

Determinants of Customer Satisfaction in E-Commerce: A Case Study in Higher Learning Institutions in Johor

Abd Halim Mohamad and Sabrinah Adam

Faculty of Management, Universiti Teknologi Malaysia, Malaysia

ABSTRACT

Customer satisfaction is an essential experience in e-commerce. The objective of this study was to identify determinants of customer satisfaction in e-commerce. This case study adopted its theoretical framework from the Theory of Reasoned Action (TRA). It also applied a quantitative research methodology by using self-administered questionnaires as a measurement tool in gathering sample data. The sample were student's students from various course backgrounds in higher learning institutions in Johor. A total of 224 students answered the questionnaires. IBM SPSS version 26 was used to analyse the sample data. A test of reliability was carried out using the Cronbach's alpha method. Later, using Pearson correlation and multiple regression analysis to assess the interrelationship between the independent and dependent variables, predictors and criteria values were identified. The findings revealed that user interface quality, product information quality, security perception, and privacy perception had a positive relationship with customer satisfaction. However, e-service quality had a negative relationship and had no significant impact on customer satisfaction. This study provides insight into the influencing aspects and their functions. This would allow e-commerce firms to improve their websites based on the findings.

Keywords: customer satisfaction, e-commerce, B2C, TRA, influencing factors

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* Corresponding author: Abd Halim Mohamad. Email: ahalim@graduate.utm.my

INTRODUCTION

In the digital economy, the growth of e-commerce platforms is parallel to the expansion of internet users. According to the International Telecommunication Union (ITU) Facts and Figures 2022 Statistics Report, an estimated 5.3 billion people will be using the internet worldwide in 2022. Meanwhile, according to the Department of Statistics Malaysia (DOSM) in its April 2022 report and press release, the percentage of internet usage by individuals in Malaysia had increased to 96.8%, or an estimated 31.6 million users. Technically, the worldwide growth of internet usage and its advantages has amplified not only new methods of communication but also a new way of doing business, commonly known as electronic commerce. E-commerce has significantly transformed specific economic sectors, such as wholesale retail and trade and the services industries. The influence of e-commerce is not only due to the COVID-19 pandemic but also to progressive technology expansion and profound customer concerns. Since then, the e-commerce platform has grown exponentially and has been slowly adopted into customer purchase behaviour.

Moreover, the presence of various e-payment systems, has indirectly encouraged the rapid development of e-commerce platforms. Nevertheless, customers demand decent services and high-quality products before intending to purchase any products online. If they realise that the current e-commerce services and products are unsatisfactory, they can easily move to another e-commerce website. In Malaysia, e-commerce has gradually become popular and fiercely competitive among digital entrepreneurs. However, a proper approach and method needs to be identified before embarking on a digital business. Thus, this case study was intended to gain some insights from past research and identify several determinants that significantly influenced customer satisfaction in e-commerce.

Problem Statement

Customer satisfaction is one of the critical issues frequently discussed in e-commerce because business depends on its customers. Therefore, retaining a customer is inevitable because the customer means profit to them. Perera et al. (2019) stated that repurchase intention depends on the quality of the product and services obtained when purchasing the product

online. Irantaj and Huseynov (2018) further stated that a firm requires a competitive advantage to leverage its strength to confront future challenges in e-commerce. To keep consumers and attract new ones, online businesses must improve customer satisfaction levels by improving their product and service offerings.

Many scholars have conducted research to ascertain the factors influencing customer satisfaction with e-commerce. Nevertheless, the number of such studies is minimal in Malaysia. Nowadays, the number of people purchasing products online has inevitably increased, thanks to websites like Lazada, Shopee, and Alibaba that are becoming popular among the younger generation. In the opinion of Sarwar (2016), e-commerce has expanded considerably in Malaysia and has created a request on how to extend customer satisfaction. The truth is that retailers must guarantee that customers are satisfied with their purchases, which is essential from an e-commerce perspective. According to Sabou et al. (2017), e-commerce businesses do not fully comprehend online consumers' behaviours since they continue to face challenges that diminish customer satisfaction levels.

Research Objective

The objective of this study was not solely to determine the key factors influencing customer satisfaction, but additionally to look into and understand the issues more clearly. There were a few objectives as follows:

1. To identify the relationship between user interface quality and customer satisfaction in e-commerce
2. To discover the relationship between product information quality and customer satisfaction in e-commerce
3. To examine the relationship between service quality and customer satisfaction in e-commerce
4. To find the relationship between security perception and customer satisfaction in e-commerce
5. To determine the relationship between privacy perception and customer satisfaction in e-commerce

LITERATURE REVIEW

E-commerce is interpreted as a commercial transaction that uses the internet network infrastructure, which involves information searching and data sharing between buyers and retailers (Irantaj & Huseynov, 2018). Furthermore, with the increasing number of internet users, tablet devices, and smartphones coupled with customer confidence, e-commerce will continue to grow exponentially. The transaction between retailers and customers has become more appealing, making commercial transactions easier to complete online (Khan, 2016).

Santhi (2017) indicated that online marketers need to reduce the customer's perceived risks by making e-commerce websites easy to navigate and providing secure payment and speedy delivery to gain customer trust. Juyal (2018) stated that an effective online shopping service needs to pay attention to customers and e-commerce marketing strategies. According to Perera et al. (2019) websites' user-friendly functionality, customer service, on-time delivery, and effectiveness in handling complaints can all be significant influence factors in retaining and attracting new customers.

Irantaj and Huseynov (2018) showed that experienced customers valued e-commerce website usability, privacy, and security as the most critical factors. Other factors such as product information quality, order fulfilment, and trust are also available in e-commerce since those factors will improve customer satisfaction levels. According to Sanyala et al. (2019), influencing factors such as website user-friendliness and various payment methods would attract customers to buy online. Meanwhile, security risks and privacy concerns were not crucial. Moreover, reliability and service quality are vital factors in keeping customers shopping online. Therefore, e-commerce retailers need to draw up and implement policies that influence customers.

Theoretical Background

The development of the theoretical framework originated with the Theory of Reasoned Action (TRA). There are two parts to the theory: attitude and subjective norm. These components are identified as variables or determinants of behaviour (Fishbein & Ajzen, 1975). This model assumes

that people tend to make logical decisions based on the information given to them. Figure 1 depicts how to generally predict human behaviour.

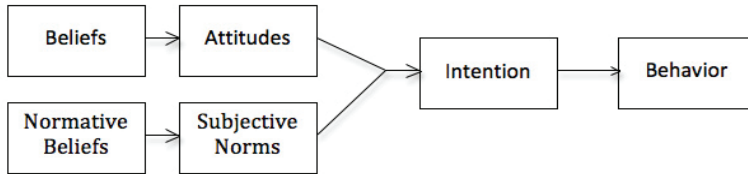


Figure 1: Theory of Reasoned Action (Fishbein & Ajzen, 1975)

According to Fishbein and Ajzen (1975), an individual's feeling, whether positive or negative, is an attitude directed towards a target behaviour. Meanwhile, a subjective norm is an individual's perception of a target behaviour. In other words, a person's beliefs determine his attitude towards a behaviour, and a person's normative beliefs determine his subjective norm towards a behaviour.

In this research, five variables were proposed as influencing factors that satisfy customers in e-commerce. The first three variables were user interface quality, product information quality, and e-service quality, which were considered attitude components. The subjective norms' components were security perception and privacy perception. The last construct was customer satisfaction (behaviour), which was considered an additional component added to the TRA model.

Theoretical Framework

Based on the given theoretical foundation, a model theoretical framework, illustrated in Figure 2, depicts the link between customer satisfaction (a dependent variable) and the five influencing elements (independent variables) of this study.

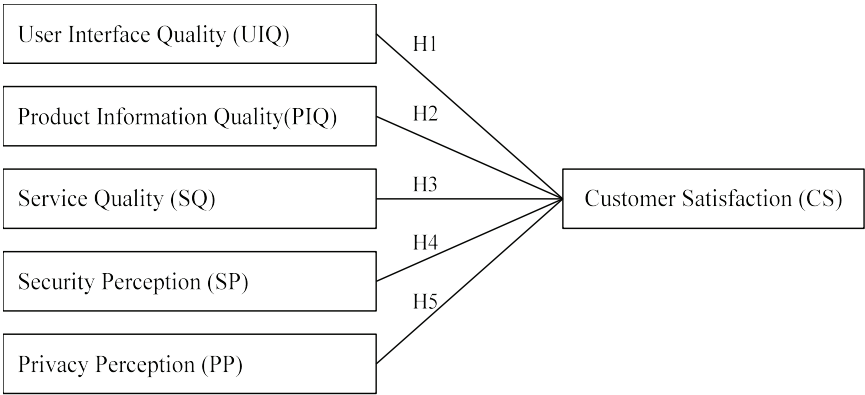


Figure 2: Theoretical Framework

HYPOTHESES DEVELOPMENT

User Interface Quality and Customer Satisfaction

The quality of an e-commerce website’s user interface can be used to assess its functionality. It also means the ease of use, navigation, understanding, product offering, order fulfilment, payment options, and return policies that seem to be a significant variable in customer satisfaction in online shopping. According to Wilson et al. (2019), in the context of the e-commerce industry, user interface quality or website quality is critical in determining a firm’s success because the website not only serves as a role in establishing customer satisfaction but also acts as a communication tool or as a bridge between retailers and consumers. Unlike traditional commerce, which allows retailers to meet and speak with potential customers face-to-face, this would allow businesses to explain precise product information and encourage customers to buy their products.

The study conducted by Irantaj and Huseynov (2018) explained that a creative website with an attractive design, an easy search engine, informative content, and appropriate presentation would promote buyers to effectively communicate with e-commerce retailers. Alternatively, if the user interface quality is not visually appealing and user-friendly, it will eliminate customer purchase intent and degrade customer satisfaction. Therefore, user interface

quality plays a vital role in attracting and influencing customers to buy a product through e-commerce.

H1: User interface quality has a positive effect on customer satisfaction on e-commerce platforms.

Product Information Quality and Customer Satisfaction

Eid (2011) suggested that customers depend on the provided information by retailers on the website to evaluate product information for trustworthiness, accuracy, and usefulness and to make judgments for their online shopping decisions. Customers typically obtain product information for their online shopping decisions through online reviews. Thus, product information quality is related to retailers' attributes, which will influence consumers' satisfaction.

According to Ren et al. (2019), e-commerce is full of risks because customers rely on the information provided by websites, which usually do not have enough sources of product information. Based on previous studies, information on the product, in terms of its reliability, comparison with other products, and quality, were identified as one of the essential variables for customer satisfaction. Thus, the hypothesis was:

H2: Product information quality has a positive effect on customer satisfaction on e-commerce platforms.

E-Service Quality and Customer Satisfaction

Service quality is evaluated based on the experience of the service in terms of customer service and service delivery in the online market. To satisfy customer needs, services should be efficient in presenting retailers' commitment and sufficient to help customers choose to buy the right product.

Nawi et al. (2015) explained that e-service quality starts with ordering and receiving items, which includes order fulfilment, payment, shipping, and returning policies. E-commerce retailers should realise that service quality is a key factor in customer satisfaction and business success. As stated in the previous studies, those are the reasons why providing good service quality has a crucial role in increasing customer satisfaction. The hypothesis was:

H3: E-service quality has a positive effect on customer satisfaction on e-commerce platforms.

Security Perception and Customer Satisfaction

Irantaj and Huseynov (2018) stated that a highly secure e-commerce website could ensure trust intentions that influence customer confidence behaviour. The same argument also must be applied to secure payment methods, and the excellent security features offered by the websites could lead to customer satisfaction. Furthermore, Encio (2014) suggested that e-commerce websites get certification by government IT security bodies. This would increase customer confidence in e-commerce. Wright (2016) pointed out that e-commerce systems must not only have a highly secure infrastructure but also display security features on their websites to convince consumers that they have the confidence to make purchases online.

Previous studies have shown the significance of security perception in e-commerce. Customers consider security a vital factor in deciding to buy online. Hence, e-commerce that offers security features will gain customer satisfaction. The research hypothesis was:

H4: Security perception has a positive effect on customer satisfaction on e-commerce platforms.

Privacy Concern and Customer Satisfaction

Customers may have a positive experience if privacy concerns are addressed in e-commerce. A high level of privacy could influence customers' confidence and satisfaction behaviours. Furthermore, Fortes et al. (2017) stated that privacy concerns focused on three major dimensions: collection, control, and awareness. "Collection" means the amount of personal data possessed by e-commerce operators compared to the benefits received. Control: This reflects consumers' ability to understand how their personal data is used, modified, and deleted. Finally, awareness tells consumers about the e-commerce organization's privacy practices.

According to Eid (2011), the more privacy policies that e-commerce websites provide, the more likely they are to lead to satisfying behaviour.

Retailers must thoroughly observe the principles of collecting personal information and have awareness about how information is used. E-commerce websites must abide by personal data protection laws that lead to confidence levels that influence customer trust and satisfaction behaviours. Based on the above statement, the following hypothesis was formulated:

H5: Privacy perception has a positive effect on customer satisfaction on e-commerce platforms.

METHODOLOGY

The research design's general structure was a quantitative design based on empirical methodology. This study used deductive reasoning, in which hypotheses are formed, data is collected to examine the identified problems, the data from the questionnaires is analysed, and conclusions are drawn to prove whether the hypotheses are wrong or true.

Technically, this study adopted a correlational research design that attempted to determine the extent of a relationship between two or more variables using statistical data. Specifically, the relationships between the independent and dependent variables were analysed and interpreted.

Sampling

A purposive sampling technique was applied as the respondents were readily available, within close proximity, and easily accessible for questionnaire distribution. The respondents were students from higher education institutions in Johor who were technology savvy and tended to use e-commerce frequently. The sample obtained was well suited to provide reliable data to meet the research time and budget requirements. In this study, the sample size guideline was based on Krejcie and Morgan's (1970) look-up table.

Research Instrument

Based on past studies a research instrument (questionnaires) was sourced (Lee et al., 2016; Sobihah et al., 2015; Rita et al., 2019; Al-Jahwari et al. 2018; Eid 2011, Vasic et al., 2019). This questionnaire was employed in the study to collect information from respondents.

ANALYSIS AND FINDINGS

Descriptive Analysis

This analysis explains the demographics of respondents who participated in the survey.

Table 1: Demographics of Respondents (n = 224)

Variable	Category	Frequency	Valid Percent (%)
Gender	Male	111	49.6
	Female	113	50.4
Age	21 - 30	140	62.5
	31 - 40	67	29.9
	41 - 50	14	6.3
	51 - 60	3	1.3
Factor	Convenience	98	43.8
	Cheap	75	33.5
	A lot of choices	22	9.8
	Worth of mouth	7	3.1
	Attractive website	22	9.8
Frequency	Once a year	7	3.1
	Once in six months	57	25.4
	Once a month	84	37.5
	Frequently	76	33.9

It appeared that female frequency was slightly higher than male frequency, forming 50.4% of the total gender sample. The respondents' age was between 21 and 30 years old, and they dominated with 62.5% of the survey that was classified as the young generation. 43.8% of the respondents said that the convenience factor was one of the reasons to buy online, and 33.5% purchased online due to cheap and affordable pricing. Only 3.1% of respondents bought online because of word-of-mouth influence. Also,

33.9% of the respondents frequently bought online, 37.5% bought once a month, and 25.4% used e-commerce once every six months.

Reliability Analysis

As shown in Table 2 user interface quality was strongly agreed upon by respondents, with a mean score of 22.42. The lowest mean score of 19.83 went to the privacy perception variable, and this meant that the respondents somewhat agreed with the measured variable. The findings depicted an acceptable variability within the data set, as the standard deviation was between 2.457 and 4.134.

Table 2: Descriptive Analysis and Cronbach's Alpha Reliability Test ($n = 224$)

Variable	Item	Mean	Std. Deviation	Cronbach's Alpha
Customer Satisfaction (CS)	5	20.06	3.720	.917
User Interface Quality (UIQ)	5	22.42	2.457	.788
Product Information Quality (PIQ)	5	21.85	3.282	.868
E-Service Quality (ESQ)	5	20.96	4.134	.931
Security Perception (SP)	5	20.34	3.441	.898
Privacy Perception (PP)	5	19.83	3.853	.896

The internal consistency alphas for each of the variables of interest ranged from $\alpha = .788$ (UIQ) to $\alpha = .931$ (ESQ), hence it fulfilled the requirement of over 0.70. All the collected data was reliable and good for further analysis.

Pearson Correlation Analysis

A Pearson analysis was conducted to examine the relationships between customer satisfaction and the independent variables. A complete list of the correlation matrix is depicted in Table 3.

Table 3: Pearson Correlation and Significance level ($n = 224$)

		UIQ	PIQ	ESQ	SP	PP
Pearson Correlation	CS	.349**	.223**	.034	.191**	.159*
	UIQ		.218**	.075	.030	.065
	PIQ			.213**	.253**	.024
	ESQ				.031	.231**
	SP					.076

Sig.(2-tailed)	PP					
	CS	.000	.001	.610	.004	.017
	UIQ		.001	.261	.650	.336
	PIQ			.001	.000	.721
	ESQ				.649	.000
	SP					.260
	PP					
Note: *Correlation is significant at the 0.05 level (2-tailed).						
**Correlation is significant at the 0.01 level (2-tailed).						

Table 3 shows that UIQ was moderately positively related to CS, ($r = .349, p = .001$), and PIQ was positively weakly related to CS, ($r = .223, p = .001$). The relationship between ESQ and CS was also weakly positive ($r = .034, p = .610$). SP was weakly positively related to CS ($r = .191, p = .004$), and PP was moderately positively related to CS ($r = .159, p = .017$).

Table 4: Summary of Pearson Correlation Analysis Result (p = .05)

	Hypothesis	Decision
H ₁	User interface quality has a positive effect on customer satisfaction on e-commerce platforms.	Supported
H ₂	Product information quality has a positive effect on customer satisfaction on e-commerce platforms.	Supported
H ₃	E-service quality has a positive effect on customer satisfaction on e-commerce platforms.	Not Supported
H ₄	Security perception has a positive effect on customer satisfaction on e-commerce platforms.	Supported
H ₅	Privacy perception has a positive effect on customer satisfaction on e-commerce platforms.	Supported

According to Pearson correlation analysis, Hypothesis H₃, $p = .610$, was not significant. Thus, we failed to reject the H₀ hypothesis for e-service quality. Whereas the other independent variables were less than the level of significance or critical value ($p < .05$), all of the H₀ hypotheses were rejected.

Multiple Regression Analysis

Table 5 depicts the model summary and indicates whether the addition of each subsequent variable significantly improved the model. Model 1, $p < .001$ (UIQ), performed significantly better than the constant alone. Model 2 (UIQ plus PIQ), with $p = .017$, outperformed UIQ alone. Model 3 (adding ESQ), $p = .175$, was not statistically significant better than Model 2. Model 4, $p = .018$ (adding SP), was significantly better compared to Model 3, and

finally, Model 5, $p = .031$ (adding PP), also had a significant improvement on the previous model.

Table 5: Model Summary

Model	R Square	Adjusted R Square	R Square Change	Sig. F Change	Durbin Watson
1	.122	.118	.122	.000	
2	.144	.137	.023	.017	
3	.145	.133	.001	.715	
4	.167	.151	.022	.018	
5	.184	.166	.018	.031	2.276

Note: Dependent Variable - Customer Satisfaction

The R-square variance in each model (Model 1 = 12.2%; Model 2 = 14.4%; Model 3 = 14.5%; Model 4 = 16.7%; Model 5 = 18.4%) reflected the impact of the independent variables on the dependent variable. Based on Table 5, the sum of the R-square of the model had a 76.2% impact on the customer satisfaction level. Meanwhile, the remaining 23.8% of the variables and factors were unidentified by the current model. Therefore, there could be the possibility of other variables, such as pricing, product branding, and trust, that are vital in explaining consumer satisfaction but have yet to be considered in this study. Furthermore, the .001 R-square Change for ESQ showed that it only accounted for 0.1% of the minimal new variance. The Durbin-Watson statistic of 2.28 was good. (values greater than 1 and less than 3).

Criterion and Predictors Analysis

Multiple regression was performed to evaluate the predictive ability of user interface quality, product information quality, e-service quality, security perception, and privacy perception on the customer satisfaction criterion.

Table 6: Multiple Regression Result for Variables ($n = 224$)

Independent Variable	B	SE _B	Beta	t	Sig.
User Interface Quality	.473	.095	.312	4.970	.000
Product Information Quality	.144	.075	.127	1.915	.057
E-Service Quality	-.047	.058	-.052	-.812	.418
Security Perception	.152	.069	.141	2.218	.028
Privacy Perception	.133	.061	.138	2.176	.031

Note: R^2 for Step 5 = .184
Dependent Variable: Customer Satisfaction

User interface quality, product information quality, security perception, and privacy perception statistically significantly predicted customer satisfaction scores. Adding e-service quality, on the other hand, did not significantly improve the model; $b = -.047$, $t = -.812$, $p = .418$. Table 6 contains multiple regression results for the five variables of interest. These results indicated that user interface quality, product information quality, security perception, and privacy perception were significant predictors of customer satisfaction, except for e-service quality. The established multiple linear regression equation for customer satisfaction

$$\hat{y} = B_1(X_1) + B_2(X_2) + B_3(X_3) + B_4(X_4) + B_5(X_5) + a$$

Where; $\hat{y}$ = Customer Satisfaction and a = Constant value = .316

So,

$$\hat{y} = .473(\text{UIQ}) + .144(\text{PIQ}) - .047(\text{ESQ}) + .152(\text{PP}) + .133(\text{SP}) + .316$$

The model's best predictor was UIQ, which had the highest value of .473 and had the greatest impact on consumer satisfaction, and the model's worst predictor was ESQ, which had a value of -.047. In conclusion, multiple regression analysis indicated that there was no significant prediction of customer satisfaction scores by e-service quality except for user interface quality, product information quality, security perception, and privacy perception.

DISCUSSION

The outcome of five hypotheses that influence customer satisfaction and all statistical results found to support the defined alternative hypothesis, except H_3 . The outcome of the Pearson correlation analysis posited that UIQ was moderately positively related to customer satisfaction (CS). It revealed that customers are prone to user interface quality issues due to the e-commerce presented on their website. This result is parallel with a study conducted by Hidayat et al. (2016) that concluded user interface quality has a positive effect on customer satisfaction and trust in Indonesia. According to Wilson et al. (2019), in the e-commerce industry, user interface quality or website

quality not only plays a crucial role in determining a firm's success, but also plays a role in establishing customer satisfaction among customers, who act as a communication tool between retailers and consumers. This hypothesis implies that by concentrating improvement efforts on user interface quality, the online retailer could maintain consumer satisfaction and loyalty.

The result indicated that PIQ was positively related to CS. Similar results were conducted by Deyalage et al. (2019), who hypothesised that there was a positive relationship between product information quality and customer satisfaction from a Sri Lankan perspective. The result is strengthened by the research conducted by Vasić et al. (2019), which emphasises the need for retailers to provide all relevant and accurate information about the product since online customers do not have the opportunity to touch and feel the product before deciding on a purchase. This hypothesis suggests that the quality of product information is important for convincing customers to make a purchase decision.

Pearson's correlations showed that e-service quality was negatively correlated with customer satisfaction. Interestingly, evidence from the findings of this study suggested that the respondents evaluate e-service quality differently. This factor was not of significant importance in causing customer satisfaction. It might suggest that the respondents are used to the norm of vain services given by e-commerce retailers. These may include inefficient services such as late product delivery, poor packaging, and delayed customer service feedback. Apparently, this outcome contradicts the research done by Perera et al. (2019) that stated customer service is one of the main factors in determining customer satisfaction. This result suggested that e-service quality concerns were not significant as long as the product purchase is delivered to the customer, and that would be sufficient and acceptable.

The study found that security perception was positively related to customer satisfaction. This result is similar to the study by Wright (2016), which stated that security perception is still a valid concern for online shoppers because it was found to influence customer satisfaction and, finally, whether a purchase will actually take place. Encio (2014) pointed out that understanding customer behaviour with regard to security is crucial. According to the findings, a website with high-rated security features

should make them known to their online customers. These would increase customers' confidence and satisfaction levels in e-commerce. Also, retailers must ensure any security system or software upgrade cannot be breached and hackers set free.

Privacy perception and customer satisfaction were found to have moderately positive relationships. This is in line with the studies by Al-Jabri et al. (2020). The more privacy policies e-commerce websites provide, the better they can lead to satisfied behaviour. Websites that provide a high level of privacy concern may encourage trusting behaviour. In addition, the study conducted by Sanyala et al. (2019) showed that protecting customer privacy will lead to customer loyalty. Moreover, Fortes et al. (2017) stated that retailers should develop a privacy policy that is clear and understandable to help reduce customer uncertainty about buying online as well as protect confidential information. This hypothesis implies that customers are attentive to personal information like private data, credit card information, and other sensitive information being shared, disseminated, or stolen by irresponsible individuals.

Theoretical Implications

The theoretical framework of this study contributes to the determination of factors influencing customer satisfaction and the relationship of each independent variable to customer satisfaction. Based on Pearson correlation analysis outcomes, this study suggested that, with $r = .349$, user interface quality was a major factor that has a relatively strong relationship with customer satisfaction. While product information quality $r = .223$ and security perception $r = .191$ and privacy perception $r = .159$ showed less correlation than user interface quality, it was discovered that the relationship between e-service quality and $r = .034$ was very weak.

The influencing factors results strengthened the existing findings on customer satisfaction, which were antecedent conceptual frameworks discussed in the previous literature review. It validated four constructs: user interface quality by Hidayat et al. (2016), product information quality by Deyalage et al. (2019), security perception by Vasić et al. (2019), and privacy perception by Eid (2011). On the contrary, e-service quality research by Ludin and Cheng (2014) indicates the reverse outcome, with no significant influence on customer satisfaction.

Again, the multiple correlation analysis results suggested that user interface quality, product information quality, security perception, and privacy perception were significant predictors (positive values) for customer satisfaction criterion scores. However, adding e-service quality (negative values) did not significantly improve the equation model.

Practical Implications

E-commerce is a highly competitive business and requires substantial attention to customer satisfaction to retain existing customers and attract new ones. In this study, online retailers should be aware of various perspectives, especially when identifying specific factors that influence customers' satisfaction. This would enable them to focus on those factors to achieve business objectives. Hence, as found in this study, online retailers need to focus on user interface quality, product information quality, e-service quality, security perception, and privacy perception to increase customer satisfaction. Consequently, they remain sustainable in the e-commerce industry and retain customers for the long term.

The study suggested that online retailers need to focus attention on user interface quality. Obviously, user-friendliness, a good interface layout, attractive colour combinations, content arrangement, and presentation on e-commerce websites are vital to attracting customers and convincing them to make buying decisions. Furthermore, e-commerce websites should provide a variety of simple methods for completing business transactions. Results of this study on the same variable share the same outcome as that done by Deyalage et al. (2019).

In e-commerce circumstances, the products are intangible, so retailers should provide detailed product information. In fact, customers rely heavily on the information given on the website for evaluation purposes. The information prescribed by the retailers would assist in product comparisons and purchase decisions. Also, the shared information would help customers overcome doubts about their products. Customers' trust and satisfaction in e-commerce would increase if retailers provided accurate and reliable information.

E-service quality is a fundamental factor to be considered by retailers. Lack of adequate service and impromptu responses will end up in customers' dissatisfaction. So, retailers should provide service availability through multiple contact channels to address customer issues and promptly respond to customer satisfaction. Delivery tracking features should be incorporated into their offered e-services. Retailers should also pay attention to the return, refund, and warranty policies of every e-commerce transaction. Those policies shall appropriately imply customers' needs and consequently increase confidence and customer satisfaction, which in turn will lead to sales increases.

Security perception is an important factor that online retailers should address to increase customer satisfaction. In fact, there is evidence that customers are concerned about security risks when doing online transactions. Hence, online retailers should have appropriate security features to protect customers' financial data, like credit or debit card information. Retailers may use trusted third parties to deal with online payment gateway methods like FPX to convince customers about security protection. In addition, e-commerce websites need to keep their application software up-to-date with the latest security patches periodically. This will ensure the website is not vulnerable to hackers. Retailers should build up customer trust towards the e-commerce website by implementing security measures to persuade customers to have a positive perception towards e-commerce business transactions.

This study also found privacy concerns are of the utmost importance to protecting customer personal information. Customers are worried that their personal information may be hijacked by hackers or sold to irresponsible marketers. To gain customer trust and loyalty, e-commerce retailers must strengthen their privacy policies, while also encouraging them to buy when they believe their privacy and confidential information is well protected.

In order to achieve optimum performance in the growing digital economy, e-commerce retailers must consider the stated influencing factors as critical guidelines in developing their e-commerce platforms. The findings of this study will help to shape the development of thought in digital business investments and prudent accounting awareness, particularly for existing and new start-up e-commerce platforms. As a consequence, massive losses could

be avoided by implementing good accounting management in every phase of digital investment made in the development of e-commerce platforms. Furthermore, future research should include additional factors such as product pricing, consumer income, product cost and accounting, brand, and trust, which will result in a comprehensive analysis and outstanding results.

CONCLUSION

Based on the discussion, only four determinants had a significant influence on customer satisfaction: user interface quality, product information quality, security perception, and privacy perception. Obviously, in this study, four hypotheses were supported, and only e-service quality was not supported and did not significantly impact customer satisfaction.

In order to achieve success in e-commerce, retailers need to invest resources in understanding their customers' needs and satisfaction levels. They should invest prudently in the user interface design, improve the presentation of product information, enhance e-services, and strengthen system security and privacy policies. Only through continuous e-commerce system improvement, excellent accounting practices, and applying sustainable business processes can online retailers achieve decent business performance. Lastly, managing a good relationship with customers would enable retailers to offer excellent e-service quality to satisfy customers' needs. This will enhance customer experience and reduce customer churn.

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APPENDIX

Measurement Items	
User Interface Quality (UIQ) – (Source: Lee et al., 2011)	
UIQ1.	If the website layout design is user friendly, I will be more likely to return to the online store.
UIQ2.	I will be attracted to repurchases from websites that use good colour combinations, quality pictures, and are easy to navigate.
UIQ3.	The relevant products or services are conveniently searchable through the website's search engine facilities.
UIQ4.	I will ensure that the website functions efficiently and effectively before making any repurchase decisions.
UIQ5.	I will be inclined to revisit the online shop if it is quick and easy to complete an order transaction at the website.
Product Information Quality (PIQ) – (Source: Sobihah et al., 2015)	
PIQ1.	The product information provided by the website is sufficient and helpful in making an online purchase decision.
PIQ2.	The website must provide up-to-date and reliable product information.
PIQ3.	The relevant product information is provided by the website.
PIQ4.	The product information on the website is easy to understand.
PIQ5.	Product information on the website is consistent with the product that a retailer sells.
E-Service Quality (ESQ) – (Source: Rita et al., 2019)	
ESQ1.	The online shop provides a telephone number to reach retailers.
ESQ2.	The online shop has customer service representatives available online.
ESQ3.	The retailers give prompt answers to consumers' questions online.
ESQ4.	The online shop provides me with convenient options for returning items.
ESQ5.	The online shop offers a meaningful product guarantee.
Security Perception (SP) – (Source: Al-Jahwari et al., 2018)	
SP1.	I feel secure providing personal information during online purchases.
SP2.	Online shopping has adequate security and payment features.
SP3.	I trust e-commerce websites because they conduct online trade responsibly.
SP4.	Online shopping ensures the return of goods and the retrieval of payment.
SP5.	The payment process can be relied upon during online transactions.
Privacy Perception (PP) – (Source: Eid, 2011)	
PP1.	The website abides by personal data protection laws.
PP2.	The website only collects the user's data that is necessary for its activity.
PP3.	The website does not provide my personal information to others without your consent.
PP4.	I feel protected when sending my personal information to the website.
PP5.	The website shows concern for the privacy of its consumers.
Customer Satisfaction (CS) – (Source: Vasić et al., 2019)	
CS1.	I am satisfied that websites offer many online purchasing options.
CS2.	I am satisfied with the product information that I have received from the website.
CS3.	I would recommend online shopping to other consumers.
CS4.	I have truly enjoyed purchasing from the website.
CS5.	I am satisfied with the after-sales service provided by the website.