstore through multiple interactions (Shamim *et al.*, 2021). These interactions will develop trust with the service provider which will in the next stage enhance the chances of customer retention (Kumar *et al.*, 2021). The findings of the study reveal significant insights where website design positively develops e-trust among the customers and enhances the chances of customer e-retention in the online shopping context. Hence, the findings do not support *H3a* but support *H2a*. The result signifies those customers highly acknowledge the online shopping websites' navigability and how they can contact or communicate with them. These results support the findings of prior studies that having an attractive web design enhances e-trust and increases e-retention among customers (Fimberg and Sousa, 2020; Masele and Matama, 2020; McKnight *et al.*, 2002; Rahimnia and Hassanzadeh, 2013).

Relationship		Beta	S.E.	*t*-values	Result
H5a	Website design —> E-trust —> E-retention	0.032	0.018	1.810	Not supported
H5b	Reliability —> E-trust —> E-retention	0.140*	0.029	4.779	Supported
H5c	Perceived ease of use —> E-trust —> E-retention	0.134*	0.027	4.977	Supported

Table 6.
Mediation results

Note: *$p < 0.05$
Source: Authors' own work

Second, reliability uncovered positive and significant influence on e-trust and e-retention of customers in online shopping. This indicated that error-free transactions, as well as adequate security assurance, increase the reliability of online stores which enhances the positive engagement ties (Vásquez, 2020), as online customers see low risks in terms of delivery, payment, information breaches, etc. with online retailers compared to traditional retailers. Online customers may, therefore, tend to deal with online retailers, whom they perceive as reliable. Thus, *H1a* and *H4* were reinforced as expected. These results are consistent with the results of previous studies, which also found that positive perceptions of customers regarding the reliability of the online seller led to online retention (Basha *et al.*, 2020; Jiyoung *et al.*, 2009).

Third, the findings have provided a significant relationship between perceived ease of use and e-retention in online shopping. Convenience is another motivation for the customers as advocated by U&G theory which engages the customers positively to stay with the webstore for a long time (Hicks *et al.*, 2012; Huang and Zhou, 2018). This long-term engagement tie is again based on the level of trust with the service provider which is accessed by spending time with the webstore through multiple interactions (Li *et al.*, 2020). Hence, *H3b* was supported. Likewise, *H2b*, which posits that this factor affects customer e-trust in online shopping, is also supported. The possible reason for this could be that interacting with online stores is frequently pleasurable and does not involve much mental effort. Customers do not need to consult the user manual often when shopping at an online store. This ease of online shopping contributes to the enhancement of customers' e-retention and e-trust. The results echo the findings of past studies that perceived ease of use is a significant contributor to customer e-trust and e-retention in online shopping (Basha *et al.*, 2020; Jiyoung *et al.*, 2009; Vatolkina *et al.*, 2020).

Fourth, our findings support *H1b* are in line with the previous studies (Shilpa and Rathi, 2020; Silitonga *et al.*, 2020). Customers feel that their transactions with the website and online stores are safe and that the platforms are trustworthy and protect their privacy. They also believe that online stores would provide them with good services.

Finally, the mediation effect of e-trust on the relationship of website design, reliability and perceived ease of use with customer e-retention in online shopping is further explored in *H5c*, *H5b* and *H5a*, respectively. *H5c*, which states that e-trust mediates the association between website design and customer e-retention in online shopping, was not supported. A possible explanation for this insignificant result could be that, although the website's design influences customer e-trust, it is not considered a vital factor in influencing customer e-retention in online shopping, particularly in the Malaysian setting.

For *H5b*, findings have revealed that e-trust mediates the association between reliability and customer e-retention in online shopping. The possible rationale for this significant result could be that the reliability of the products or services in online stores is associated with the aspect of trust derived from the accurate delivery and fulfillment of the terms and conditions related to a purchase (Hsu *et al.*, 2017), and trust is a major element that customers are concerned with during online shopping (Alkhateeb, 2020; Basha *et al.*, 2020). Therefore, online retailers continuously try to build customer e-trust and e-retention by providing reliable online shopping services. Likewise, the findings infer that e-trust significantly played a role in mediating the relationship between perceived ease of use and customer e-retention, thereby supporting *H5a*. The possible reason behind this could be that when customers find online shopping easy, their trust increases, making them more likely to engage in repeat purchases at the store and eventually resulting in increased e-retention (Silitonga *et al.*, 2020).

5.2 Theoretical implications

Theoretically, this study contributes to the body of knowledge in the following ways. First, we have conceptualized the website design, reliability and perceived ease of use as an engagement motivational factor. CE primarily is relying on different motivational factors consumers are seeking before interacting with online webstores (Busalim *et al.*, 2019). The positive integration of these antecedents significantly engages the customers with the webstores. We argue that reliability and perceived ease of use are most important for CE with the webstores. Second, we argued that positive engagement with the webstores significantly develops an e-trust among the customers which will help to capture customers' e-retention in an online context. This study has conceptualized e-trust and e-retention as engagement outcomes. Therefore, we delineate an understanding of engagement outcomes that resides in e-trust and e-retention. The case in this point entails that the convenient, reliable and attractive design of the website eliminates several challenges customers encounter while interacting with the online services at the webstore. These challenges eliminate the risk of shifting from the webstore. The long-term interaction with the webstore/service provider develops a certain level of trust among the customers which will help the service providers to retain their customers for a long time (Rana *et al.*, 2021). Finally, we have explored the role of e-trust as a mediator between consumer engagement and e-retention characteristics. Customers' e-trust plays an eminent role to build a strong relationship between the webstores and online customers. This study has proposed that e-trust is one of the important contributors that mediates a relationship of engagement motivational factors and engagement motivational outcomes. Customers despite having an attractive webstore and ease of operating a webstore will avoid to shop if there is less or no element of trust between two parties.

5.3 Practical implications

This study has provided several implications which are as follows. First, based on the empirical insights we advise the online shoppers to enhance the website reliability and incorporate attractive and unique features with ease of usability. Customers are most attracted to the webstore which is providing these three features. These features will help the online webstore managers to create a high level of motivation among the customers to engage with the webstore. Second, we have proposed that e-trust is an important mediator that allows the managers to enhance customer e-retention with the webstore. Trust is an important foundation for developing a strong relationship between firms and customers (Abid *et al.*, 2023). Customers' level of trust in the webstore is a significant predictor of persons' expectations in monetary exchanges. Credibility and reliability in honoring legal and informal responsibilities may increase customer loyalty. The results suggest that e-commerce sites may use the perception of reliability to their advantage. We advise company heads to increase customer trust by capitalizing on existing connections to prove credibility. Consumers will have a positive impression of the seller's reliability if their expectations are met. Companies operating in the digital era need to consider the benefits their customers receive against the costs of providing such products/services.

5.4 Limitations and future recommendation

The limitations and future research directions are as follows. Because the study has used the self-rated survey questionnaire for data collection, which affirms that there may be some sort of response bias among respondents even though the required tests are also performed to identify the such issue. Second, it is suggested that future studies must consider the different data collection approaches such as they can use supervisor and employee ratings,

or they can have interviews for data collection. Third, future research studies should consider the role of customers' self-construal and value co-creation to enhance value-in-experience in the online webstore engagement context (Shamim *et al.*, 2023; Abid *et al.*, 2022). Fourth, future research should investigate the CE, e-trust and e-retention using neuro devices such as EEG as a different analytical lens (Siddique *et al.*, 2023). Besides, future research may consider other mediators such as customer e-security and e-satisfaction, which might provide a deeper understanding of online customer retention. Because website design revealed a significant positive effect on e-trust, future studies should evaluate the influence of different dimensions of website design including product display, color, text and background on online customer retention.

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