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## Adapting to the digital age: Strategies for enhancing customer engagement and retention in e-commerce

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### Abstract

This research investigates the correlation between customer e-retention (ERT) and various motivational factors of customer engagement, including website design (WD), reliability (RL), and perceived ease of use (PEU). Furthermore, this research was designed to test several mediating factors, including customer e-trust (OT) and customer e-satisfaction (EST), towards customer e-retention (ERT). This research applied a method of purposive sampling to 256 respondents. AMOS employs the Structural Equation Model (SEM) for data processing. This research found that ERT is influenced by reliability (RL), perceived ease of use (PEU), and customer e-trust (OT). Furthermore, two factors do not affect customer e-retention: website design (WD) and customer e-satisfaction (EST). In response to these findings, it is recommended that more attention be paid to building customer engagement and motivation to retain customers online. This may include the quality of information on the website, visual quality, and ease of use.

*Keywords: customer e-retention; website design; reliability; perceived ease of use; customer e-trust; customer e-satisfaction*

### Introduction

The current digital era forces businesses to continue to change traditional marketing patterns into integrated marketing that customers can access through various marketing channels. In the digital era, companies must adapt to new ways of reaching and interacting with customers who increasingly rely on technology and online platforms (Pascucci et al., 2023). Conventional marketing, which depends on print ads, radio, and television, has market segmentation and message personalization limitations. In contrast, digital marketing allows for more direct and personalized customer interactions through social media, email, and data-driven advertising. However, the main challenge lies in how companies can effectively leverage digital technologies to create engaging and meaningful customer experiences, enhancing customer engagement and loyalty amid intensifying competition. This change in marketing patterns is expected to involve customer engagement which represents one of the company's efforts to stay connected with the customer toward a better understanding of the customer, increasing customer loyalty, customer satisfaction, and commitment (Ijaz et al., 2016; Kumar & Lata, 2021; Wagner et al., 2018). Customers who actively engage in the marketing process of the company demonstrate a greater possibility of taking part in purchases and recommending the products and services to their friends and family by providing positive reviews (Pansari & Kumar, 2016). Therefore, to build a good relationship with customers, the company needs to implement the right customer engagement strategy.

Customer engagement (CE) can serve as a method for businesses to retain customers and foster relationships with them. When customers are well-engaged with the company, it will increase purchases

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and create repurchase intentions (Tuti & Sulistia, 2022). To increase the likelihood of customers making post-purchase interactions, retailers need to motivate customers to keep coming back to their online shopping sites. Customer engagement in creating online reviews can influence customer purchasing decisions (Thakur, 2018), which leads to customer retention (Saoula et al., 2023). Several factors, including the website design, reliability, and how users perceive it, can inspire consumer participation in the subject of online marketing (Saoula et al., 2023). Several factors are important in getting customers to make an online purchase transaction and write a positive review about the online store. In the end, by building strong relationships through customer engagement, companies can retain existing customers.

For e-commerce companies, customer retention is a major concern. By building a customer retention program, companies can increase their profitability (Giao et al., 2020). Efforts to retain customers have the lowest costs compared to the costs of acquiring new customers (Ali et al., 2010). Customer retention is significantly and positively correlated with customer experience and satisfaction, serving as mediators (Sohail et al., 2023). Moreover, this will have an impact on increasing online business, increasing the number of customers, and increasing company profitability. Some studies argue that the concept of retention differs from one situation to another, and some define customer retention as customer loyalty and repurchase intentions.

To increase customer retention through customer engagement, companies need to pay attention to web design development. Effective customer engagement in digital marketing is closely linked to website design, as a well-designed website can significantly enhance the user experience and encourage deeper interactions. When online consumers perceive the superior quality of e-services, they are more likely to place a high value on the service and subsequently develop customer retention. To be successful in e-commerce, companies should consider consumer preferences on their websites. Consumers have become more discerning in their utilization of online purchasing platforms due to the convenience associated with accessing information from numerous sites. Navigation design, content design, interactive design, and visual design are the four website design attributes that have gained prominence. This can affect consumer attitudes and behavior on e-commerce sites (Hsin Chang & Wang, 2011).

Websites represent how consumers and retailers communicate in e-commerce. Through the website, both parties can communicate and share information related to products and services. The website design should be user-friendly, attractive, and interactive to build a better relationship between consumers and retailers. Hence, website design can be regarded as a critical procedure within the realm of e-commerce. The availability of online shopping websites is so widespread and easy that retailers must know consumer attitudes and behaviors to meet consumer needs and gain an appropriate position in the current competitive environment (Rosário & Raimundo, 2021). In addition, to maintain customer engagement, the company should consider the reliability of the website.

Reliability and trust are the factors that influence consumers in choosing online merchants, especially in terms of product delivery, warranty, and product returns. Online retailers ensure timely delivery of purchased products to consumers, offer a refund policy if the goods fail to reach the consumer's designated address, and provide a return policy for products that do not meet the consumer's expectations (Barusman, 2019). People are more likely to interact with the company's website when they perceive it as a reliable and credible platform for product research and evaluation, as well as for giving comments and reading reviews of the goods and services. Perceived reliability serves as a driving force for customers to contribute online reviews on social media platforms (Basha et al., 2021). By ensuring that the website is reliable and has met customer criteria, the company can build customer trust.

Furthermore, the significance of customer trust as a link between the aforementioned factors and customer retention adds to the conversation about online engagement and its ability to increase customer e-retention. Customers who exhibit greater interaction with an e-commerce platform due to its user-friendly interface, reliable operations, and innovative design are more inclined to cultivate a substantial degree of confidence in the e-service provider (Tran & Vu, 2019). Diverse utilitarian and affective factors contribute to the formation of these relationships, which assist e-service providers in customer retention. Due to the abundance of competitors, the most difficult aspects of online purchasing are retaining customers and fostering loyalty (Choi, 2020). However, previous research has not concentrated on integrating an integrated view of these online retail success factors into a systematic research model. Therefore, further empirical research on these aspects is needed.

This research takes the case of repurchase intentions that come from customer trust and satisfaction provided by service providers in the context of online shopping. Therefore, this research defines the concept of e-retention as the behavior of customers who make repeated purchases online. To address the identified gaps, this study aims to explore the inconsistencies of previous research which states that website design does not influence e-customer retention (Saoula et al., 2023). Meanwhile, other studies mention that website

design influences customer retention (Al-Debei et al., 2021) and customer trust (Permatasari & Kartikowati, 2018).

This research uniquely examines the impact of customer engagement motivational factors on customer e-retention, by adding customer e-satisfaction to provide a new perspective from previous research. This research contributes to understanding the important role of customer engagement in forming strong customer trust and satisfaction in online purchases, but also helps in retaining existing customers. This research provides a theoretical explanation of the important role of online trust in mediating the effect of website design on customer e-retention, where an easy-to-navigate and trustworthy website can make customers feel more satisfied and more likely to make repeat purchases. This study extends the existing literature by providing empirical evidence of this dynamic, providing practical insights for practitioners to implement effective strategies to maintain long-term relationships with their customers through customer trust and improving website navigation and information design can significantly improve website usability, while visual design strongly predicts customer satisfaction in the digital era.

## Literature Review

### Uses and Gratification (U&G) Theory

U&G theory is a way of thinking about communication that explains the reasons and means that people use to seek media to fulfill certain needs. This theory assumes that service users are not passive media consumers, but rather involved in how they understand and use information in their daily lives. This idea has been used for different kinds of media, like social media and online sites (Falgoust et al., 2022; Hossain, 2019). Peck & Malthouse (2010) provide an objective explanation of the development of different types of engagement using U&G theory. According to Busalim et al. (2021), customer engagement with an online store is contingent upon a multitude of motivational factors that consumers actively pursue before doing so. Prior research has further developed the theoretical underpinnings of U&G by incorporating convenience and financial motivation elements within the domain of mobile marketing (Larivière et al., 2013). Furthermore, the study by Muntinga et al. (2011) expands the theoretical discussion in U&G theory by including remuneration and empowerment factors. In addition, the research identifies perceived ease of use of the website, website design, and reliability of the web store as foundational components of customer engagement that have the potential to enhance customer interactions.

Customer engagement (CE) refers to the more profound and significant exchange that takes place between a business and its customers (Khan et al., 2016). Self-efficacy is another factor that influences CE (Khan et al., 2016). For example, people utilize digital platforms to purchase and interact with various services offered in web stores (Shamim et al., 2023). Therefore, consumers with higher self-efficacy and lower perceived risk of online stores are more likely to engage with online stores. To increase online engagement, service providers need to align their regulatory direction with their customers' goals of purchase or repurchase intention.

### Website design towards customer e-retention and customer e-trust

Website design encompasses the integration of visualization, website structure, and material creation to produce an online platform that facilitates favorable engagements between the online store and its customers (Zhou et al., 2006). Enhancing customer engagement can be achieved by improving the design, reliability, and user-friendliness of a website (Saoula et al., 2023). Previous research has shown how brand image, interaction with customers, website quality, and e-trust have a substantial impact on online repurchase intentions (Akbaruddin, 2023). When a website has a well-designed appearance, customer interest in the product and reasons for choosing and using it will be strengthened, and vice versa (Kusumo, 2020)

Furthermore, the research findings also indicate that attractive websites and online application designs make consumers perceive that their privacy is properly protected when carrying out online application transactions. Ensuring customer satisfaction is a crucial determinant in establishing enduring customer connections. Therefore, it can be said that website design can influence customer retention (Al-Debei et al., 2021). Other research also states that information and visual design of websites positively influence customer trust (Permatasari & Kartikowati, 2018).

To develop and maintain long-term customer relationships, e-commerce companies must deliver superior online services that satisfy the needs of customers. Based on research findings from Alayli (2023), optimizing e-services, website design, and operational capabilities can enhance customer loyalty and retention by providing a seamless and satisfying experience. On the other hand, according to Giao et al. (2020), customer trust can be influenced by the information displayed on a website, which subsequently impacts their decision to engage in future purchases.

Following the above explanation, the subsequent hypothesis is put forward:

**H1.** Website design has a positive impact on customer e-retention

**H1a.** Website design also has a positive impact on customer e-trust

### **Reliability towards customer e-retention**

The capacity to deliver promised services in a timely, accurate, and satisfactory fashion is referred to as reliability. It is a fundamental characteristic of service quality. It has been demonstrated through research that reliability positively affects customer retention (Seleke, 2013). According to the concept of customer value proposition, customers are retained when their needs are met, and they are satisfied with the services provided. Emotional (affective) engagement also strengthens customer retention. Furthermore, the literature review suggests that service reliability positively impacts customer retention, as measured by repurchase intention.

Previous research has established a positive influence between reliability and customer e-retention (Saoula et al., 2023). To increase customer e-retention and e-trust, the organization aims to provide customers with reliable services that cultivate substantial customer engagement with the online store. Additionally, service reliability is associated with customer trust, as demonstrated by the suitability of delivery and purchase conditions (Alkhateeb, 2020; Wen et al., 2016).

Following the above explanation, the subsequent hypothesis is put forward:

**H2.** Reliability has a positive impact on customer e-retention

### **Perceived ease of use towards customer e-retention and customer e-satisfaction**

Perceived ease of use is evaluated based on whether customers perceive the website's interface as easily accessible and understand (Moslehpour et al., 2018). It is important to maintain this perception to encourage customers to continue using online shopping sites. Customers are less motivated to purchase a product or technology that they perceive as challenging to learn and time-consuming, instead choosing alternatives that offer equivalent functionality. The ease of learning about a service before using it is a criterion for assessing perceived ease of use; this factor can influence a user's trust in the service (Suhendra et al., 2023). Enhancing customer satisfaction through seamless online interactions with service providers might result in a remarkable experience (Nugraha et al., 2022).

Based on the research conducted by Olivia & Marchyta (2022) shows that the speed and ease of understanding an e-service is the most critical factor in determining perceived ease of use. Therefore, e-service providers should develop user-friendly systems with interactive tutorials and help features to facilitate quick and easy implementation. Research supports the above explanation by demonstrating that perceived ease of use positively influences repurchase intentions (Alkhateeb, 2020; Basha et al., 2021). Moreover, studies have shown that perceived ease of use directly or indirectly affects customer repurchase intentions and satisfaction within the e-commerce sector (Wilson, Alvita, et al., 2021). To accomplish this, the company must develop and utilize state-of-the-art systems and technology to facilitate customer access to online shopping platforms.

Following the above explanation, the subsequent hypothesis is put forward:

**H3.** Perceived ease of use has a positive impact on customer e-retention

**H3a.** Perceived ease of use has a positive impact on customer e-satisfaction

### **The mediating role of customer e-trust**

According to Silitonga et al. (2020), trust between customers is a key factor in keeping customers on e-commerce sites. The study suggests that simple transaction characteristics and customer trust are key determinants of customer retention. Additionally, adaptation factors, contact interactivity, caring, and personality generate a correlation and positive impact on customer trust and retention. Research indicates that e-commerce managers and e-sellers have successfully met customers' needs through personalized services. Other studies have shown that customer trust is positively correlated with repurchase intentions (Rita et al., 2019).

The appearance of a website is a crucial factor for customers. A well-designed website can leave a positive impression on customers and assist e-sellers in generating repeat purchases. To enhance the personalization factor, incorporating innovation in contact interactivity, care, and personality can provide a competitive advantage in building trust during the initial stages of purchase and maintaining customer retention on e-commerce sites. This aligns with previous research findings that online retailers can increase customers' trust and retention for future transactions by facilitating online purchasing. (Silitonga et al., 2020). The degree of customer trust is significantly impacted by the perception of usability and ease of use (Kurniawan et al., 2022).

Following the above explanation, the subsequent hypothesis is put forward:

- H4.** Customer e-trust has a positive impact on customer e-retention
- H4a.** Customer e-trust mediates the relationship between website design and customer e-Retention

**The mediating role of customer e-satisfaction**

The level of customer satisfaction with online services directly affects the likelihood of customers continuing to use those services. Based on the study's results, it seems that customer satisfaction is significantly influenced by both empathy and reliability, customer retention is significantly impacted by customer satisfaction (Cunan et al., 2023). Customers tend to look more at product reviews to ensure the reliability and credibility of a product. In reliability checking, customers check the accuracy of product details posted on the website after delivery is made. Customers are satisfied when the product is delivered, and the information provided on the website is proven to be correct. This shows that logistics services are reliable, and increases the chances of customers continuing to use the online shopping site.

Other research shows that customer satisfaction influences customer retention (Octavia & Riza, 2023). The main indicator is the ability of customers to engage in transactions encompassing a wide array of products offered by service providers. The organization offers comprehensive one-stop shopping services that focus on fulfilling customer satisfaction and eventually fostering customer retention.

Furthermore, e-satisfaction has the potential to serve as an intermediary factor between the perceived ease of use and e-retention. The perceived ease of use significantly impacts customer satisfaction with the e-service (Wilson, Keni, et al., 2021). According to Hapsoro & Kismiati (2022) research, e-satisfaction can positively and significantly mediate the relationship between perceived ease of use and intention to use e-wallets. Therefore, customer e-satisfaction may also affect the durability of e-wallet usage.

Following the above explanation, the subsequent hypothesis is put forward:

- H5.** Customer e-satisfaction has a positive impact on customer e-retention
- H5a.** Customer e-satisfaction mediates the relationship between perceived ease of use and customer e-retention

Building upon this literature review, the study presents a preliminary model depicted in Figure 1.

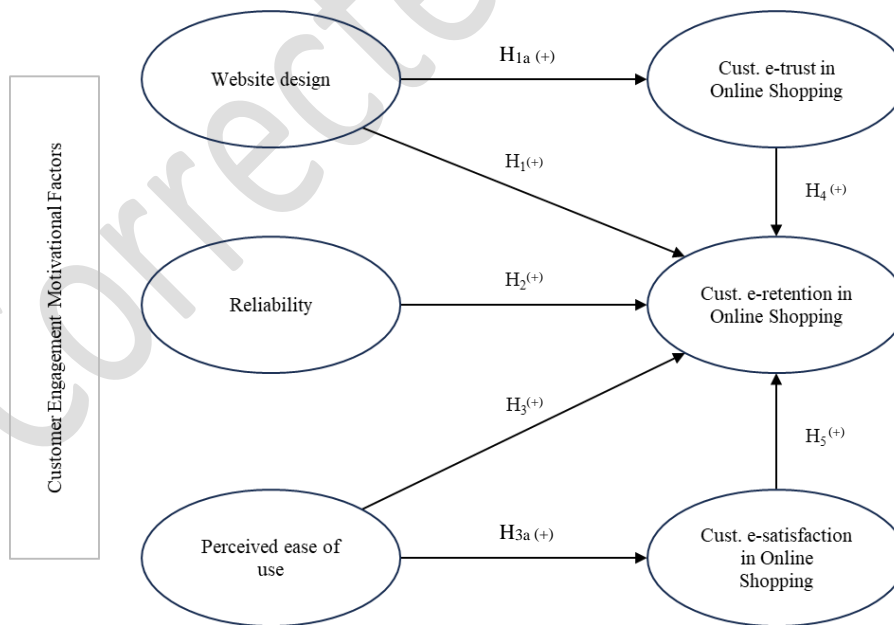


Figure 1. Research model framework  
 Source : Saoula et al., (2023) and Ghali (2021)

**Research Method**

This study uses a quantitative method consisting of 6 variables, namely website design (WD),

reliability (RL), perceived ease of use (PEU), customer e-trust (OT), customer e-satisfaction (EST), and customer e-retention (ERT). This study uses a questionnaire with 24 items which has been formulated in Table 1. Furthermore, these question indicators were tested on selected respondents taken from the population and sample that had been determined for this study. People were asked to fill out a form and rate each question item on a scale from 1 to 5, with responses Likert Scale of Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree.

Table 1. Variable and Indicators

Variable	Indicators	Sources	
Website Design (WD)	WD1	Overall, the online shopping website works very well technically	(Saoula et al., 2023)
	WD2	Visually, the online shopping website resembles other websites which I think is very good	
	WD3	Online shopping websites are easy to navigate	
	WD4	The online shopping website clearly shows how I can contact or communicate	
Reliability (RL)	RL1	The online store delivers on its promise to do certain things at certain times	(Saoula et al., 2023)
	RL2	The online store shows genuine interest in solving customer problems	
	RL3	Transactions with online stores are error-free	
	RL4	The online store has adequate security	
Perceived Ease of Use (PEU)	PEU1	I did nothing wrong when using the online store	(Saoula et al., 2023)
	PEU2	Interacting with online stores is often fun	
	PEU3	I don't need to read the user manual often when using the online store	
	PEU4	Interacting with an online store doesn't require much mental effort	
Online Trust (OT)	OT1	I feel safe in transactions with websites/online shops	(Saoula et al., 2023)
	OT2	I trust online stores can protect my privacy	
	OT3	I choose online stores that I believe are honest	
	OT4	I feel that the online shop will provide good service to me	
	OT5	I feel that the online shop is trustworthy	
Electronic Retention (ERT)	ERT1	I intend to continue using online shopping rather than stop using it	(Saoula et al., 2023)
	ERT2	I intend to continue using online shopping instead of using traditional shopping	
	ERT3	If I could, I would like to continue shopping online as much as possible	
Electronic Satisfaction (EST)	EST1	I am very happy with the website experience	(Ghali, 2021)
	EST2	I am very satisfied with the website service	
	EST3	My experience with this website has always been good	
	EST4	Overall, I am very satisfied with the website experience	

The study utilized a non-probability sampling methodology known as purposive sampling. The process of determining the appropriate sample size is calculated using a formula that involves adding the number of indicators and multiplying the number of variables by 10, as described in Hair et al., (2019). With a total of 24 indicators and 6 variables, this research used a sample size of 256 respondents. The minimum sample size criteria for Structural Equation Modeling (SEM) have been met according to the recommended threshold of 240. The research sample consists of various ages, education, occupation, and income. In this research, the respondent profile used as the target respondent is respondents who have shopped online in Table 2.

The next stage is the structural model test, which consists of several assessments. This stage includes data validity and reliability testing, Goodness of Fit Model testing, hypothesis testing, and Sobel test testing. Data validity is evaluated using factor loading criteria, where if the factor loading value is more than 0.35, the indicator can be said to be valid. To assess data reliability, the study used the Cronbach alpha criterion, where if the Cronbach alpha value is more than 0.6, then all indicators are said to be reliable. After that, the Goodness of Fit Model assessment depends on nine index criteria: CMIN/DF between 1 and 5, Chi-square with low chi-square criteria, Chi-Square p-value  $\geq 0.05$ , GFI  $\geq 0.90$ , NFI  $\geq 0.90$ , IFI  $\geq 0.90$ , TLI  $\geq 0.90$ , CFI  $\geq 0.90$ , and RMSEA  $\leq 0.10$ . These indices were selected based on recommended criteria for adequate model fit assessment (Hair et al., 2019). Furthermore, hypothesis testing was conducted using the criterion where a p-value of less than 0.05 indicates acceptance of the hypothesis. To test the significance of indirect effects in mediation analysis, the Sobel test is used. The Sobel test uses a criterion where if the p-value is less than 0.05, it indicates acceptance of the hypothesis.

## Result and Discussion

### Validity and Reliability Test

Results of validity tests for each indicator on the variables website design, reliability, perceived ease of use, customer e-trust, customer e-retention, and customer e-satisfaction show that all indicators have a loading factor of  $> 0.35$ . This shows that all indicators for each variable of website design, reliability, perceived ease of use, customer e-trust, customer e-retention, and customer e-satisfaction are proven to be valid. The findings of the reliability test are derived from the Cronbach alpha, value for the website design variable is 0.828, the reliability variable is 0.791, the perceived ease of use variable is 0.705, the customer e-trust variable is 0.802, the customer e-retention variable is 0.697, the customer e-satisfaction variable is 0.898. This shows that all variables produce a Cronbach alpha value  $> 0.6$ , which means that all indicators for each variable of website design, reliability, perceived ease of use, customer e-trust, customer e-retention, and customer e-satisfaction are proven to be reliable. According to the outcomes of the validity and reliability tests, it can be concluded that all indicators for each variable of website design, reliability, perceived ease of use, customer e-trust, customer e-retention, and customer e-satisfaction are proven to be valid and reliable. Data from validity and reliability tests are presented in Table 3.

Table 2. Respondent Profile

Variable	Frequency	Percentage
<b>Gender</b>		
Man	106	41.4%
Woman	150	58.6%
<b>Age</b>		
17– 25 Years	71	27.7%
25 – 40 Years	156	60.9%
> 40 Years	29	11.3%
<b>Education</b>		
Senior High School	57	22.3%
Diploma	6	2.3%
Bachelor	142	55.5%
Masters	48	18.8%
Doctor	3	1.2%
<b>Work</b>		
Student/Students	48	18.8%
Private employees	122	47.7%
Entrepreneur/Entrepreneur	28	10.9%
Civil servants/BUMN	38	14.8%
Not Yet/Not Working	20	7.8%
<b>Income</b>		
Not Yet/Not Working	57	22.3%
< 5 Million	74	28.9%
3 – 5 Million	64	25.0%
> 10 Million	61	23.8%
<b>Intensity of Olshop Use</b>		
1 – 2 times	156	60.9%
3 – 5 times	71	27.7%
> 5 times	29	11.3%
<b>Olshop type</b>		
Shopee	193	75.4%
Tokopedia	56	21.9%
Lazada	6	2.3%
BliBli	1	0.4%

Source: Data processed using SPSS 26

### Descriptive Statistical Test

The results of descriptive statistical tests for the website design variables, reliability, perceived ease of use, customer e-trust, customer e-retention, and customer e-satisfaction are presented in Table 3. The descriptive statistical tests indicate that the average value for the website design variables is 4.05, the mean for the reliability variable is 3.33, the mean for the perceived ease of use variable is 3.74, the mean for the customer e-trust variable is 3.71, the mean for the customer e-retention variable is 3.55 and the mean for the customer e-satisfaction variable is 3.77. Apart from that, based on the results of descriptive statistical tests, standard deviation data was obtained for each variable. The standard deviation for the website design variable is 0.616, the reliability variable is 0.773, the perceived ease of use variable is 0.72, the customer e-trust variable is 0.608, the customer e-retention variable is 0.814 and the customer e-satisfaction variable

is 3.77.

### Model Fit Testing

Figure 2 explains the framework for the results of model suitability testing (model fit) to complete research hypothesis testing using the SEM model, it is necessary to perform a precondition task. The Structural Equation Model (SEM) used in this research's multivariate data analysis was AMOS. Multivariate analysis in this research uses SEM to examine the influence between variables.

Table 3. Construct Reliability, Validity, and Descriptive Statistics

Variables/Indicators	Factor Loading	Cronbach Alpha	Conclusion	Mean	Standard Deviation
<b>Website Design (WD)</b>		0.828	Reliable	4.05	0.616
WD1	0.562		Valid	4.14	0.713
WD2	0.536		Valid	3.95	0.805
WD3	0.573		Valid	4.11	0.747
WD4	0.557		Valid	4.01	0.767
<b>Reliability (RL)</b>		0.791	Reliable	3.33	0.773
RL1	0.615		Valid	3.62	0.836
RL2	0.647		Valid	3.59	0.890
RL3	0.539		Valid	2.80	1,139
RL4	0.631		Valid	3.35	1,052
<b>Perceived Ease of Use (PEU)</b>		0.705	Reliable	3.74	0.72
PEU1	0.494		Valid	3.75	0.928
PEU2	0.694		Valid	3.74	0.852
PEU3	0.461		Valid	3.70	1,121
PEU4	0.555		Valid	3.80	1,041
<b>Customer e-trust (OT)</b>		0.802	Reliable	3.71	0.608
OT1	0.735		Valid	3.70	0.793
OT2	0.589		Valid	3.29	1,023
OT3	0.429		Valid	4.12	0.737
OT4	0.698		Valid	3.87	0.699
OT5	0.720		Valid	3.61	0.779
<b>Customer e-retention (ERT)</b>		0.697	Reliable	3.55	0.814
ERT1	0.550		Valid	3.93	0.851
ERT2	0.391		Valid	3.30	1,081
ERT3	0.380		Valid	3.42	1,142
<b>Customer e-satisfaction (EST)</b>		0.898	Reliable	3.77	0.68
EST1	0.739		Valid	3.81	0.738
EST2	0.743		Valid	3.80	0.750
EST3	0.714		Valid	3.65	0.840
EST4	0.735		Valid	3.82	0.805

Source: Data processed using SPSS 26

Several model fit indicators were chosen based on various model fit testing criteria, as presented in Table 4. Based on the analysis of the results from the 9 model fit testing criteria, 2 indicators produce goodness of fit conclusions, namely RMSEA and CMIN/DF. The criteria for determining the marginal fit model are as follows, GFI, IFI, TLI, and CFI. Meanwhile, the criteria for concluding a poor fit model are chi-square, p-value chi-square, and NFI. Thus, it's possible to infer that the model in this study is acceptable because it meets the Goodness of Fit criterion.

### Hypothesis Testing Results

The results of the estimated regression coefficients obtained from path analysis are shown in Table 5. There are five proposed hypotheses tested showing a p-value below the predetermined threshold, namely 0.05. Meanwhile, the other 2 hypotheses show that the p-value is above the specified threshold. Therefore, the test results confirm that there are several hypotheses proposed in this research whose results are not significant in direct effect.



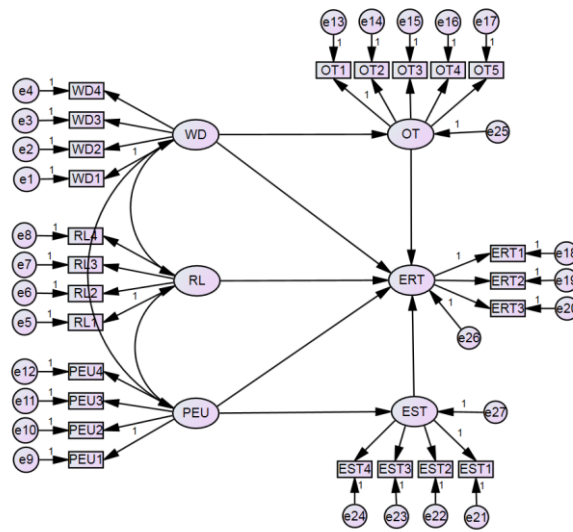


Figure 2. SEM Research Model

Table 4. Goodness of Fit Test Results

Type Measurement	Measurement	Model Fit Decisions	Results Processed	Decision
<i>Absolute fit measures</i>	Chi-square	Low Chi-Square	733,543	Poor fit
	p-value Chi-Square	≥ 0.05	0,000	Poor fit
	GFI	≥ 0.90	0.801	Marginal fit
	RMSEA	≤ 0.10	0.089	Goodness of fit
	NFI	≥ 0.90	0.733	Poor fit
	IFI	≥ 0.90	0.835	Marginal fit
	TLI	≥ 0.90	0.810	Marginal fit
	CFI	≥ 0.90	0.833	Marginal fit
<i>Parsimonious fit measure</i>	CMIN/DF	Between 1 to 5	3,031	Goodness of fit

Source: Data processed using Amos 23

Table 5. Hypothesis Testing

				Estimate	S.E	CR	p-value	Hypothesis Decision
H1	WD	→	ERT	,026	,158	,164	,870	Unsupported
H1a	WD	→	OT	,696	,089	7,785	,000	Supported
H2	RL	→	ERT	-.531	,162	-3,284	,001	Supported
H3	PEU	→	ERT	,859	,337	2,547	,011	Supported
H3a	PEU	→	EST	1,048	,151	6,945	,000	Supported
H4	OT	→	ERT	,411	,096	4,262	,000	Supported
H5	EST	→	ERT	,075	,130	,576	,565	Unsupported

Hypothesis 1 was tested to describe the influence of the website design on customer e-retention. The results showed an estimated coefficient value of 0.026, a statistical t-value of 0.164, and a p-value of 0.870, which is greater than 0.05. Therefore, H<sub>0</sub> is accepted and H<sub>a</sub> is rejected, thereby leading to the conclusion that the quality of the website design has no significant impact on customer e-retention. This is consistent with previous research which suggests that website design does not significantly impact customer e-retention (Saoula et al., 2023). The studies suggest that e-retention is assessed according to the degree of trust, which is measured by attachment and involvement with online stores. Customers tend to have greater attachment when they interact with a service provider. This interaction can help establish trust with the service provider, leading to increased opportunities for customer retention. Additionally, the results of this study are in direct opposition to Akbaruddin (2023) research, indicates that website design quality significantly influences online repurchase intentions and therefore, customer retention.

Hypothesis 1a was tested to define the impact of website design on customer e-trust. The estimated

coefficient value of 0.696 supports this finding. The statistical t-value of 7.785 yields a p-value of 0.000, which is less than 0.05. Therefore,  $H_0$  is rejected and  $H_a$  is accepted, leading to the conclusion that website design has a significant positive impact on customer e-trust. The findings align with previous studies, indicating that customers view their interactions with websites and online retailers as being secure, reliable, and preserving their privacy. [Silitonga et al. \(2020\)](#) demonstrates the outstanding level of service offered by online stores. Additionally, [Giao et al. \(2020\)](#) shows that the availability of information on the website impacts customer trust and repeat purchase intentions. [Permatasari & Kartikowati, \(2018\)](#) argue that good visuals, and reliable information can also build customer trust.

Hypothesis 2 was tested to describe the effect of reliability on customer e-retention. The estimated coefficient value of 0.531 supports this finding. The statistical t-value of 3.284 yields a p-value of 0.001, which is less than 0.05. Thus,  $H_0$  is rejected and  $H_a$  is accepted, leading to the conclusion that reliability has a substantial and favorable impact on customer e-retention. It suggests the transactions have a low error rate and provide sufficient security guarantees. Online stores can increase reliability and positive engagement bonds with customers by reducing perceived risks related to delivery, payment, and information breaches compared to traditional retailers ([Vásquez & Vera-Martínez, 2020](#)). As a result, customers tend to choose online transactions assuming the online shop is reliable ([Alkhateeb, 2020](#)).

Hypothesis 3 was tested to describe the effect of perceived ease of use on customer e-retention. The statistical t value of 2.547 produces a p-value of 0.011, which is less than 0.05, which means  $H_0$  is rejected and  $H_a$  is accepted. The data shows that the perceived ease of use has a major effect on customer e-retention. This research aligns with previous studies that suggest perceived ease of use meets customer needs when services have an accessible and easily understandable user interface ([Moslehpour et al., 2018](#)). The assessment of perceived ease of use depends on the trust established with the service provider, which is ascertained through interactions with the web store ([Li et al., 2020](#)). Engaging with online retailers is typically satisfying, and customers do not need guidance during the purchasing process, hence enhancing customer loyalty and trust in e-commerce. The study's conclusions are consistent with previous research, indicating that the perception of ease of use has a key role in building trust and retaining customers in the scope of online shopping ([Basha et al., 2021](#); [Vatolkina et al., 2020](#)).

Hypothesis 3a tested the effect of the perceived ease of use on customer e-satisfaction. The statistical t value of 6.945 produces a p-value of 0.000, less than 0.05, which means  $H_0$  is rejected and  $H_a$  is accepted. The data shows that the perceived ease of use has a substantial effect on the level of customer satisfaction. These results align with previous research indicating that the sense of usefulness and ease of use are crucial factors in product or service acceptance. These dimensions are used to predict the number of buyers in online stores ([Salimon et al., 2021](#)). Perceived ease of use can also influence customer attitudes toward repurchase intentions, indicating customer satisfaction ([Wilson, Alvita, et al., 2021](#)).

Hypothesis test 4 aimed to examine the impact of customer e-trust on customer e-retention. The estimated coefficient value of 0.411 and statistical t value of 4.262 with a p-value of 0.000 (less than 0.05) so that  $H_0$  is rejected and  $H_a$  is accepted. These findings align with [Silitonga et al. \(2020\)](#) research, which suggests that service providers who offer customization services can effectively retain customers. Additional research indicates that customer satisfaction with the services offered by a service provider leads to increased trust and a desire to reutilize the service ([Abdeljaber, 2021](#)). Greater trust among customers in transactions leads to higher levels of resulting satisfaction. These findings are consistent with previous research from [Berliana & Sanaji, \(2022\)](#) and [Wilis & Nurwulandari \(2020\)](#) where efforts should be directed toward enhancing and augmenting online customer trust to meet customer satisfaction. Service providers can partner with well-known third parties to build customer trust which leads to customer e-retention. When customer trust has been formed, customers have a higher tendency to make repeat purchases ([Rita et al., 2019](#)).

The objective of the hypothesis 5 test was to determine whether customer e-satisfaction affects customer e-retention. Results are shown by an estimated coefficient value of 0.075 with a statistical t value of 0.576 and producing a p-value of 0.565 which is more than 0.05, which means the  $H_0$  is accepted and  $H_a$  is rejected. It can be concluded that customer e-satisfaction does not affect customer e-retention. The results of this study contradict prior research that indicates when service providers can meet customer expectations, customer satisfaction will be achieved and customer retention will be strengthened ([Octavia & Riza, 2023](#)). Meanwhile, customer satisfaction is formed from a series of interaction processes that occur between customers and service providers. However, in this study, the shopping experience via the website provided by the service provider did not meet the criteria expected by customers.

To test the indirect effect in this research, hypotheses 6 and 7 use a Sobel test. The study will investigate the impact of website design on customer e-retention, considering consideration of the role of consumer e-trust as a mediator. Furthermore, a hypothesis test will be performed to investigate the influence

of perceived ease of use on customer e-retention, with customer e-satisfaction acting as the mediator. The outcomes of the Sobel test are presented in Table 6 and Figure 3.

Table 6. Sobel Test

				t-statistic	p-value	Hypothesis Decision		
H6	WD	→	OT	→	ERT	3,755	0.00017	Supported
H7	PEU	→	EST	→	ERT	0.574	0.56533	Unsupported

Source: Data processed using the *quantspy.org* website

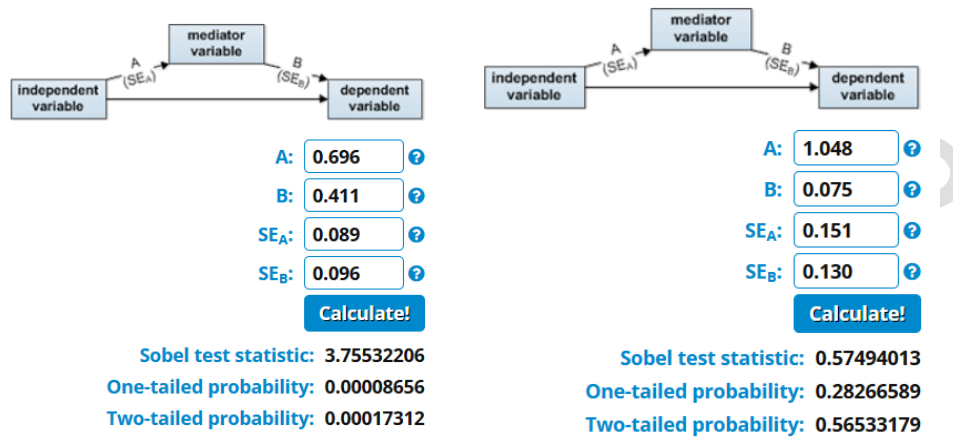


Figure 3. Sobel Test Result

Hypothesis 6 tested whether customer e-trust mediates the relationship between website design and customer e-retention. The statistical t value of 3.755 produced a p-value of 0.00017, which is less than 0.05, concluding that  $H_0$  is rejected and  $H_a$  is accepted. Thus, it may be inferred that consumer e-trust acts as a mediator in the connection between website design and customer e-retention. The research findings are consistent with prior studies, indicating that the ability of customers to remain engaged with an online store is contingent upon the level of trust developed through their interaction. Customers initially engage with a web store through diverse channels (Shamim et al., 2023), which helps to foster the establishment of trust with the service provider. This trust, in turn, increases the likelihood of customer retention in the subsequent stage (Kumar & Lata, 2021). The research findings suggest that website design positively influences customer e-trust and enhances the probability of customer e-retention in the context of e-commerce. These findings align with prior studies that have demonstrated that an aesthetically pleasing website design can enhance customers' trust and loyalty in online transactions (Fimberg & Sousa, 2020; Masele & Matama, 2020).

The purpose of testing Hypothesis 7 was to examine if customer e-satisfaction acts as a mediator in the relationship between perceived ease of use and customer e-retention. The t-value of 0.5749 yielded a p-value of 0.56, which is above the significance level of 0.05. Therefore,  $H_0$  is accepted and  $H_a$  is rejected. Thus, it can be concluded that customer e-satisfaction does not operate as a mediator in the connection between perceived ease of use and customer e-retention. This statement appears to contradict previous research which suggests that users perceive the benefits of the service's ease of use, resulting in heightened satisfaction and a higher probability of ongoing utilization (Wilson, Keni, et al., 2021). However, this research indicates that service providers have not fully met customer satisfaction in accessing their services. This is evident from several aspects, such as website visuals, ease of navigation, and the information provided on the website. Indicator 3 had the lowest mean value for the customer e-satisfaction variable, with a standard deviation of 0.840, measuring at 3.65.

### Conclusions, suggestions, and limitations

The research findings indicate a strong correlation between many elements that motivate customer engagement, such as reliability, perceived ease of use, customer e-trust, and customer e-retention. This research has implications in various domains, including digital marketing, consumer behavior, and marketing psychology. For digital marketers, facing these conditions is a challenge in carrying out marketing activities such as product introductions, sales and promotions through online shopping sites. The

emergence of this condition triggers companies to increase online trust by displaying good visual quality on their online websites as well as more accurate information which makes it more comfortable and easier for individuals to access product purchases online (Wen et al., 2016). In addition, it is necessary to consider customer e-satisfaction in increasing the potential for repeat purchases which leads to customer e-retention. Service providers can take advantage of this concept by developing campaigns that utilize the motivational factor of customer engagement to encourage customer retention in the digital realm. Moreover, service providers can also develop the collaborate with third parties to build a good brand image which can increase customer trust and lead to increased customer e-retention (Guo et al., 2023; Venkatakrisnan et al., 2023)

It is important to understand the various constraints of this research. First, this research only discusses some of the motivational factors for online customer engagement such as website design, reliability, and perceived ease of use. Future research can consider variables related to technology adoption to determine the direct effect on customer e-retention.

Second, the insignificant results of testing hypotheses 1 and 5 indicate that the independent variable does not have any impact on the dependent variable, while the mediating effect of one of these hypotheses remains significant in hypothesis 6. Nevertheless, it is important to acknowledge that there may be additional factors that can influence the connection between the independent and dependent variables, even though they are not discussed in this study. Therefore, this could be a suggestion for the next research to consider additional mediating or moderator variables to better explain this relationship. For example, the customer e-safety variable can be considered as a moderator (Saoula et al., 2023).

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### Competing Interests

The author(s) declare that there are no competing interests relevant to the content of this article.

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Corrected proofs