Analysis of e-Service Quality and e-Trust on e-Loyalty with e-Satisfaction as an Intervening Variable in The Government e-Catalogue

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ABSTRACT

One of the ways utilized in selecting a Provider of Goods/services in Government Procurement is electronic purchasing (e-Purchasing) through an e-Catalogue. This study intends to investigate the influence of e-service quality and e-trust on e-loyalty through e-satisfaction of e-Catalogue users in all Ministries/Institutions/Regional Apparatuses in Indonesia. Sampling was carried out on 380 respondents who were procurement participants who had transacted in the government e-Catalogue with a minimum of 2 (two) transactions. Analysis of research data was done using Structural Equation Model (SEM) with SmartPLS version 3.3.3 application. Based on the findings of hypothesis testing, it is found that e-service quality has a positive but not significant effect on e-loyalty. E-service quality and e-trust have a positive and significant effect on e-satisfaction. E-trust and e-satisfaction have a positive and significant effect on e-loyalty. E-satisfaction can mediate service quality and e-trust in e-loyalty. The theoretical implications of the results of this study are also valuable for Government Agencies. They would build e-Catalogue applications by paying attention to the level of e-service quality to establish e-trust, e-satisfaction, and e-loyalty when transacting through e-Catalogue.

Keywords: e-Loyalty, e-Service Quality, e-Satisfaction, e-Trust.

I. INTRODUCTION

Internet-based information technology has been widely adopted by various entities, including individuals, organizations, and government agencies. The use of information technology in government agencies (e-government) attempts to increase government administration’s efficiency, effectiveness, openness, and accountability.

E-Government is a term that refers to a system that the government uses to service and inform its citizens, including business activities and other government-related topics (Endang, 2019). The government delivers e-Government services by providing a government website dedicated to improving e-service quality, making information and services more accessible to a wide audience. The National Public Procurement Agency (NPPA) has established an electronic information system for conducting government procurement of goods/services by creating an application site in an e-commerce platform called the Electronic Catalogue (e-Catalogue). E-commerce is a cutting-edge commercial practice that may be defined as electronically purchasing or selling any type of products or services via the internet (Ingaldi & Ulewicz, 2018).

According to Article 38 paragraph (1) of Presidential Regulation No. 16 of 2018 and its revisions, the procedures for selecting a provider of goods, construction works, or other services include e-purchasing, direct procurement, direct appointment, quick tender, and tender. E-Purchasing is a means of procuring products and services using the e-Catalogue system. It is the initial option used by Ministries, Institutions, and Regional Apparatuses before making purchases via other procuring goods and services. The e-Catalogue objective is to easily, quickly, transparently, and electronically document products and services required by Ministries/Institutions/Regional Apparatuses. Transactions on the e-Catalogue can only be made by individuals authorized by the Minister/Head of Institution/Head of Regions, referred to as Commitment Making Officers and Procurement Officers. Hence, Commitment Making Officers and Procurement Officers are considered consumers in this study on the e-Catalogue of the Federal Government.

According to data from the 2015-2020 Government Procurement, several things were discovered regarding e-loyalty of Government e-Catalogue Users, including (1) a decrease in the total value of procurement transactions via the e-Catalogue application in 2020, which was Rp32.44 trillion, a decrease of 47% from 2019, (2) the appearance of 686 cases in e-Catalogue transactions, and (3) supreme audit findings. This demonstrates that e-loyalty to the e-Catalogue application has dwindled during the last two years.

According to the results of the Pre-Survey of 30 (thirty) participants who became the object of research, the primary factors affecting e-loyalty in the e-Catalogue are e-service quality, e-trust, and e-satisfaction.

Loyalty is critical since loyal users are the barometer and...
determinant of a business’s success. If businesses cease to provide great experiences for their customers, their loyalty will lapse, and they will not return (Syafarudin, 2021). Customer loyalty refers to an individual who makes recurrent purchases, purchases whole product lines, recommends products to others, and demonstrates resistance to the attraction of competitors’ offerings (Griffin, 2005). Loyalty is referred to as e-loyalty in the perspective of e-commerce. E-loyalty is the desired attitude among customers in the electronic commerce sector that affects repurchase behavior (Anderson & Srinivasan, 2003).

Service quality refers to a website’s ability to assist in shopping, purchasing, and delivering goods and services efficiently and effectively (Parasuraman et al., 2005). Service quality is referred to as e-service quality in e-commerce, referring to the assessment and measurement of the superiority and quality of electronic service delivery in the online business (Santos, 2003).

Trust is the notion that the service provider’s pronouncement is trustworthy and that the service provider will adhere to its obligations in transactions (Haron et al., 2020). Trust is established when an individual has faith in exchange actions with trustworthy and ethical partners (Morgan & Hunt, 1994). Trust is known as e-trust in the perspective of e-commerce. E-trust is a type of trust that consumers hold to make purchases via the internet (Susanto, 2018).

Customer satisfaction is a post-purchase reaction that occurs when pre-purchase expectations are compared to the performance realized (Oliver, 2010). Customer satisfaction is considered e-satisfaction in the perspective of e-commerce. E-satisfaction arises when a service meets or surpass a buyer's expectations, precisely the level of satisfaction service users express when comparing their purchase experience and perceived expectations to subsequent occurrences (Ahmad et al., 2017).

Based on these issues, this study is constrained by exogenous variables, specifically e-service quality and e-trust. E-service quality consists of 4 components: efficiency, system availability, fulfilment and privacy (Dalbehera, 2020). E-Trust comprises three components: competence, integrity, and benevolence (Oliveira et al., 2017). Additionally, this research is also constrained by endogenous variables, specifically e-loyalty, which has three dimensions: favored attitude, repeated purchases, and positive word of mouth (Guluwita & Sapukotanage, 2020). Additionally, the intervening variable of e-satisfaction considers five factors: convenience, merchandising, site design, security, and service availability (Ranjbbarian et al., 2012).

II. LITERATURE REVIEW

A. Correlation between e-Service Quality and e-Loyalty of e-Catalogue Users

A variety of factors influences customer loyalty. One of these factors is the quality of the service offered. Service quality positively and significantly affects loyalty (Sasono et al., 2021) and (Guluwita & Sapukotanage, 2020). This positive effect implies that improved service quality will increase consumer loyalty (Raza et al., 2020) and (Khan et al., 2019). The following hypothesis is formulated in light of these considerations:

Hypothesis 1: There is a positive and significant effect of e-service quality on e-loyalty.

B. Correlation between e-Trust and e-Loyalty of e-Catalogue Users

According to studies, trust positively and significantly affects loyalty (Hanera, 2020). Additionally, other study measures the role of privacy perception on trust. Privacy is a primary reason for e-commerce transactions to protect personal and financial data, affecting website users’ loyalty (Al-dweeri et al., 2019). The following hypothesis is formulated in light of these considerations:

Hypothesis 2: There is a positive and significant effect of e-trust on e-loyalty.

C. Correlation between e-Service Quality and e-Satisfaction of e-Catalogue User

According to (Al-khayyal et al., 2020), service quality affects user satisfaction in a positive manner. Although one disappointing transaction is probable, this research shows that the overall quality of service can be viewed positively. These results correspond to (Hanera, 2020) studies indicating that trust affects loyalty in a positive and statistically significant way. The following hypothesis is formulated in light of these considerations:

Hypothesis 3: There is a positive and significant effect of e-service quality on e-satisfaction.

D. Correlation between e-Trust and e-Satisfaction of e-Catalogue User

According to research by (Rintasari & Farida, 2018), the greater the degree of trust, the greater the degree of user satisfaction. The following hypothesis is formulated in light of these considerations:

Hypothesis 4: There is a positive and significant effect of e-trust on e-satisfaction.

E. Correlation between User e-Satisfaction and e-Loyalty of e-Catalogue User

According to (Guluwita & Sapukotanage, 2020), e-satisfaction affects e-loyalty in a positive and significant manner. Then, another study discovered that e-satisfaction and e-loyalty, both in offline and online stores, positively correlated (Riza & Sutopo, 2017). Additionally, e-satisfaction affects e-loyalty in positive and significant way (Rintasari & Farida, 2018). The following hypothesis is formulated in light of these considerations:

Hypothesis 5: There is a positive and significant effect of e-satisfaction on e-loyalty.
F. Correlation between e-Service Quality and e-Loyalty based on e-Satisfaction of e-Catalogue User

According to a study by (Melinda, 2017), e-service quality affects e-loyalty via e-satisfaction. Management is expected to offer the best service possible to its clients to foster loyalty through customer satisfaction and a great service experience. The following hypothesis is formulated in light of these considerations:

**Hypothesis 6:** There is a positive and significant effect of e-service quality on e-loyalty based on e-satisfaction.

G. Correlation between e-Trust and e-Loyalty based on e-Satisfaction of e-Catalogue User

According to research by (Rintasari & Farida, 2018), e-satisfaction affects e-trust and e-loyalty. To be trustworthy, management must provide timely deliverables. Along with a great trust, user satisfaction will affect loyalty. This is consistent with the research findings (Sativa & Astuti, 2016). The following hypothesis is formulated in light of these considerations:

**Hypothesis 7:** There is a positive and significant effect of e-trust on e-loyalty based on e-satisfaction.

Based on the theories and prior research discussed previously, it can be determined that the conceptual model that relates the variables is as follows:

![Research Conceptual Model](image)

**III. METHODS**

This is a descriptive quantitative study employing a causal method to determine the causes of one or more problems (Sekaran & Bougie, 2013). The population studied was 37,905 users of the National Electronic Catalogue (Commitment Making Officers and Procurement Officers) from Ministries/Institutions/Regional Apparatuses throughout Indonesia who have transacted at least twice through the e-Catalogue application, are actively registered and have a user id. This study employs both probability and purposive sampling techniques.

The model utilized in this study as a data analysis approach is the SmartPLS application version 3.3.3, which includes the following:

- **A. Outer Model Test**
  1) **Validity Test**
  
  Validity testing is applied to determine the construct validity and discriminant validity in this research model. Construct validity refers to how well the results of measurement match the theories that were used to describe the construct. Construct validity comprises convergent and discriminant validity. Outer loading > 0.70 and Average Variance Extracted (AVE) > 0.50 are utilized as guidelines for convergent validity (Chin, 1998). Discriminant validity is appropriate if the AVE root of each component is greater than the correlation between the constructs in the model (Fornell & Larcker, 1981).

  2) **Reliability Test**
  
  A reliability test is done to determine the instrument's consistency. The term "reliability" refers to a measuring device's consistency, accuracy, and precision (Abdillah & Hartono, 2015). Crohbach’s Alpha and Composite Reliability are 2 techniques for determining reliability. The value of Composite Reliability and Cronbach Alpha > 0.7 (Ghozali & Latan, 2015).

- **B. Inner Model Test**
  
  When the path coefficient is close to 1, the independent variable's influence on the dependent variable becomes stronger (Ghozali & Latan, 2015). Path coefficient of 0.67 is strong, 0.33 is moderate, and 0.19 is weak (Chin, 1998). Then, if predictive relevance (Q2) > 0, it is considered good. The goodness of fit model with SRMR criteria fulfill the cut-off value ≤ 0.10 (Ghozali, 2011).

- **C. Hypothesis Testing**
  
  T-statistics > 1.96 is applied with α = 0.05 (Hartono, 2011).

**IV. RESULTS**

The respondents in this survey are explained as follows:

- **A. Age Characteristics**
  
  Users are most likely between 37 and 46 years old, representing 209 respondents or 55%. This demonstrates that most user responses at that age are extremely intelligent and capable of using the e-Catalogue application’s functionalities and possess mature, responsible thoughts.

- **B. Job Characteristics**
  
  Commitment Making Officers hold the most positions, with 161 respondents or 42.37%. This demonstrates that most e-Catalogue application users comprehend and possess the authority to conduct transactions on the e-Catalogue.

- **C. Characteristics of Transaction Frequency on e-Catalogue**
  
  The highest transaction frequency in the e-Catalogue is 6 to 10 times, as expressed by 196 respondents (51.57%). This indicates that respondents who transacted were already familiar with the e-Catalogue website/application. The majority of respondents reported being satisfied with their experience transacting in the e-Catalogue, having done more than twice.
Additionally, descriptive analysis was used to ascertain respondents’ perceptions, which included the following:

**D. Results of e-Service Quality Variable Analysis**

The overall service quality variable has an average value of 3.89. This demonstrates the e-service quality of e-Catalogue. However, because the ESQ8 indicator (quickly answered questions) has the lowest average score of 3.45, it can be used to assess service quality by immediately replying to questions given by e-Catalogue users.

**E. Results of e-Trust Variable Analysis**

The e-trust variable as a whole has an average value of 4.02. This demonstrates that e-Catalogue users put a high trust in the system. However, because the TRS4 indicator (affordable price) has the lowest value of 3.83, comparing prices outside the e-Catalogue site is necessary.

**F. Results of e-Satisfaction Variable Analysis**

The total e-satisfaction variable has a mean value of 3.88. This demonstrates that e-Catalogue users are satisfied with the e-Catalogue. However, the SAT3 (Products as needed) and SAT6 (Quickly presented information) indicators have the lowest score of 3.71, indicating that e-Catalogue users continue to believe that the e-Catalogue’s product availability, both in terms of type and quantity, does not meet their demands. Additionally, the availability of existing information is insufficient to provide the most recent/up-to-date information. Thus, it is critical to evaluate and improve this to increase the diversity of products presented in the e-Catalogue and keep the information displayed updated.

**G. Results of e-Loyalty Variable Analysis**

The loyalty variable as a whole has an average value of 4.05. This demonstrates that e-Catalogue users have good loyalty, as demonstrated by their preference for e-Catalogue transactions as their primary supplier selection method. The LOY3 (repurchase) indicator, on the other hand, has the lowest score of 3.67. This can be used as an evaluation tool for developing strategies and improvements to increase government e-Catalogue users’ loyalty.

Moreover, the outer model test results are obtained as follow:

**H. Validity Test**

1) **Convergent Validity**

The data processing results suggest that all variable indicators (e-service quality, e-trust, e-satisfaction, and e-loyalty) have a loading factor > 0.70, indicating a high level of validity. Additionally, the analysis is continued with the Average Variance Extracted (AVE) test, which is valid because all values > 0.5.

**TABLE I: AVERAGE VARIANCE EXTRACTED (AVE) TEST RESULT**

<table>
<thead>
<tr>
<th>Variable</th>
<th>AVE Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>0.601</td>
</tr>
<tr>
<td>E-Trust</td>
<td>0.695</td>
</tr>
<tr>
<td>E-Satisfaction</td>
<td>0.666</td>
</tr>
<tr>
<td>E-Loyalty</td>
<td>0.718</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

2) **Discriminant Validity**

The standard value for cross-loading is greater than 0.70 in a single variable. The variable is declared valid if the cross-loading value in the variable is greatest among other variables (Abdillah & Hartono, 2015). Additionally, discriminant validity can be assessed using alternative ways like comparing the AVE roots in each construct to the correlation between the constructs and the other constructs in the research model.

According to the research findings, the cross-loading value for each construct is more than 0.70, and the AVE root for each construct is greater than the correlation between the constructs and the other constructs. As a result, this model is deemed to have good discriminant validity.

**TABLE II: FORNELL LARCKER CRITERION TEST RESULTS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>E-Quality Service</th>
<th>E-Trust</th>
<th>E-Satisfaction</th>
<th>E-Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>0.775</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Trust</td>
<td>0.663</td>
<td>0.834</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Satisfaction</td>
<td>0.769</td>
<td>0.813</td>
<td>0.816</td>
<td></td>
</tr>
<tr>
<td>E-Loyalty</td>
<td>0.576</td>
<td>0.645</td>
<td>0.676</td>
<td>0.847</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

**I. Reliability Test**

If Cronbach’s Alpha and Composite Reliability values are greater than 0.70, it can be used to determine the construct data’s reliability. The study’s findings indicated that the construct was highly reliable or that the questionnaire employed as a tool was highly reliable and consistent.

**TABLE III: RELIABILITY TEST**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>0.926</td>
<td>0.938</td>
</tr>
<tr>
<td>E-Trust</td>
<td>0.926</td>
<td>0.941</td>
</tr>
<tr>
<td>E-Satisfaction</td>
<td>0.944</td>
<td>0.952</td>
</tr>
<tr>
<td>E-Loyalty</td>
<td>0.901</td>
<td>0.927</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

The following findings are obtained when the inner model is tested:

The inner model was computed using the R2 value and found to be (0.67), (0.33), and (0.19), indicating that the model is strong, moderate, and weak, respectively (Chin, 1998). The study’s findings indicate that e-satisfaction is strongly affected by e-service quality and e-trust variables by 77%. In contrast, e-loyalty is moderately affected by e-service quality, e-trust, and e-satisfaction variables by 49%. The remaining is determined by variables not considered in the research model.

**TABLE IV: R-SQUARE TEST RESULTS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Satisfaction</td>
<td>0.770</td>
</tr>
<tr>
<td>E-Loyalty</td>
<td>0.491</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

Then, the f-square (F) coefficient of determination is determined. The f-square model value determines the endogenous latent variable’s effect size on the exogenous latent variable.
TABLE V: F-Square Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>E-Satisfaction</th>
<th>E-Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>0.469</td>
<td>Strong 0.014</td>
</tr>
<tr>
<td>E-Trust</td>
<td>0.773</td>
<td>Strong 0.052</td>
</tr>
<tr>
<td>E-Satisfaction</td>
<td>0.055</td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

Moreover, the predictive relevance test (Q^2) was performed; if Q^2 > 0, the model is considered good.

TABLE VI: Q^2 Predictive Relevance Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>SSQ</th>
<th>SSE</th>
<th>Q^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>3800.000</td>
<td>3800.000</td>
<td>0.279</td>
</tr>
<tr>
<td>E-Trust</td>
<td>2660.000</td>
<td>2660.000</td>
<td>0.347</td>
</tr>
<tr>
<td>E-Satisfaction</td>
<td>1872.841</td>
<td>1244.752</td>
<td>0.507</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

Furthermore, the goodness of fit test is considered good if the SRMR ≤ 0.10.

TABLE VII: Goodness of Fit (GoF) Value

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Saturated Model</th>
<th>Estimated Model</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.059</td>
<td>0.059</td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

According to the findings of the hypothesis testing:

TABLE VIII: Hypothesis Testing Results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path Coefficient</th>
<th>T Statistic</th>
<th>P-Value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>0.132</td>
<td>1.387</td>
<td>0.166</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2</td>
<td>0.279</td>
<td>3.683</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3</td>
<td>0.425</td>
<td>8.258</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4</td>
<td>0.545</td>
<td>11.407</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5</td>
<td>0.347</td>
<td>3.316</td>
<td>0.001</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6</td>
<td>0.418</td>
<td>2.990</td>
<td>0.003</td>
<td>Accepted</td>
</tr>
<tr>
<td>H7</td>
<td>0.189</td>
<td>3.287</td>
<td>0.001</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Processed primary data (2021).

V. DISCUSSION

A. The Effect of e-Service Quality on e-Loyalty

The first hypothesis examines whether e-service quality significantly and positively affects e-loyalty. The test of this hypothesis yielded a t-statistic of 1.387 and a p-value of 0.166. As can be observed, the t-statistic < 1.96, and the p-value > 0.05, indicating that H1 is rejected. This demonstrates that e-service quality shows a positive but not statistically significant effect on e-loyalty, with an effect size of only 13.2%. According to the previous descriptive analysis results, the relation between e-service quality and e-loyalty is insignificant since e-Catalogue users believe the e-Catalogue system is not yet fully capable of responding quickly and precisely to questions, causing users to be hesitant to make repeat purchases on the e-Catalogue. These findings are consistent with research by (Gotama & Indarwati, 2019) and (Della Prisanti, 2017).

B. The effect of e-Trust on e-Loyalty

The second hypothesis examines if e-trust significantly and positively affects e-loyalty. The path coefficient obtained is 0.279 due to parameter estimation and hypothesis testing. This indicates that the trust variable possess a 27.9% effect on an e-loyalty variable. Hypothesis testing yielded a t-statistic of 3.683 and a p-value of 0.000. As can be observed, the t-statistical value > 1.96, and the p-value < 0.05, indicating that H2 is accepted. This demonstrates that e-trust affects e-loyalty in a significant and positive manner. These findings are consistent with research by (Hanera, 2020), (Al-dweeri et al., 2017) and (Zhu et al., 2016).

C. The Effect of e-Service Quality on e-Satisfaction

The third hypothesis tests whether e-service quality significantly and positively affects e-satisfaction. The route coefficient obtained is 0.425 due to parameter estimation and hypothesis testing. This suggests that e-service quality variable affects e-satisfaction variable by 42.5%. Hypothesis testing yielded a t-statistic of 8.258 and a p-value of 0.000. As can be observed, the t-statistical value > 1.96 and the p-value < 0.05, suggesting that H3 is accepted. This demonstrates that e-service quality affects e-satisfaction in a significant and positive manner. These results support research conducted by (Mubarok & Kurriwati, 2021), (Hanera, 2020) and (Gotama & Indarwati, 2019).

D. The effect of e-Trust on e-Satisfaction

The fourth hypothesis examines whether e-trust affects e-satisfaction in a positive and significant manner. The path coefficient found is 0.545 due to parameter estimation and hypothesis testing. This suggests that the e-trust variable has a 54.5% effect on e-satisfaction variable. Hypothesis testing yielded a t-statistic of 11.407 and a p-value of 0.000. As can be observed, the t-statistical value > 1.96 and the p-value < 0.05, indicating that H4 is accepted. This demonstrates that e-trust affect e-satisfaction in a significant and positive manner. These findings confirm studies performed by (Al-dweeri et al., 2019), (Melinda, 2017) and (Sativa & Astuti, 2016).

E. The Effect of e-Satisfaction on e-Loyalty

The fifth hypothesis examines whether e-satisfaction affects e-loyalty in positive and significant manner. The path coefficient found is 0.347 due to parameter estimation and hypothesis testing. This suggests that the e-satisfaction variable has a 34.7% effect on the e-loyalty variable. Hypothesis testing yielded a t-statistic of 3.316 and a p-value of 0.001. As can be observed, the t-statistical value > 1.96, and the p-value < 0.05, indicating that H5 is accepted. This demonstrates that e-satisfaction has a significant positive effect on e-loyalty. These findings confirm other studies by (Guluwita & Sapukotanage, 2020), (Rodriguez et al., 2020) and (Riza & Sutopo, 2017).

F. The Effect of e-Service Quality on e-Loyalty based on e-Satisfaction as a Mediating Variable

The sixth hypothesis tests whether e-service quality positively and significantly affects customer e-loyalty via e-satisfaction. The path coefficient obtained is 0.189 due to parameter estimation and hypothesis testing. This suggests that the e-service quality variable affects the e-loyalty variable by 18.9% through e-satisfaction. Hypothesis testing yielded a t-statistic of 3.287 and a p-value of 0.001. As can be observed, the t-statistical value > 1.96 and the p-value < 0.05 indicate that H6 is accepted. This demonstrates that e-satisfaction as mediating variable shows a significant and
positive effect on the correlation between e-service quality and e-loyalty. These findings are consistent with research by (Gotama & Indrarwati, 2019), (Santika & Pramudana, 2018) and (Melinda, 2017).

**G. The effect of e-Trust on e-Loyalty based on e-Satisfaction as a Mediating Variable**

The seventh hypothesis examines whether e-trust, as measured by e-satisfaction, shows a positive and significant effect on e-loyalty. The path coefficient obtained is 0.148 due to parameter estimation and hypothesis testing. This suggests that the e-trust variable exhibits a 14.8% effect on the e-loyalty variable. Hypothesis testing yielded a t-statistic of 2.990 and a p-value of 0.003. As can be observed, the t-statistical value > 1.96 and the p-value < 0.05 indicate that H7 is accepted. This demonstrates that e-satisfaction performs as a partial mediator between e-trust and e-loyalty. These results support research by (Rintasari & Farida, 2018), (Al-dweeri et al., 2017) and (Zhu et al., 2016).

**VI. CONCLUSION**

According to the findings and discussion, the following conclusions can be drawn:

1. E-service quality shows a positive but not significant effect on e-loyalty.
2. E-trust positively and significantly affects e-loyalty.
3. E-service quality positively and significantly affects e-satisfaction.
4. E-trust positively and significantly affects e-satisfaction.
5. E-satisfaction positively and significantly affects e-loyalty.
6. E-service quality positively and significantly affects e-loyalty through e-satisfaction.
7. E-trust positively and significantly affects e-loyalty through e-satisfaction.

**VII. SUGGESTION**

**A. Theoretical Suggestions**

The researcher recommends to the subsequent researcher on further research in the following areas:

1. The R-square values for e-satisfaction and e-loyalty are 0.770 and 0.491, respectively, based on model test results incorporating e-service quality, e-trust, and e-satisfaction. Future researchers can re-examine the model developed in this study by adding additional variables, namely perceived ease of use, perceived functionality, perceived risk, commitment, switching barrier, electronic word of mouth (E-WOM), and corporate image.
2. The subsequent researcher may use a qualitative strategy in this study, employing interviews as a data collection technique, to elicit more comprehensive responses from respondents and gather more detailed information about e-loyalty.
3. The subsequent research may consider examining user satisfaction with the Government e-Catalogue and its implications for companies (vendors).

**B. Practical Suggestions**

According to the study’s findings, the researchers recommend that the National Public Procurement Agency (NPPA), as manager of the National e-Catalogue, pay close attention to the following factors affecting customer loyalty:

1. NPPA need to improve the service quality on the Government e-Catalogue by addressing issues that arise when users transact in the e-Catalogue, such as clogged sites, pages that take too long to load, an inefficient question-answer feature, and others. This can be accomplished by performing routine system maintenance, assessing and enhancing the standard operating procedures (SOP) for questions and answers, shortening the time required to resolve complaints, and hiring the best IT specialists.
2. It is recommended that NPPA earn the e-trust of e-Catalogue users by safeguarding user anonymity and cooperating with vendors who practice online transaction integrity. NPPA must ensure product availability and expand the range of product variations displayed on the e-Catalogue to meet consumers’ demands and expectations.
3. NPPA must increase user satisfaction with e-Catalogue services in various ways, one of which is by responding to and managing complaints professionally and effectively according to the SNI ISO 10002:2009 standard.
4. NPPA is expected to increase the e-loyalty of e-Catalogue users through its marketing strategies, both from e-service quality, e-trust, and even other aspects such as product quality, product diversity, and product price. Thus, e-Catalogue users will always make the e-Catalogue the first choice in conducting Procurement of Goods/Services, continue to make repeat purchases through the e-Catalogue Site, and recommend positive experiences of transacting in the e-Catalogue to others.

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DOI: http://dx.doi.org/10.24018/ejbmr.2022.7.2.1377