p–ISSN: 2723 - 6609 e-ISSN: 2745-5254
Vol. 5, No. 7 July 2024 http://jist.publikasiindonesia.id/

Impact of E-Service Quality in Customer E-Loyalty of Marketplace with the Role of E-Satisfaction as Mediation

Gilang Pratama Hafidz[1]*, Muhamad Khaidir Ali[2]
Universitas Esa Unggul, Indonesia
Email: gilang.pratama@esaunggul.ac.id[1*], alimuhamadkhaidir@gmail.com[2]

*Correspondence

Keywords: customer e-loyalty, customer e-satisfaction, customer perceived value, e-service quality (e-sq).

ABSTRACT

In the e-commerce sector, attaining customer loyalty is a formidable task that necessitates particular focus from firms to outdo their contenders. This study sought to comprehensively comprehend the impact of e-service quality (e-SQ), encompassing seven utilitarian and two hedonic aspects, on customer e-loyalty in the marketplace. Both e-satisfaction and perceived value were examined as moderators and mediators, respectively, to provide a more empirical perspective. The study distributed online questionnaires to 265 participants between the ages of 18 and 60 who made at least two purchases from the top five Indonesian marketplaces within the last three months and reside in Greater Jakarta (Jabodetabek). The collected data underwent analysis using Structural Equation Modeling - Partial Least Square (SEM-PLS). The findings indicated that e-S) has the potential to enhance customer e-satisfaction. Similarly, e-SQ can enhance customer loyalty both directly and indirectly by increasing e-satisfaction. Additionally, customer satisfaction with the electronic platform has a positive impact on e-loyalty. Notably, perceived value does not play a moderating role in the influence of both factors. This study indicates that businesses operating in the e-commerce sector could enhance e-SQ factors like enjoyment, system availability, fulfilment, and efficiency to maximize e-satisfaction and e-loyalty.

Introduction

The rapid progress of technology in Indonesia has made the competition in the e-commerce industry also more intense and competitive. This can be observed in Indonesia's 2017, where approximately 30 million individuals shopped online out of a total population of 260 million as well as a plethora of electronic marketplaces, including Tokopedia, Shopee, Bukalapak, Lazada, Blibli, etc., emerged to facilitate trade transactions without direct interaction (Das, Tamhane, Vatterott, Wibowo, & Wintels, 2018).

Based on Iprice.co.id (2022), Shopee, Tokopedia, Bukalapak, Lazada and Blibli became the five largest marketplace players in Indonesia in the fourth quarter of 2020. Surprisingly, Indonesian online shoppers are not very loyal to one specific marketplace, as evidenced by the significant changes in the number of visits by loyal customers. For instance, during Q4 of 2020, Shopee emerged as the marketplace with the largest number of yearly visitors, amounting to 129,320,800, with Tokopedia following closely behind with 114,655,600 visitors. In Q4 2021, Shopee dropped to second place with an annual visitor count of 138,776,700, while Tokopedia claimed the top spot with 157,443,300 visitors. This indicates that maintaining customer loyalty is crucial in the e-commerce industry, both online and in traditional markets (Kim, Wang, & Roh, 2021).

In the e-commerce sector, developing customer loyalty online poses a difficult task that demands that online businesspeople pay particular attention to move ahead of their rivals (Ghali, 2021). Companies only obtain profits when customers have made an average purchase of more than four times. However, how the company produces customer e-loyalty itself remains a problematic and complex phenomenon. This is due to the difficulty of switching to similar competitors, which is usually one click away. Companies also need a lengthy process to build customer e-loyalty. (Kotler, Armstrong, Harris, & He, 2020) stated that e-satisfaction is very crucial, and it is key for companies to build profitable and sustainable relationships. Satisfied customers not only make repeat purchases but also spread positive word-of-mouth and cultivate e-loyalty by buying similar items. Moreover, for both established and emerging e-commerce industries, e-service quality (e-SQ) plays a vital role in e-loyalty formation (Eryiğit & Fan, 2021). However, online shoppers report concerns, anxiety, and risk perception, which puts pressure on companies to enhance e-service quality (e-SQ) by improving its functionality (utilitarian) and making it a more satisfying user experience (hedonic) (Shatnawi, 2019). Therefore, business people must understand how consumers interpret e-SQ, and the consequences companies receive (Parasuraman, Zeithaml, & Malhotra, 2005).

Numerous researches have examined the connections between e-SQ, customer e-satisfaction, e-loyalty, and perceived value. This research showed that e-SQ is related to customer e-satisfaction (Rodríguez, Villarreal, Valiño, & Blozis, 2020) and influenced by their e-loyalty. According to preliminary research by (Brusch, Schwarz, & Schmitt, 2019), customer e-satisfaction relates to e-loyalty. It is also an e-SQ mediation against e-loyalty. Customer perceived value strengthens their e-satisfaction and e-loyalty. However, there are inconsistencies regarding the analysts' views on the relationship between both factors. Some preliminary research stated that there is no direct correlation between e-SQ and customer e-loyalty, as opposed to several others. Furthermore, the researchers who examined the factors that cause customer e-loyalty and customer e-satisfaction usually concentrated only on utilitarian characteristics while ignoring hedonic characteristics. The purchase decision process involves both rational and emotional factors (Shatnawi, 2019). As a result, researchers have criticized the absence of hedonic constructs from previous studies on e-service quality.

The most crucial act, which frequently presents obstacles for a business, is ascertaining the value of its services to customers (Parasuraman et al., 2005). According to preliminary studies, consumers' perceptions of value vary based on individual tastes, level of service knowledge, purchasing power, and capability. Therefore, companies must be able to understand how perceived value encourages buyers to feel the benefits that are offered and accepted by them (Amalia & Nurlinda, 2022). Additionally, over the past few years, the strategies used to determine consumer perceived value have been updated, making it fascinating to continue researching (El-Adly & Eid, 2016). Moreover, the role of customer-perceived value moderation in the relationship between e-satisfaction and e-loyalty is added to this research model. This analysis is also centred on the Indonesian marketplace, which makes this research unique.

This research aims to enhance empirical understanding of the impact of e-SQ while accounting for relevant knowledge gaps. Our study investigates seven utilitarian and two hedonic dimensions of customer e-loyalty in the marketplace. To better comprehend their effects, e-satisfaction and perceived values will be evaluated as mediating and moderating factors, respectively. This gives stakeholders new insights needed to boost competitiveness, especially through aspects of e-SQ.

E-Commerce

The rapid expansion of technology, particularly the internet, has transformed the process of buying, selling, and marketing products in present times. E-commerce, according to DeLone & McLean (2004), denotes the use of the Internet as a medium for engaging buyers and sellers in conducting and processing business transactions and exchanging products or services for money. Defined e-commerce as the use of information and communication technology for distributing products and services to consumers through supplier organizations and conducting financial and non-financial transactions. This definition includes the buying and selling of products or services via the Internet along with the entire process (Nisar & Prabhakar, 2017). This is according to Laudon & Laudon's (2018) research, which defines e-commerce as the utilization of the internet, networks, and other digital information to exchange goods and services. E-commerce consists of multiple categories, specifically business-to-consumer (B2C), business-to-business (B2B), and consumer-to-consumer (C2C) transactions conducted by companies, individual buyers, businesses, and fellow consumers, respectively. Therefore, based on the above explanations, this research defined e-commerce as a comprehensive transaction process used by organizations to sell products or services to consumers through information and communication technology.

Research Methods

Research Design

The causality research, which determines the relationship between two or more variables, was used to design this research (Rahma & Syah, 2023). It comprises exogenous, mediator, moderator, and endogenous variables in the form of e-SQ, customer e-satisfaction, perceived value, and e-loyalty, respectively.

Variable Measurement

In recent years, the proper specification of the model has become a significant concern in e-SQ research, with the belief that e-SQ may be more effectively conceptualised in a formative as opposed to reflective manner. Unlike reflective measurement models, formative measurement models establish the causal flow from indicators to latent constructs.

According to (Theodosiou, Katsikea, Samiee, & Makri, 2019), there are fundamental factors to consider here. Firstly, it is logical to anticipate that every e-SQ dimension causes the overall e-SQ, not the other way around. For instance, users' appraisals of website quality concerning contact, privacy or system availability aid in forming perceptions of overall e-SQ. Secondly, e-SQ dimensions cannot be switched. For instance, privacy encompasses particular features within the construct's conceptual field that cannot be substituted by other facets like system accessibility. Moreover, the divergent e-SQ gauges do not necessarily fluctuate in correlation with other associated variables. Lastly, no data indicate that different e-SQ facets have identical antecedents and outcomes. Thus, this indicates that the conceptualization of e-SQ should utilize reflective indicators for first-order constructs and formative indicators for second-order constructs. This suggests that Type II dimensions, reflective-formative, may present a more suitable approach. Ultimately, this allows the formative model to provide a more conceptually deeper understanding of e-SQ in the e-commerce industry.

The measurement of e-service quality (e-SQ) variables is based on the research of Parasuraman et al. (2005) and is utilitarian consisting of seven dimensions: efficiency (8 statements), fulfilment (7 statements), privacy (4 statements) and system availability (4 statements), responsiveness (5 statements), compensation (3 statements) and contact (3 statements) combined with the research of (Theodosiou et al., 2019) He-donistic consists of two dimensions: enjoyment (4 statements) and virtual emotion (3 statements) which total 40 statements operationalized as reflective – formative type. Furthermore, the related size of the customer variable perceived value, e-satisfaction, and e-loyalty adopted from Chang et al. (2009) consists of 3, 4, and 6 statements operationalized as reflective, respectively. Therefore, the total measurements used in this research amounted to 53 statements.

Population and Sample

The population of this research is all Indonesian marketplaces (Shopee/Tokopedia/Bukalapak/Lazada/Blibli) infinite number of users, while the sample used a non-probability sampling method. In this study, we used a purposive sampling technique. The criteria for respondent selection were those within the age range of 18 to 60 who have made purchase activities at least two times in the last three months and domiciled in the Greater Jakarta area. The number of samples was determined based on (Sarstedt, Hair Jr, Cheah, Becker, & Ringle, 2019) the minimum sample needed, which is 5 times the statements. Therefore, this research requires 265 respondents (53 statements x 5), with a proportion of 20% from each marketplace.

Data collection was implemented using a non-probability method in the form of judgment or purposive sampling and predetermined according to criteria and quality. The data collection utilizes Google Form as a questionnaire tool distributed twice online with a Likert scale of 1 – 7, where 1, 2, 3, 4, 5, 6, and 7 de-note strongly disagree, disagree, disagree enough, neutral, agree, and strongly agree, respectively. As there are more options on it, there is a higher chance that the response will be related to the respondent's experience (Joshi et al., 2015). Therefore, this research used primary data derived from the results of the distributing questionnaires after processing.

Data Analysis Methods

This research first conducted a pretest test on 30 samples with validity testing using statistical software. It aims to determine the extent of the instrument's accuracy used in measuring the variables. Kaiser Meyer Olkin (KMO) and Measure of Sampling Adequacy (MSA) were used to test the questionnaire validity with values >0.50 for each variable (Napitupulu, Kadar, & Jati, 2017). The MSA value must be >0.50 for each indicator, hence, when there is a statement indicator not capable of exceeding that value, and then the indicator must be omitted in further analysis. In addition, reliability testing was also carried out to know the level of consistency and trust of measuring instruments using Cronbach's Alpha method with the general pro-vision of an α value of 0.6 – 0.7 (Ursachi et al., 2015).

Structural Equation Modeling (SEM), specifically the Partial Least Squares (PLS-SEM) technique, was utilized as the statistical software in this study. PLS-SEM is a variance-based method for estimating structural equations that includes measurement and structural components to maximize the described variance of the endogenous latent variables. In essence, PLS-SEM is appropriate for research studies aimed at developing theories. Therefore, the Disjoint Two-stage Approach is suitable when there are higher-order models known as Hierarchical Component Models (HCMs) Type II: Reflective-Formative (Sarstedt et al., 2019).

A reflective outer model test stage is carried out, determining the loading factor, composite reliability, convergent validity, and discriminant validity. Meanwhile, the formative measurement models are evaluated by analyzing the collinearity, significance, and relevance of outer weight. This is followed by determining the inner model testing using one-tailed, collinearity, R-square, path coefficients, and indirect effects. R-Square guidelines used are 0.75, 0.50, and 0.25, indicating strong, moderate, and weak. In addition, a bootstrapping procedure was carried out in which the entire original sample was used to resample at a t-value of 1.65 and a confidence level of 95% for significance testing to determine the influence between variables.

Results and Discussion

A pretest was conducted to evaluate the validity and reliability of the study. Validity testing requires KMO and MSA values above 0.50. Our calculations revealed that all 53 statement indicators in this study met these requirements, with both the KMO test (0.580 - 0.907) and the MSA test (0.549 - 0.933) satisfying these criteria. Moreover, the

assessment of reliability can be measured through Cronbach's alpha with a range of 0.6 to 0.7 considered acceptable (Ursachi et al., 2015). After processing the data, it was discovered that all indicators of the questionnaire statement exceeded the value limit set beforehand (0.751-0.964), indicating its reliability and usefulness for future analysis.

Descriptive analysis of respondent demographic information reveals that the sample of 265 respondents is comprised of 81 men (30.6%) and 184 women (69.4%). The sample represents each marketplace (Shopee, Tokopedia, Bukalapak, Lazada, and Blibli), with 53 respondents (20%) from each. The respondents are domiciled in Jakarta (25.3%), Bogor (22.3%), Depok (15.1%), Tangerang (14.7%), and Bekasi (22.6%). The majority of respondents are aged between 18 and 21 years, which accounts for 120 respondents (45%) who are believed to be the core marketplace market in the future, followed by 22-39 years old as many as 101 respondents (38.1%) who are believed to be active users of the current marketplace, and 40-60 years old as many as 44 respondents (16.6%) who are believed to be the group that spends the most money in the marketplace. Unexpectedly, 119 respondents (44.9%) have been using the marketplace for over three years, with the highest frequency of shopping being 8-12 times in the last three months, as reported by 88 respondents (33.2%). Additionally, accessories & fashion and care & beauty were equally popular product categories, with 68 respondents each (25.7%), while the majority of respondents spent between Rp5,000,0000 to Rp9,999,999 per month, amounting to 112 respondents (42.3%).

Table 1
Descriptive Analysis of Respondents

Items	N	Categories	Frequency	Percentage
Respondent Demographics				
Gender	265	Male	81	30.6%
		Female	184	69.4%
Age		18-21 years old	120	45.3%
		22-39 years old	101	38.1%
		40-60 years old	44	16.6%
Domicile		Jakarta	67	25.3%
		Bogor	59	22.3%
		Depok	40	15.1%
		Tangerang	39	14.7%
		Bekasi	60	22.6%
Monthly Expenses		< IDR 2,999,9999	30	11.3%
		IDR 3,000,000 - IDR 4,999,999	101	38.1%
		IDR 5,000,000 – IDR 9,999,999	112	42.3%
		> IDR 10,000,000	22	8.3%
Respondent Usage				
Marketplaces Used	265	Shopee	53	20%
		Tokopedia	53	20%
		Bukalapak	53	20%
		Lazada	53	20%
		Blibli	53	20%

Marketplace Usage Period	<1 Year	55	20.8%
	1-2 Years	91	34.3%
	≥3 Years	119	44.9%
Online Shopping Frequency	2 times	55	20.8%
	3-7 Times	74	27.9%
	8-12 Times	88	33.2%
	>12 Times	48	18.1%
Product Category	Accessories and Fashion	68	25.7%
	Electronic	41	15.5%
	Food and Drink	23	8.7%
	Household Goods	65	24.5%
	Care and Beauty	68	25.7%

Furthermore, a cross-tabulation analysis was conducted on 265 respondents' demographics and usage patterns to identify specific characteristics. The data reveals that the majority of marketplace users are in the 18-21 age range, with 12.5% selecting Tokopedia, 11.3% opting for Blibli and 8.3% choosing Shopee. Bukalapak's users consist predominantly of those between 22-39 years old (14.3%), while Laza-da's user base is evenly distributed between the 18-21 and 22-39 age groups at 7.5%. Secondly, regarding product categories by gender, it can be noted that the care & beauty category (20.8%) and household supplies (20.4%) are popular amongst female marketplace users, whereas male marketplace users tend to shop online for products in the accessories & fashion category (10.9%) and electronics (7.2%). Finally, according to the length of marketplace usage, the shopping frequency indicates that the majority of marketplace users are individuals who have been utilising the marketplace for over 3 years, purchasing online between 8-12 times within the past 3 months (18.5%). This is followed by individuals who have been using the marketplace for 1-2 years, making online purchases 8-12 times within the past 3 months (12.5%).

Assessing Reflective Measurement Models

(Sarstedt et al., 2019) State that the initial step in evaluating the reflective measurement model is to assess the loading of the indicators. This involves analyzing the loading factor values that exceed 0.70. Results from data analysis in this study indicated that EFF1, EFF2, EFF3, EFF6, FUL4, FUL5, and SYS4 indicators do not meet the standards and must be eliminated. Conversely, the remaining indicators have outer loading values (0.719-0.886) greater than 0.70.

The second step utilized internal consistency reliability to assess the consistency of outcomes among indicators, gauging the latent construct through composite reliability and Cronbach's alpha value of >0.6 - 0.7 (Hair & Alamer, 2022). The data processing results showed that all constructs had a composite reliability value from 0.796 to 0.932 and a Cronbach's alpha value from 0.625 - 0.912, satisfying the specified requirements.

The third step, convergent validity, measures if indicators are positively correlated with other indicators of the same construct. It is evaluated through Average Variance Extracted (AVE) analysis at values exceeding 0.50. The data processing analysis

indicates that the reflective indicators had AVE values ranging from 0.560 to 0.778, which is above the threshold of 0.50. As a result, the convergent validity of the reflective indicators is valid.

Table 2
Loading Factor, AVE, Composite Reliability, and Cronbach's alpha

No. Items	Convergent Validity		Internal Consistency Reliability	
	Loading Factor	AVE	Composite Reliability	Standardized Cronbanch's α
EFF4	0.746	0.612	0.863	0.788
EFF5	0.830			
EFF7	0.813			
EFF8	0.736			
FUL1	0.799	0.605	0.885	0.837
FUL2	0.779			
FUL3	0.747			
FUL6	0.787			
FUL7	0.777			
SYS1	0.761	0.609	0.824	0.681
SYS2	0.786			
SYS3	0.794			
PRI1	0.839	0.726	0.888	0.811
PRI2	0.879			
PRI3	0.836			
RES1	0.833	0.652	0.903	0.866
RES2	0.838			
RES3	0.856			
RES4	0.734			
RES5	0.770			
COM1	0.880	0.778	0.913	0.857
COM2	0.879			
COM3	0.886			
CON1	0.848	0.713	0.882	0.799
CON2	0.847			
CON3	0.839			
ENJ1	0.765	0.560	0.836	0.741
ENJ2	0.719			
ENJ3	0.726			
ENJ4	0.782			
VE1	0.750	0.566	0.796	0.625
VE2	0.739			
VE3	0.766			
e-SAT1	0.824	0.714	0.882	0.799
e-SAT2	0.841			
e-SAT3	0.868			
e-LOY1	0.837	0.695	0.932	0.912
e-LOY2	0.824			
e-LOY3	0.858			
e-LOY4	0.871			
e-LOY5	0.840			
e-LOY6	0.769			

No. Items	Convergent Validity		Internal Consistency Reliability	
	Loading Factor	AVE	Composite Reliability	Standardized Cronbanch's α
CPV1	0.774	0.644	0.879	0.817
CPV2	0.808			
CPV3	0.774			
CPV4	0.853			

Finally, a construct is considered to have discriminant validity if it captures unique phenomena not identified by other constructs in the model. It indicates the extent to which a concept is distinct from others based on empirical standards. Henseler et al. (2015) describe three methods for validating the discriminant, with the first based on the Fornell-Larcker Criterion that determines the reference square root of each AVE construct, which should be greater than its highest correlation with other constructs. It is crucial to use these methods to ensure the validity of the discriminant. The second method is Cross Loading, which sets a reference value of >0.70.

Table 3
Fornell-Larcker Criterion

	COM	CON	LOY	SAT	CPV	EFF	ENJOY	FULL	PRI	RES	SYS	VE
COM	0.882											
CON	0.632	0.845										
LOY	0.483	0.576	0.834									
SAT	0.535	0.642	0.760	0.845								
CPV	0.486	0.633	0.758	0.740	0.803							
EFF	0.586	0.594	0.697	0.740	0.628	0.782						
ENJ	0.488	0.605	0.716	0.720	0.663	0.690	0.748					
FULL	0.597	0.613	0.661	0.665	0.679	0.669	0.588	0.778				
PRI	0.535	0.577	0.578	0.657	0.557	0.732	0.587	0.553	0.852			
RES	0.703	0.643	0.677	0.679	0.607	0.733	0.681	0.738	0.633	0.808		
SYS	0.419	0.441	0.675	0.684	0.592	0.698	0.627	0.602	0.599	0.623	0.780	
VE	0.637	0.630	0.560	0.649	0.597	0.667	0.675	0.554	0.618	0.646	0.542	0.752

Table 4
Cross Loading

	COM	CON	LOY	SAT	CPV	EFF	ENJOY	FULL	PRI	RES	SYS	VE

COM 1	**0.880**	0.521	0.433	0.447	0.403	0.540	0.421	0.524	0.494	0.638	0.347	0.561
COM 2	**0.879**	0.564	0.404	0.455	0.392	0.482	0.428	0.500	0.446	0.606	0.339	0.535
COM 3	**0.886**	0.586	0.440	0.511	0.485	0.527	0.441	0.552	0.475	0.615	0.417	0.586
CON 1	0.552	**0.848**	0.492	0.515	0.514	0.513	0.491	0.546	0.481	0.562	0.372	0.491
CON 2	0.471	**0.847**	0.507	0.554	0.553	0.514	0.531	0.505	0.513	0.537	0.423	0.552
CON 3	0.583	**0.839**	0.459	0.558	0.535	0.478	0.510	0.504	0.467	0.531	0.321	0.553
CPV 1	0.437	0.486	0.555	0.596	**0.774**	0.497	0.558	0.485	0.497	0.504	0.444	0.579
CPV 2	0.330	0.488	0.682	0.621	**0.808**	0.507	0.538	0.530	0.450	0.472	0.517	0.455
CPV 3	0.286	0.474	0.502	0.526	**0.774**	0.382	0.455	0.534	0.300	0.363	0.386	0.367
CPV 4	0.496	0.578	0.666	0.623	**0.853**	0.604	0.571	0.627	0.520	0.590	0.533	0.511
EFF4	0.441	0.525	0.597	0.612	0.568	**0.746**	0.594	0.537	0.567	0.556	0.524	0.487
EFF5	0.537	0.470	0.555	0.573	0.528	**0.830**	0.543	0.567	0.587	0.627	0.572	0.593
EFF7	0.456	0.422	0.539	0.596	0.474	**0.813**	0.516	0.534	0.600	0.572	0.635	0.528
EFF8	0.395	0.433	0.479	0.527	0.375	**0.736**	0.496	0.446	0.529	0.536	0.441	0.476
ENJ1	0.334	0.433	0.543	0.548	0.462	0.512	**0.765**	0.422	0.415	0.507	0.545	0.436
ENJ2	0.332	0.424	0.431	0.432	0.442	0.399	**0.719**	0.372	0.372	0.429	0.308	0.511
ENJ3	0.560	0.523	0.481	0.499	0.480	0.575	**0.726**	0.493	0.528	0.604	0.401	0.684
ENJ4	0.269	0.442	0.649	0.639	0.581	0.561	**0.782**	0.468	0.443	0.500	0.571	0.431
FUL1	0.500	0.465	0.478	0.500	0.493	0.535	0.415	**0.799**	0.394	0.630	0.441	0.454
FUL2	0.441	0.452	0.459	0.466	0.497	0.470	0.420	**0.779**	0.389	0.535	0.467	0.395
FUL3	0.509	0.413	0.491	0.437	0.437	0.478	0.429	**0.747**	0.436	0.601	0.405	0.419
FUL6	0.492	0.562	0.569	0.590	0.616	0.580	0.511	**0.787**	0.489	0.572	0.505	0.510
FUL7	0.387	0.475	0.554	0.567	0.571	0.526	0.496	**0.777**	0.432	0.538	0.508	0.370

e-LOY 1	0.309	0.397	**0.837**	0.593	0.591	0.514	0.525	0.538	0.412	0.515	0.571	0.333
e-LOY 2	0.359	0.455	**0.824**	0.631	0.606	0.597	0.594	0.558	0.481	0.537	0.566	0.435
e-LOY 3	0.487	0.506	**0.858**	0.643	0.624	0.587	0.613	0.578	0.451	0.624	0.560	0.500
e-LOY 4	0.403	0.437	**0.871**	0.614	0.675	0.593	0.591	0.616	0.487	0.586	0.610	0.416
e-LOY 5	0.353	0.517	**0.840**	0.668	0.630	0.602	0.634	0.501	0.527	0.565	0.555	0.504
e-LOY 6	0.502	0.566	**0.769**	0.651	0.662	0.592	0.620	0.509	0.531	0.555	0.512	0.608
PRI1	0.452	0.524	0.448	0.561	0.506	0.628	0.484	0.452	**0.839**	0.524	0.467	0.526
PRI2	0.482	0.524	0.528	0.575	0.475	0.614	0.503	0.436	**0.879**	0.546	0.530	0.566
PRI3	0.432	0.425	0.499	0.542	0.444	0.628	0.513	0.527	**0.836**	0.549	0.534	0.485
RES1	0.555	0.518	0.568	0.577	0.539	0.645	0.556	0.608	0.613	**0.833**	0.557	0.550
RES2	0.525	0.502	0.522	0.567	0.497	0.578	0.576	0.579	0.498	**0.838**	0.525	0.502
RES3	0.568	0.546	0.640	0.647	0.543	0.649	0.600	0.676	0.540	**0.856**	0.600	0.546
RES4	0.516	0.460	0.476	0.449	0.440	0.537	0.515	0.540	0.437	**0.734**	0.414	0.478
RES5	0.690	0.574	0.508	0.470	0.416	0.539	0.495	0.563	0.454	**0.770**	0.384	0.532
e-SAT1	0.367	0.524	0.626	**0.824**	0.603	0.624	0.634	0.561	0.536	0.546	0.581	0.532
e-SAT2	0.510	0.556	0.630	**0.841**	0.621	0.592	0.578	0.569	0.532	0.571	0.556	0.525
e-SAT3	0.480	0.548	0.669	**0.868**	0.651	0.659	0.612	0.556	0.595	0.602	0.595	0.587
SYS1	0.242	0.366	0.589	0.579	0.565	0.453	0.518	0.477	0.394	0.448	**0.761**	0.345
SYS2	0.373	0.313	0.454	0.476	0.378	0.585	0.473	0.443	0.518	0.506	**0.786**	0.436
SYS3	0.378	0.347	0.520	0.532	0.421	0.609	0.470	0.483	0.504	0.508	**0.794**	0.497

VE1	0.338	0.499	0.503	0.568	0.471	0.551	0.580	0.445	0.572	0.537	0.541	**0.750**
VE2	0.518	0.454	0.339	0.416	0.393	0.412	0.458	0.369	0.356	0.407	0.290	**0.739**
VE3	0.624	0.461	0.390	0.452	0.472	0.520	0.462	0.423	0.426	0.491	0.345	**0.766**

The third is the Heterotrait-Monotrait Ratio (HTMT), with a reference value of <0.90. The results of the menu data processing analysis show that all constructs meet the good validity requirements of the three approaches, except for the HTMT perceived value against e-satisfaction (0.911), efficiency against e-satisfaction (0.929), enjoyment against e-satisfaction (0.929), system availability against e-satisfaction (0.917), privacy against efficiency (0.915), system availability against efficiency (0.955), virtual emotion against efficiency (0.931), and virtual emotion against enjoyment (0.991).

Table 5 HTMT

	COM	CON	LOY	SAT	CPV	EFF	ENJOY	FULL	PRI	RES	SYS	VE
COM												
CON	0.765											
LOY	0.545	0.674										
SAT	0.645	0.804	0.890									
CPV	0.574	0.780	0.867	0.911								
EFF	0.711	0.746	0.819	0.929	0.766							
ENJ	0.625	0.788	0.852	0.917	0.838	0.890						
FULL	0.705	0.744	0.749	0.804	0.810	0.816	0.736					
PRI	0.641	0.716	0.671	0.815	0.677	0.915	0.756	0.668				
RES	0.821	0.775	0.756	0.807	0.709	0.884	0.847	0.865	0.752			
SYS	0.552	0.592	0.845	0.917	0.770	0.955	0.850	0.788	0.812	0.801		
VE	0.890	0.882	0.719	0.895	0.822	0.931	0.991	0.751	0.838	0.861	0.799	

Assessing Formative Measurement Models

In this study, the dimensions of e-SQ (efficiency, fulfilment, privacy, system availability, responsiveness, compensation, contact, enjoyment, and virtual emotion) are second-order constructs with a reflective-formative type. Each first-order construct is reflective in its relationship to the e-SQ indicators, while the dimensions of e-SQ are formative. According to (Hair & Alamer, 2022), a high correlation is not expected

between indicators in formative measurement models. This test is carried out based on the Variance Inflation Factor (VIF) value, provided it is <5.00, and when it exceeds the limit, there is a problem with collinearity. The results of the data processing analysis concluded that the collinearity issue was unfounded because the VIF value (2.338 – 3.750) is by the applicable reference.

Table 6
Formative Measurement Model Evaluation

Variable	Indicator	VIF	Outer Weights (Outer Loadings)	T Statistics	P Values
E-Service Quality (E-SQ)	Efficiency (EFF)	3.644	0.200 (0.877)	2.554	0.005
	Fulfillment (FUL)	2.619	0.185 (0.808)	2.682	0.004
	System Availability (SYS)	2.338	0.251 (0.828)	4.754	0.000
	Privacy (PRI)	2.454	0.060 (0.754)	0.950	0.171
	Responsiveness (RES)	3.750	0.054 (0.827)	0.562	0.287
	Compensation (COM)	2.506	-0.041 (0.622)	0.665	0.253
	Contact (CON)	2.350	0.163 (0.744)	2.169	0.015
	Enjoyment (ENJ)	2.705	0.319 (0.876)	4.997	0.000
	Virtual emotions (VE)	2.647	0.003 (0.739)	0.046	0.482

Furthermore, the required criteria to evaluate formative indicators is conducted by examining the outer weight and loading using bootstrapping to determine their significance. Therefore, the indicator is maintained when the outer weight is significant. The indicator should be kept assuming it is not statistically significant at the outer weight but at the loading value ≥0.50. Conversely, when the indicator value on the outer loading is <0.5, the model is considered for deletion. The data processing results show that formative indicators have passed the existing provisions. The data processing results show that efficiency, fulfilment, system availability, contact, and enjoyment have significant outer weight values (T statistics of 2.169 – 4.997 > 1.65 with a P value of 0.000 – 0.015 < 0.05), while privacy, responsiveness, compensation, and virtual emotion has an insignificant outer weight value (T statistic of 0.046 – 0.950 < 1.65 with P value 0.171 – 0.482 > 0.05). However, the outer loading value (0.622 – 0.827) ≥ 0.50 so that the indicators are maintained. Thus, formative indicators have passed the existing provisions.

Assessing Structural Models

Collinearity needs to be investigated to make sure it isn't skewed the regression findings before evaluating the structural linkages. This process, similar to evaluating formative measurement models, determines the VIF values using the exogenous constructs' latent variable scores. The VIF value (1.00 - 4.05) was < 5.00, meeting the specified criteria based on the data processing outcomes.

The guidelines of 0.75 (strong), 0.50 (moderate), and 0.25 (weak) indicate that the coefficient of determination (R2) measures the combined effect of exogenous latent variables on endogenous. The data processing results reveal that the e-SQ variable effectively explains customer e-satisfaction by 69.30%. This means that 30.70% of other variables not analyzed in this research explain customer e-satisfaction. In addition, the e-SQ, customer e-satisfaction, and customer perceived value variable is rated R2 by 71.10% to explain the e-loyalty, while the remaining 28.90% explained others, not in this research. This study utilized a bootstrapping procedure to assess the significance of the path coefficient in testing existing hypotheses, with consideration given to notable influences. When the T-value surpasses 1.65 with a 95% confidence level, and the P-value remains below 0.05, the original sample is deemed appropriate to determine the relationship direction.

Mediation Analysis

A mediation analysis was performed to evaluate the impact of customer e-satisfaction on the relationship between e-SQ and e-loyalty. The findings showed a significant indirect effect of e-SQ on customer e-loyalty through e-satisfaction (H4: Original sample = 0.119, T statistic = 1.680 > 1.65, P value = 0.047 < 0.05). The effect of total e-SQ on customer e-loyalty was also significant (Original sample = 0.547, T statistic = 7.102 > 1.65, P value = 0.000 < 0.05), with the inclusion of mediators. The impact of e-SQ on customer e-loyalty is noteworthy (Original sample = 0.456, T statistical = 4.645 > 1.65, P value = 0.000 < 0.05). The study indicates that the contribution of supplementary customer e-satisfaction towards the link between e-SQ and e-loyalty influences e-loyalty indirectly. Hence, according to the results from the mediation analysis test, H4 is confirmed.

Table 7
Mediation Analysis Results

Total effect (e-SQ -> Customer e-Loyalty)		**Direct effect (e-SQ -> Customer e-Loyalty)**		**Indirect Effects of e-SQ on Customer e-Loyalty**			
Coefficient	P-Value	Coefficient	P-Value		Coefficient	T-Value	P-Values
0.574	0.000	0.456	0.000	H4	0.119	1.680	0.047

The initial finding of this study indicates that e-SQ has a favourable effect on customer e-satisfaction. It implies that the e-satisfaction of marketplace customers will increase alongside the enhancement in the provided e-SQ. Customers are content with their purchase from the marketplace owing to the hedonic aspect of e-SQ, which is

demonstrated in the form of the enjoyment dimension and is capable of offering a comfortable shopping experience. This sense of comfort is derived by customers from the system's availability dimension. They perceive that the marketplace functions properly and runs smoothly. Customers experience efficiency since they can access the marketplace quickly, specifically by loading the page. From the cross-tabulation analysis, it is evident that respondents aged 18-21 years dominate, with 120 respondents (45.3%) selecting the Tokopedia marketplace (12.8%), Blibli (11.3%), Shopee (8.3%), Laza-da (7.5%) and Bukalapak (5.7%). The advanced technology proficiency of the demographic group indicates a deeper comprehension of the marketplace's service quality. This is consistent with prior research, indicating that e-SQ positively affects e-satisfaction highlighting the importance of the hedonic aspect, which may enhance the probability of new users revisiting a website.

This study demonstrates that e-SQ has a beneficial effect on customer e-loyalty, specifically, the better the e-SQ offered by the marketplace, the greater the increase in e-loyalty amongst its customers. The marketplace is preferred by customers due to its fulfilment aspect, where it fulfils delivery promises and is capable of delivering goods within an acceptable timeframe as deemed by customers. In addition, the contact aspect of e-SQ, specifically the marketplace, offers a company helpline for customers as well as an online customer service representative to report any issues that may arise. The cross-tabulation analysis results reveal that the largest proportion of female marketplace users purchase care & beauty items (20.8%) and household supplies (20.4%) online, whilst the majority of male marketplace users buy accessories & fashion items (10.9%) and electronics (7.2%) online. These findings suggest gender differences in online shopping preferences and, consequently, varying delivery requirements. This statement is supported by prior studies that demonstrated a positive correlation between e-SQ and customer e-loyalty.

Furthermore, the third research finding indicates that customer satisfaction with online experiences has a favourable effect on e-loyalty. This implies that enhanced customer e-satisfaction leads to increased e-loyalty. Customers feel it is a wise choice to shop at the marketplace so that even if customers have to buy again at the marketplace, they will still be satisfied. In effect, this makes the marketplace the best place for them to shop. This is reinforced by previous research that found customer e-satisfaction is the basis of the intention to remain loyal to online consumers (Brusch et al., 2019).

Another important finding of this study is that customer e-satisfaction acts as a mediator for e-SQ in terms of customer e-loyalty, which is acceptable. This implies that an improvement in the e-satisfaction of customers by the marketplace will result in an increase in the e-loyalty of marketplace users due to better provision of e-SQ. Customers enjoy browsing in the marketplace as it is organized efficiently and provides thorough information, leading to customer satisfaction. As a result, they often recommend the marketplace to others seeking online shopping advice and choose it as their preferred online shopping destination. The findings of this investigation are corroborated by prior

scholarship that discovered e-satisfaction impacts user conduct and e-SQ evaluation influences e-satisfaction, subsequently impacting e-loyalty.

Finally, the results showed that customer-perceived value does not strengthen the relationship between e-satisfaction and e-loyalty. These results are not in line with the research conducted by (Kim et al., 2021) that customer perceived value is moderation between e-satisfaction and e-loyalty. This is because the majority of respondents have had sufficient shopping experience 8-12 times in the last 3 months (33.2%) consisting of usage duration of more than 3 years (18.5%), 1-2 years (12.5%), and under 1 year (2.3%) This makes process makes customers satisfied with the e-SQ provided by the marketplace, which ultimately results in the inability of variables of customer perceived value to strengthen the relationship between e-satisfaction and e-loyalty. Therefore, although customer perceived value has increased, it does not raise their e-satisfaction, which impacts e-loyalty. In other words, satisfied customers will potentially increase e-loyalty, even when there is not a perceived value variable that acts as moderation. This is reinforced by the results of the second hypothesis that e-SQ directly affects customers' e-loyalty.

Conclusion

This study analyzes how e-SQ affects customer e-satisfaction as a mediator, and in turn, customer e-loyalty. Additionally, the moderating role of customer-perceived value is considered. Bagozzi's (1992) appraisal-emotional reactions-behavior framework guides this research, which focuses on marketplace customers in Indonesia. Therefore, it can be concluded from the research findings that higher levels of e-SQ, particularly relating to enjoyment, system availability, fulfillment, and efficiency, provided by the marketplace, correspond to increased e-satisfaction and e-loyalty among its customers. The study consisted mainly of respondents aged between 18 and 21 (45.3%), suggesting that they have a greater level of technological proficiency and are therefore more familiar with marketplace service quality. In addition, it appears that male and female respondents exhibit differing preferences for online shopping. Males are inclined towards accessories & fashion (10.9%) as well as electronics (7.2%), while females display dominance in care & beauty (20.8%) as well as household supplies (20.4%). These variances suggest unique requirements for product delivery.

Then, higher e-satisfaction among marketplace customers leads to increased customer e-loyalty. As the marketplace improves e-SQ through the e-satisfaction of its customers, their e-loyalty will also increase. Customer e-satisfaction acts as a mediator between e-SQ and customer e-loyalty. This means that as the marketplace improves e-SQ through the e-satisfaction of its customers, their e-loyalty will also increase. However, the results demonstrate that even if there are no moderating variables in the form of customer perceived value, satisfied customers can enhance e-customer loyalty.

This research has limitations that should be addressed in future investigations. Specifically, the study only included participants residing in the Greater Jakarta area as online marketplace customers. Therefore, the findings may not be generalizable to other

populations. Furthermore, the correlation between e-loyalty and geography may be a potential weakness. Those with limited geographic mobility may feel compelled to remain loyal to online purchasing, due to the convenience of this option in light of their location, compared to those with greater mobility. Further research is needed to include users from diverse areas. Additionally, this study has restricted its determination of e-loyalty to the variables of e-SQ, customer e-satisfaction, and perceived value. Further research is recommended as several factors related to customer e-loyalty remain to be investigated, including e-trust and e-commerce innovation. It is anticipated that more comprehensive research will provide an in-depth understanding of the subject.

Bibliography

Brusch, Ines, Schwarz, Benjamin, & Schmitt, Rebecca. (2019). David versus goliath-service quality factors for niche providers in online retailing. *Journal of Retailing and Consumer Services*, *50*, 266–276.

Das, Kaushik, Tamhane, Toshan, Vatterott, Ben, Wibowo, Phillia, & Wintels, Simon. (2018). *The digital archipelago*.

Eryiğit, Canan, & Fan, Yanrong. (2021). The Effects of Convenience and Risk on E-Loyalty through the Mediating Role of E-Service Quality: A Comparison for China and Turkey. *Journal of International Consumer Marketing*, *33*(5), 613–626.

Ghali, Zohra. (2021). Motives of customers-loyalty towards e-banking services: a study in Saudi Arabia. *Journal of Decision Systems*, *30*(2–3), 172–193.

Hair, Joseph, & Alamer, Abdullah. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027.

Kim, Yaeri, Wang, Qiran, & Roh, Taewoo. (2021). Do information and service quality affect perceived privacy protection, satisfaction, and loyalty? Evidence from a Chinese O2O-based mobile shopping application. *Telematics and Informatics*, *56*, 101483.

Kotler, P., Armstrong, G., Harris, L. C., & He, H. (2020). *Principles of Marketing. Eighth Eur*. Pearson Education Limited. Harlow, UK.

Napitupulu, Darmawan, Kadar, J. Abdel, & Jati, R. Kartika. (2017). Validity testing of technology acceptance model based on factor analysis approach. *Indonesian Journal of Electrical Engineering and Computer Science*, *5*(3), 697–704.

Nisar, Tahir M., & Prabhakar, Guru. (2017). What factors determine e-satisfaction and consumer spending in e-commerce retailing? *Journal of Retailing and Consumer Services*, *39*, 135–144.

Parasuraman, Ananthanarayanan, Zeithaml, Valarie A., & Malhotra, Arvind. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, *7*(3), 213–233.

Rahma, Asya Zahratur, & Syah, Tantri Yanuar Rahmat. (2023). The Relationship Between Service Quality, Patient Satisfaction, Behavioral Intentions And Prices In Outpatient Healthcare In The Hospital Industry. *Jurnal Ekonomi*, *12*(02), 232–242.

Rodríguez, Pablo Gutiérrez, Villarreal, Ricardo, Valiño, Pedro Cuesta, & Blozis, Shelley. (2020). A PLS-SEM approach to understanding E-SQ, e-satisfaction and e-loyalty for fashion e-retailers in Spain. *Journal of Retailing and Consumer Services*, *57*, 102201.

Sarstedt, Marko, Hair Jr, Joseph F., Cheah, Jun Hwa, Becker, Jan Michael, & Ringle, Christian M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, *27*(3), 197–211.

Shatnawi, Tamather. (2019). Development of an integrated conceptual framework for electronic hedonic service quality (e-HSQ): An exploratory study. *Journal of Internet Commerce*, *18*(4), 395–427.

Theodosiou, Marios, Katsikea, Evangelia, Samiee, Saeed, & Makri, Katerina. (2019). A comparison of formative versus reflective approaches for the measurement of electronic service quality. *Journal of Interactive Marketing*, *47*(1), 53–67.