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# THE INFLUENCE OF ELECTRONIC SERVICE QUALITY, TRANSACTION COSTS AND EXPERIENCE VALUE ON ONLINE SATISFACTION AND LOYALTY OF HALODOC APPLICATION USERS

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## Abstract

Telemedicine applications are very necessary in efforts to increase the effectiveness of health services to the community. The telemedicine industry has a great opportunity to create market share by properly understanding the important aspects of customer satisfaction. This research aims to identify the factors that most influence customer loyalty which is mediated by customer satisfaction with the halodoc application as a telemedicine application. This type of research is quantitative research using a questionnaire via Google Form as a primary data collection instrument. Secondary data is used in this research as material for developing hypotheses. 200 questionnaire data were analyzed with partial least structural equation modeling (PLS-SEM) using Smart_PLS to validate the model and test hypotheses. The research results show that e-service quality is one of the most influential factors in creating loyalty among halodoc application users, both directly and indirectly, mediated through customer satisfaction. The experience value and transaction cost variables have a positive influence in creating customer satisfaction and loyalty when using the halodoc application. Although this research has several limitations, it is hoped that the research can provide some practical implications for halodoc as a telemedicine company to design application services that produce higher user satisfaction and loyalty.

***Keywords**:* Electronic service quality, Transaction costs, Experience value, Satisfaction, Loyalty

## INTRODUCTION

Telemedicine applications are very popular applications today. Telemedicine health applications are very necessary in efforts to increase the effectiveness of health services. However, there is still very little research regarding the quality of services provided by health applications on user satisfaction and loyalty, especially in Indonesia. Meanwhile, research in the United States shows research results regarding the very fast turn-over rate of health application users. 45.7% of health app users in the United States stopped using the app for reasons such as high data entry burden, costs involved, and loss of interest.(Robbins, Krebs, Jagannathan, Jean-Louis, & Duncan, 2017). Potential losses of more than 57,000 US Dollars per month could occur to health service applicator companies due to deletion(Fransiska & Bernardo, 2021). Thus, it is very important to know the level of customer satisfaction and loyalty by studying the factors that influence customer satisfaction and loyalty in health applications.

Previous research conducted in Ghana which examined the relationship between service quality and customer satisfaction and loyalty in using health applications had limitations, namely that the research was only conducted on women in rural areas so it did not represent views regarding the desired service quality in general due to cultural

differences in each region and country. . Suggestions from previous research are that future study development is expected to take into account other cultural contexts. Cross-country research analysis can provide strong findings with various implications that can be useful for countries with similar characteristics(Oppong, Hinson, Adeola, Muritala, & Kosiba, 2021).

Halodoc is one of the most popular telemedicine applications currently and has many users. Halodoc is an application founded by PT Media Dokter Investama since 2016 as a health application created to help the general public gain access to health services. The number of Halodoc health application users in Indonesia is growing very quickly because it is supported by the third largest smartphone usage in Asia Pacific. Meanwhile, the number of doctors in Indonesia is still insufficient, so telemedicine health applications are urgently needed(Permana, Suardika, Sujana, & Yuesti, 2019). Silalahi, Hartono, and Tumpak(Silalahi, Hartono, & Tumpak, 2018)in his research regarding the profile and preferences of users of doctor consultation applications in Indonesia, it was found that Halodoc was the health application with the largest number of users, namely around 68.5%. Apart from that, the research found a gap phenomenon between customer satisfaction level expectations and customer satisfaction levels. Therefore, this research will also help Halodoc find out important factors that can increase customer satisfaction and loyalty based on the variables of electronic service quality, transaction costs and experience value.

## LITERATURE REVIEW

### Quality of electronic services

Researchers in marketing and other fields often use service quality variables as research constructs(Lu, Zhang, & Wang, 2009). In the context of traditional services, service quality is an abstractive assessment related to service excellence that is higher than the specific attributes of a service(Zeithaml, Parasuraman, & Malhotra, 2002). Meanwhile, Oliver(2010), says service quality is a specific assessment that leads to an evaluation of consumer satisfaction. In the theory and research of Parasuraman et al.(1988)There are ten dimensions to measure service quality that can be used in any service model. However, in Simic's research(2012)Service dimensions are simplified into five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Meanwhile, electronic service quality (e-service quality) is defined as consumers' evaluation and assessment of the quality of e-services on the internet market(Carlson & O'Cass, 2010).

E-SEVQUAL (electronic service quality) is a branch of SEVQUAL which is used to measure online-based services with various new dimensions such as efficiency, system capability, fulfillment and privacy(Parasuraman, Zeithaml, & Malhotra, 2005). In the research of Zeithaml et, al.(Zeithaml et al., 2002), the quality of online website services is measured by the dimensions of information availability, ease of use, privacy/security, graphic style, and reliability. Meanwhile, Herrington and Scott(Herington & Weaven, 2009)His research shows that 4 dimensions of e-service quality, namely personal needs, site organization, user-friendliness and efficiency, are predictor variables for customer satisfaction in the e-retailing context. Research in measuring e-services is more in the context of website research, online shopping, and social commerce. Meanwhile, research on e-service quality in the context of telemedicine applications is still rare. For this reason, the research will adopt several dimensions of e-service quality to be applied in the context of the Halodoc telemedicine application. The dimensions used include ease of use, graphic style, reliability and responsiveness. Thus, it is hypothesized that:

**H1**: Halodoc application user satisfaction will be positively influenced by the quality of electronic services

**Transaction Fees**

Ronald Coase(2012)said transaction costs are costs that come from providing goods or services through the market. Meanwhile, Williamson(2012)create a transaction cost analysis framework with the aim of measuring the relationship between assumptions of bounded rationality and opportunism with three transaction dimensions, namely asset specificity, uncertainty and frequency.

Additionally, Williamson(2012)said that transaction costs are included in production costs which include intra-company managerial costs and market transaction costs. Transactions are carried out when goods and services are delivered via technology. In the context of online shopping, transaction costs include market transaction costs spent on searching, bidding and after-sales activities. The aim is to measure the level of efficiency of interaction between buyers and sellers during a certain period. Meanwhile, managerial transaction costs are the costs of running a shop which function as a measure of process efficiency in market organizations.

In the research of Devaraj et al.(2002), the TCA model is used to research online shopping customer satisfaction. The results show that TCA dominates the impact on customer satisfaction. The dimensions used are the Time, Ease and Price Saving dimensions. In line with these results, the TCA model also has the same positive influence on online game research developed by Yang et al.(2009)with the dimensions of Price Saving and Time Efficiency. Thus, this study also has the same perception as previous research. So it is hypothesized that:

**H2**: Halodoc application user satisfaction will be positively influenced by transaction fees

**Value of Experience**

The result of sensory, emotional, and cognitive stimulation is referred to as experiential value. Experience value will be able to satisfy consumers' curiosity regarding the orientation of the product or brand information they will purchase and ultimately help consumers in purchasing decisions(Won Jeong, Fiore, Niehm, & Lorenz, 2009). Experience value also comes from the use or interaction between the consumer and the product or service(H.-C. Wu, Li, & Lee, 2018)

Hirschman and Holbrook(Holbrook & Hirschman, 2012)in his research stated that shopping is a pleasant job or activity for consumers. Utilitarian value involves shopping efficiency to make appropriate product choices based on a logical assessment of product information. In contrast to hedonic value, consumers view shopping as an adventure. Hirschman and Holbrook(Holbrook & Hirschman, 2012)considers these forms of pleasure as consumption experiences (Hedonic), so that hedonic value is different from utilitarian value.

In previous literature studies, utilitarian value and hedonic value are related, namely with consumption and shopping experience as variables(Park & Ha, 2016). Restaurant service is a conventional service which shows that environmental factors and interactions indirectly influence consumers through experience value(C.H.-J. Wu & Liang, 2009). Meanwhile, measuring the integration of technology acceptance model (TAM), transaction cost analysis (TCA), and service quality (SEV_Q) in the context of online shopping shows that TAM with the experience value dimension has a significant effect on online satisfaction.(Devaraj et al., 2002). In the context of online apps, Yang et,al.(Yang et al., 2009)integrating experiential value (EXP_V), transaction cost analysis (TCA), and service quality (SEV_Q) models to measure variables that influence online satisfaction. The results show that these three variables have a significant effect on online satisfaction. Similar to

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previous research, this research uses EXP_V as one of the variables used to measure satisfaction and loyalty of halodoc application users. Thus, it is hypothesized that:
**H3**:Halodoc application user satisfaction will be positively influenced by the experience value

**Online Satisfaction and Loyalty**

In recent marketing research, assessments of marketing performance and company productivity use quality, satisfaction and customer loyalty as measurement tools(Simanjuntak, Daryanto, & Rusolono, 2016). Customer satisfaction has been a common subject of research in much of the literature because of its potential to influence consumer retention and behavioral intentions(Suhartanto & Triyuni, 2016).. Similarly, in the online shopping satisfaction model, satisfaction is an important construct because it influences consumer motivation to continue using online shop channels*(Suhartanto, Helmi Ali, Tan, Sjahroeddin, & Kusdibyo, 2019)*. Meanwhile, satisfaction with the product or service offered has been proven to be a determining factor in consumer loyalty(SUHARTANTO, FARHANI, & MUFLIH, 2018). And this relationship has been proven to be applicable in the context of e-commerce. The results of previous studies show that online customer loyalty in e-commerce channels results from customer satisfaction. The positive influence of online satisfaction on loyalty has been demonstrated in the context of e-commerce(Rodgers, Negash, & Suk, 2005). From a review of previous research, it can be assumed that high satisfaction with online mobile game applications will result in high online mobile game loyalty. Thus, in this research the hypothesis will be tested:
**H4**:User satisfaction will have a positive influence on loyalty in using the Halodoc application

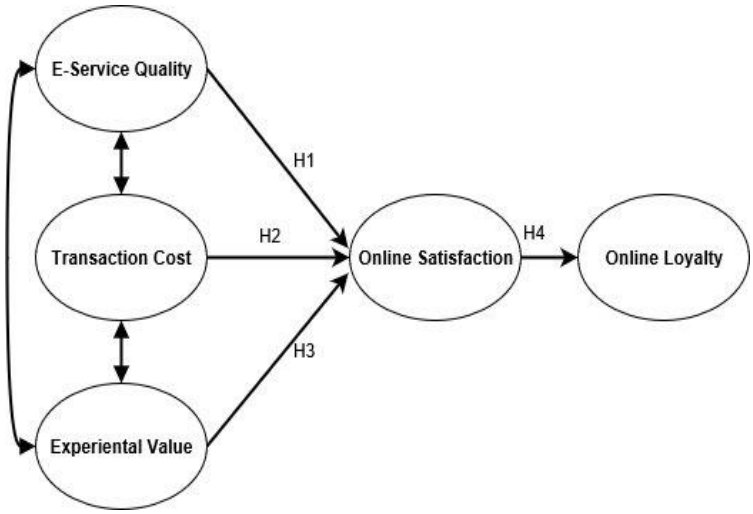


Figure 1. Research Model

## RESEARCH METHOD

This research was designed to test hypotheses according to a comprehensive literature review. Hypothesis testing is carried out by measuring several indicators in each variable. From previous literature, 13 indicators from 4 dimensions were obtained which were modified from research by Carlson & O'Cass (Carlson & O'Cass, 2010)To measure

e-service quality, 7 indicators were adopted from research by Yang et al., (2009) and Williamson et al.(Williamson & Ghani, 2012)to measure transaction costs, as well as 8 indicators adopted from Yang et al.(Yang et al., 2009)to measure experiential value. Meanwhile, to test the variables online satisfaction and online loyalty each adopts the same 3 indicators (Yang et al., 2009). All variable indicators are measured using a 5-point Likert scale from strongly disagree (1) to strongly agree (5) (Suhartanto, 2014). All indicators are validated from previous research and modified to be applied to the halodoc application service context.

Data collection was carried out using a random sampling technique, namely random selection of respondents through an online questionnaire survey. The online questionnaire survey was created using Google Form. Respondents in this study were users of the halodoc application. This research uses a descriptive and exploratory approach. A descriptive approach is used to measure the level of satisfaction with the loyalty of Halodoc application users. Meanwhile, an exploratory approach was used to determine the quality of electronic services, transaction costs and experience value in the halodoc application. Data processing uses partial least squares structural equation modeling (PLS-SEM) and SPSS software. PLS-SEM is used to test hypotheses, verify structural models, and measure path analysis on models (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). PLS-SEM is used by researchers to assess latent constructs with relatively small sample sizes, data non-normality, predictive accuracy, and correct model specifications. (Wong, 2013)..

## RESULT AND DISCUSSION

The characteristics of respondents in this study were dominated by men at 65.5%, while women were only 34.5%. Around 71% are aged 21-40 years, and only 29% are over 40 years old. Meanwhile, around 30% are students, 50% are private employees, 20% are civil servants. Responses to the intensity of use of the halodoc application are as follows: use when experiencing health symptoms (45%), doctor consultation (25.5%), make a doctor's appointment (15%), and purchase medicine (15%). The profile of respondents in this study is depicted in Table 1 below:

Table 1. Analysis of respondent descriptions

| Variable | Description | Frequency | % |
|---|---|---|---|
| **Gender** | Man | 131 | 65.5 |
| | Woman | 69 | 34.5 |
| **Age** | <20 | 0 | 0 |
| | 21-40 | 142 | 71 |
| | >40 | 58 | 29 |
| **Work** | Student | 60 | 30 |
| | Private employees | 100 | 50 |
| | Government employees | 40 | 20 |
| **The intended use** | Searching for information | 90 | 45 |
| | Doctor Consultation | 50 | 25 |
| | Doctor's Appointment | 40 | 20 |
| | Medicine Purchase | 20 | 10 |

Evaluation of model measurements and assessment of structural models are two approaches that can be carried out in PLS-SEM testing(Ali, Rasoolimanesh, Sarstedt,

Ringle, & Ryu, 2018). Reliability and validity tests on the constructs studied are the methods used in the measurement model. The standard value of the loadings indicator set to ensure the reliability indicator is 0.7. However, if the loading indicator value is more than 0.4 then the indicator is reliable and accepted (Joe F Hair, Sarstedt, Ringle, & Mena, 2012). And to determine internal consistency reliability, the composite reliability (CR) value must be greater than 0.7 (Joseph F Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). Meanwhile, convergent and discriminant validity testing are the methods used to test validity. In the convergent validity test, the average variance extracted (AVE) value must be greater than 0.5 (Joseph F Hair et al., 2017). And for discriminant validity testing, it is carried out using the heterotrait-monotrait test (HTMT) with a value that must be smaller than 0.9 (Henseler, Ringle, & Sarstedt, 2015). Thus, based on the criteria above, this research has fulfilled all the requirements in the model measurement test.

*Table 2. Loading, Composite Reliability, and AVE*

| **Construct /item (mean; standard deviation)** | **Loading*** | **CR** | **AVE** |
|---|---|---|---|
| Electronic Service Quality (3.8435;0.66002) | | 0.871 | 0.572 |
| Reliable application features | 0.788 | | |
| Application features according to needs | 0.723 | | |
| The app features are very informative | 0.756 | | |
| The application features are very responsive | 0.623 | | |
| Helpful information service features | 0.701 | | |
| Easy to use application | 0.723 | | |
| The application features are easy to understand | 0.645 | | |
| The text in the application is easy to read | 0.756 | | |
| Attractive graphic display | 0.723 | | |
| Modern graphic display | 0.712 | | |
| Advanced graphic resolution display | 0.715 | | |
| Transaction Fees (3.7693; 0.71946) | | 0.824 | 0.583 |
| The application login wait time is fast | 0.554 | | |
| Fast application running time | 0.567 | | |
| Quick application exit | 0.523 | | |
| Cheap application features | 0.434 | | |
| Interesting application features | 0.778 | | |
| Service price information is available in the application | 0.665 | | |
| Attractive service discounts | 0.521 | | |
| Experience Value (3.8756;0.81997) | | 0.941 | 0.645 |
| The app features are very helpful | 0.756 | | |
| The application features are very solution | 0.598 | | |
| The app features provide an experience | 0.656 | | |
| The application features are very interactive | 0.678 | | |
| Online Satisfaction (3.9250;0.81884) | | 0.912 | 0.805 |
| Satisfied with all the features of the halodoc application | 0.690 | | |
| Satisfied with the halodoc application service | 0.732 | | |
| Satisfied with the experience of using Halodoc | 0.745 | | |
| Online Loyalty (3.7067;0.94432) | | 0.932 | 0.817 |
| Recommend | 0.627 | | |

| | |
|---|---|
| Make it the main choice | 0.617 |
| Reusing applications | 0.681 |

*Table 3. Heterotrait-Monotrait Ratio Of Correlations (HTMT)*

| | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| (1) Quality of electronic services | 0.727 | | | | |
| (2) Experience value | 0.821 | 0.832 | | | |
| (3) Online loyalty | 0.707 | 0.789 | 0.834 | | |
| (4) Online satisfaction | 0.776 | 0.797 | 0.767 | 0.920 | |
| (5) Transaction fees | 0.762 | 0.687 | 0.563 | 0.767 | 0.732 |

Furthermore, to ensure the suitability of the model it is necessary to carry out a goodness of fit (GoF) assessment.(Tenenhaus, Vinzi, Chatelin, & Laura, 2005). Based on table 4, it is known that the GoF value in this study is 0.65, indicating that the GoF value is in the large category so that the model in this study has good quality.(Daryanto, de Ruyter, Wetzels, & Patterson, 2010). Apart from that, by carrying out model fit tests it is also possible to determine approximate model fit. Namely with the standard root mean square residual (SRMR) test with a cut-off value of 0.8 and a normed fit index (NFI) with a value above 0.9 as a condition for acceptance.(Joseph F Hair et al., 2017). In this study, the SRMR value was less than 0.8 and the NFI value was below 0.9, so only one criterion was met. However, the use of NFI is still rarely used in research(Henseler et al., 2015).

*Table 4. Goodness of Fit Index*

| **Variable** | **AVE** | $R^2$ |
|---|---|---|
| Electronic Service Quality | 0.572 | |
| Experience Value | 0.645 | |
| Transaction Fees | 0.583 | |
| Online Satisfaction | 0.805 | 0.720 |
| Online Loyalty | 0.932 | 0.638 |
| Amount | 0.707 | 0.679 |
| AVE × R2 | | 0.480 |
| GoF = √(AVE × R2) | | 0.69 |

Several criteria that must be met to assess the quality of the model in predicting endogenous constructs include: coefficient of determination (R2), cross-validated redundancy (Q2), path coefficients, and the effect size (f2)(F. Hair Jr et al., 2014). R2 is a measure of the predictive accuracy of the model, Q2 is a facility for assessing the predictive relevance of the inner model, path coefficients are values that represent the hypothesized relationships connecting the constructs, and f2 is the effect size for each path model(F. Hair Jr et al., 2014). Meanwhile, the coefficient of determination (R2) can also confirm the predictor in the percentage of exogenous variables(J. Hair, Black, Babin, & Anderson, 2010). Based on table 4, it shows that the predictive accuracy of the online loyalty variable in the halodoc application is moderate(Joe F Hair, Ringle, & Sarstedt, 2011). Electronic service quality, transaction costs, and experience value can predict 72% (R2:0.720) of online satisfaction and 67.9% (R2:0.679) of online loyalty. Furthermore, if the Q2 value is greater than zero then the detected value has a good reconstruction and the model has good predictive relevance. In this study, the Q2 values are all positive so that the predicted values of the proposed model are appropriate.

Testing the significance of the path coefficient and hypothesis testing are the next stages. Testing the significance of path coefficients can be done using the bootstrapping method using 5000 bootstrap samples(Joe F Hair et al., 2011). Critical t-values for the two-tailed test: 1.65 (signifcance level = 0.1), 1.96 (signifcance level = 0.05), and 2.58

(signifcance level = 0.01)(Joe F Hair et al., 2011). Estimates regarding model parameters can be seen in figure 2, and the results of hypothesis testing can be seen in table 5. Electronic service quality has a coefficient value of 0.480 with a t-value of more than 1.96 for online satisfaction so that H1 can be accepted. Meanwhile, transaction costs have a coefficient value of 0.256 with a t-value of more than 1.96 on online satisfaction so that H2 can be accepted. The experience value has a coefficient value of 0.375 with a t-value of more than 1.96 so that H3 can be proven. Lastly, online satisfaction has a coefficient value of 0.786 with a t-value of more than 1.96. So it can be concluded that online satisfaction can generate online loyalty when using the Halodoc application.

Next, measuring the influence of each path model through f2 is presented in table 5. Electronic service quality (0.480) has a greater influence than experience value (0.375) and transaction costs (0.256) on online satisfaction. However, this research also proves that the online satisfaction variable (0.786) plays a more important role than the variables of experience value, electronic service quality, and transaction costs in forming online loyalty to online mobile game applications. Meanwhile, in relation to indirect effects, the experience value variable (0.269) still has a greater influence on online satisfaction when compared to the electronic service quality variables (0.221) and transaction costs (0.167) which are mediated by online satisfaction.

*Table 5. Path Analysis*

| | **Influence** | | | | | | **Test result** |
|---|---|---|---|---|---|---|---|
| | **Indirect** | | **Direct** | | **Total** | | |
| **Track** | **Coefficient** | **T Statistics** | **Coefficient** | **T Statistics** | **Coefficient** | **T Statistics** | |
| Electronic service quality -> Online satisfaction | 0.480 | 4,160 * | | | 0.312 | 4,160 * | Accepted |
| Electronic service quality -> Online loyalty | | | 0.221 | 3,160 * | 0.229 | 3,160 * | |
| Transaction fees -> Online satisfaction | 0.256 | 2,791 * | | | 0.203 | 2,791 * | Accepted |
| Transaction fees -> Online loyalty | | | 0.167 | 2,670 * | 0.149 | 2,670 * | |
| Experience value-> Online satisfaction | 0.375 | 5,557 * | | | 0,400 | 5,557 * | Accepted |
| Experience value-> Online loyalty | - | - | 0.269 | 4,748 * | 0.293 | 4,748 * | |
| Online satisfaction -> Online loyalty | | | 0.786 | 17,581* | 0.734 | 17,581* | Accepted |

## DISCUSSION

This research tests the structural model and the influence of the relationship between electronic service quality, transaction costs, experience value on online satisfaction, and online loyalty in the context of the Halodoc telemedicine application. Next, the findings produced in this research will be discussed in more depth based on previous research. First, e-service quality is the most important factor influencing online satisfaction with the halodoc application because it has the largest total effect on online loyalty. In the context

of online shopping research, three dimensions of electronic service quality, namely website design, security/privacy and compliance, influence the overall quality of electronic services(Rita, Oliveira, & Farisa, 2019). In research by Wenfang et.al(2022)e-service quality (system design, intelligent fulfillment, security assurance, and interactive services) has a positive effect on customer engagement behavior. In addition, customer trust and perceived risk play a mediating role between e-service quality and customer engagement behavior in the e-commerce context. Another study conducted in online apparel stores concluded that a high level of e-service quality has a positive effect on e-satisfaction(Olofsson & Andersson Karlström, 2022). In the context of research, e-service quality in mobile applications has been studied in various contexts such as mobile commerce and mobile banking applications. A study conducted to determine the quality of electronic services from mobile commerce applications (MCA) found that customer satisfaction has a positive effect on customer loyalty among mobile commerce users.(Zariman, Humaidi, & Abd Rashid, 2022). Research conducted on the impact of electronic service quality on customer satisfaction and loyalty in using mobile banking found that overall electronic service quality significantly influences customer satisfaction and loyalty.(Puriwat & Tripopsakul, 2017). Trust, reliability, and responsiveness were identified as key factors influencing customer satisfaction. Another study on mobile banking users shows that trust, service quality and perceived value have a positive and significant effect on customer satisfaction(Marliyah, Ridwan, & Sari, 2021)

The results of this research show that e-service quality is the most important thing to create online satisfaction and online loyalty for halodoc application users. Moreover, the quality of application services is felt directly by users based on the features contained in the halodoc application. Therefore, halodoc needs to improve e-service quality in the halodoc application in terms of information availability, ease of use, privacy/security, graphic style, and reliability. In this way, users of the Halodoc application will return to using it and can even recommend its use to other parties.

Second, experience value is the second most important factor with a total influence on online satisfaction and online loyalty in using the halodoc application. These results confirm previous research which states that experience value has a significant effect on online satisfaction and online loyalty(Devaraj et al., 2002;Yang et al., 2009). In the context of mobile commerce applications, a study found that customer satisfaction has a positive effect on customer loyalty among mobile commerce application users, which indicates the mediating role of customer satisfaction in the relationship between mobile commerce application service quality and customer loyalty.(Zariman et al., 2022). In the context of online education applications, research shows that experience value has a positive and significant influence on the intention to continue using the application through sensory, emotional, reflective, action and associative values.(Zhao & Songs, 2022). Meanwhile, in the context of online mobile game applications, experience value is the variable that has the most influence on online satisfaction and loyalty through hedonic value and utilitarian value.(Rifky & Wibisono, 2019)The results of this research are also the same as previous research that experiential value has a positive effect on online satisfaction and loyalty for halodoc application users.

Third, transaction costs are the last most important factor in creating satisfaction and loyalty when using the halodoc application. These results are in accordance with previous research which states that transaction costs have a significant effect on online satisfaction and online loyalty(Devaraj et al., 2002;Yang et al., 2009). In research conducted by Rifky & Wibisono(2019)shows that transaction costs have a positive effect on satisfaction and loyalty of online mobile game application users. Meanwhile, another study in the context of mobile banking found that cost had the strongest influence on satisfaction, followed by

responsiveness and relative advantage.(Jahan & Shahria, 2022). These results show that minimizing transaction costs and providing a smooth transaction experience in the halodoc application will likely have a positive impact on online satisfaction and loyalty. However, halodoc application users do not make it a top priority as a factor that can create online satisfaction and online loyalty when using the halodoc application.

Lastly, this study proves that another important factor is online satisfaction. The results of this research also prove that research findings are consistent with previous research(Devaraj et al., 2002;Yang et al., 2009). Thus, online mobile game developers must pay attention to factors that can shape online satisfaction such as experience value, electronic service quality and transaction costs.

**IMPLICATIONS**

This study shows that the electronic service quality variable has a significant direct and indirect influence on online loyalty which is mediated by online satisfaction. Thus, it is important for halodoc as a start-up company in the telemedicine sector to consider all indicators related to the features contained in the halodoc application. Developers need to pay attention to every dimension of e-service quality such as information availability, ease of use, privacy/security, graphic style, and reliability. Thus, aspects of feature convenience and attractive appearance of features are the most important factors for building online loyalty and online satisfaction through the quality of the electronic services provided. To achieve these results, there are many ways to create good e-service quality in the halodoc application, such as efficiency by ensuring the halodoc mobile app provides a smooth and user-friendly experience, allowing users to navigate and complete transactions easily. System availability, ensure mobile apps are consistently available and accessible to users, minimizing downtime and technical problems. Fulfillment, Providing promised services or products in a timely and satisfactory manner, meeting or exceeding user expectations. Customer Service, providing excellent customer service to address user concerns and issues promptly, contributing to an overall positive experience. Security and Privacy, implementing strong security measures to protect user data and ensure a safe and secure transaction environment. User Experience (UX), designing mobile apps with a focus on user experience, combining attractive visuals, intuitive navigation, and seamless integration with other services.

## CONCLUSION

. From the results of the analysis and exploration of this research, we hope to provide suggestions and input to halodoc as an applicator or company operating in the telemedicine sector. First, the focus of application development must be based on aspects of electronic service quality such as information availability, ease of use, privacy/security, graphic style, and reliability. Because e-service quality is one of the most influential factors in creating satisfaction and loyalty for halodoc application users. Second, the experience value that the application provides to its users in terms of sensory, emotional, reflective, hedonic and utilitarian values. The experience value aspect is important to pay attention to because it will be able to satisfy consumers' curiosity regarding the orientation of the product or brand information they will purchase and ultimately help consumers in making purchasing decisions. Third, transaction costs are the third influencing factor in creating satisfaction and loyalty when using the halodoc application. Minimizing transaction costs and providing a smooth transaction experience in the halodoc application will likely have a positive impact on online satisfaction and loyalty.

## REFERENCES

Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modeling (PLS-SEM) in hospitality research. International Journal of Contemporary Hospitality Management, 30(1), 514-538.

Carlson, J., & O'Cass, A. (2010). Exploring the relationship between e-service quality, satisfaction, attitudes and behavior in content-driven e-service web sites. Journal of services marketing, 24(2), 112-127.

Coase, R. H. (2012). The firm, the market, and the law: University of Chicago press.

Daryanto, A., de Ruyter, K., Wetzels, M., & Patterson, P. G. (2010). Service firms and customer loyalty programs: a regulatory fit perspective of reward preferences in a health club setting. Journal of the academy of marketing science, 38(5), 604-616.

Devaraj, S., Fan, M., & Kohli, R. (2002). Antecedents of B2C channel satisfaction and preference: validating e-commerce metrics. Information systems research, 13(3), 316-333.

F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. European Business Review, 26(2), 106-121.

Fan, W., Shao, B., & Dong, X. (2022). Effect of e-service quality on customer engagement behavior in e-commerce communities. Frontiers in psychology, 13, 965998.

Fransiska, C., & Bernardo, I. (2021). The Influence of Service Quality on Customer Satisfaction and Continuity of Use among Health Application Users. Journal of Business Administration (JAB), 11(2), 132-142.

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). Multivariate data analysis Upper Saddle River: Pearson Prentice Hall.[Links].

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modeling methods. Journal of the academy of marketing science, 45(5), 616-632.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19(2), 139-152.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the academy of marketing science, 40(3), 414-433.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the academy of marketing science, 43(1), 115-135.

Herington, C., & Weaven, S. (2009). E-retailing by banks: e-service quality and its importance to customer satisfaction. European Journal of Marketing, 43(9/10), 1220-1231.

Holbrook, M. B., & Hirschman, E. C. (2012). The semiotics of consumption: Interpreting symbolic consumer behavior in popular culture and works of art (Vol. 110): Walter de Gruyter.

Jahan, N., & Shahria, G. (2022). Factors influencing customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. South Asian Journal of Marketing, 3(1), 60-76.

Lu, Y., Zhang, L., & Wang, B. (2009). A multidimensional and hierarchical model of mobile service quality. Electronic Commerce Research and Applications, 8(5), 228-240.

Marliyah, M., Ridwan, M., & Sari, A. K. (2021). The Effect of E-Service Quality on Satisfaction and Its Impact on Customer Loyalty of Mobile Banking Users (Case Study of Bank Syariah Mandiri KCP Belawan). Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences, 4(2), 2717-2729.

Olofsson, L., & Andersson Karlström, L. (2022). The effect of e-service quality on customer's e-satisfaction in online apparel stores: Within the Swedish context.

Oppong, E., Hinson, R. E., Adeola, O., Muritala, O., & Kosiba, J. P. (2021). The effect of mobile health service quality on user satisfaction and continuous usage. Total Quality Management & Business Excellence, 32(1-2), 177-198.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. Journal of retailing, 64(1), 12.

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. Journal of service research, 7(3), 213-233.

Park, J., & Ha, S. (2016). Co-creation of service recovery: Utilitarian and hedonic value and post-recovery responses. Journal of Retailing and Consumer Services, 28, 310-316.

Permana, A. W., Suardika, N., Sujana, W., & Yuesti, A. (2019). Analysis of service quality and value effect on patient satisfaction and its effect on loyalty of hospital patients in hospital and children of Puncak Permata Hati. International Journal of Contemporary Research and Reviews, 10(02), 21255-21266.

Puriwat, W., & Tripopsakul, S. (2017). The impact of e-service quality on customer satisfaction and loyalty in mobile banking usage: Case study of Thailand. Polish Journal of Management Studies, 15(2), 183-193.

Rifky, A., & Wibisono, N. (2019). The Influence of Service Quality, Transaction Costs and Experience Value on User Satisfaction and Loyalty of Online Mobile Game Applications. Paper presented at the Proceedings of the Industrial Research Workshop and National Seminar.

Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. Heliyon, 5(10).

Robbins, R., Krebs, P., Jagannathan, R., Jean-Louis, G., & Duncan, D. T. (2017). Health app use among US mobile phone users: analysis of trends by chronic disease status. JMIR mHealth and uHealth, 5(12), e7832.

Rodgers, W., Negash, S., & Suk, K. (2005). The moderating effect of on-line experience on the antecedents and consequences of on-line satisfaction. Psychology & Marketing, 22(4), 313-331.

Silalahi, R., Hartono, N., & Tumpak, M. (2018). Profile and preferences of users of doctors consultation application in Indonesia. Paper presented at the IOP Conference Series: Earth and Environmental Science.

Simanjuntak, M., Daryanto, A., & Rusolono, T. (2016). FORESTRY COMPANY SATISFACTION TOWARDS ONLINE INFORMATION SYSTEM IMPLEMENTATION OF FOREST PRODUCT MANAGEMENT (SI-PUHH). Indonesian Journal of Business and Entrepreneurship (IJBE), 2(1), 12.

Simcic Brønn, P. (2012). Adapting the PZB service quality model to reputation risk analysis and the implications for CSR communication. Journal of Communication Management, 16(1), 77-94.

Suhartanto, D. (2014). Marketing Research Methods. Bandung: Alphabeta.
SUHARTANTO, D., FARHANI, N. H., & MUFLIH, M. (2018). Loyalty Intention towards Islamic Banks: The Role of Religiosity, Image, and Trust. International Journal of Economics & Management, 12(1).
Suhartanto, D., Helmi Ali, M., Tan, K. H., Sjahroeddin, F., & Kusdibyo, L. (2019). Loyalty toward online food delivery service: the role of e-service quality and food quality. Journal of Foodservice Business Research, 22(1), 81-97.
Suhartanto, D., & Triyuni, N. N. (2016). Tourist loyalty toward shopping destination: the role of shopping satisfaction and destination image. European Journal of Tourism Research, 13, 84.
Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modelling. Computational statistics & data analysis, 48(1), 159-205.
Williamson, O., & Ghani, T. (2012). Transaction cost economics and its uses in marketing. Journal of the academy of marketing science, 40(1), 74-85.
Won Jeong, S., Fiore, A. M., Niehm, L. S., & Lorenz, F. O. (2009). The role of experiential value in online shopping: The impacts of product presentation on consumer responses towards an apparel website. Internet Research, 19(1), 105-124.
Wong, K. K.-K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. Marketing Bulletin, 24(1), 1-32.
Wu, C. H.-J., & Liang, R.-D. (2009). Effect of experiential value on customer satisfaction with service encounters in luxury-hotel restaurants. International Journal of Hospitality Management, 28(4), 586-593.
Wu, H.-C., Li, M.-Y., & Li, T. (2018). A study of experiential quality, experiential value, experiential satisfaction, theme park image, and revisit intention. Journal of Hospitality & Tourism Research, 42(1), 26-73.
Yang, H.-E., Wu, C.-C., & Wang, K.-C. (2009). An empirical analysis of online game service satisfaction and loyalty. Expert Systems with Applications, 36(2), 1816-1825.
Zariman, N. F. M., Humaidi, N., & Abd Rashid, M. H. (2022). Mobile commerce applications service quality in enhancing customer loyalty intention: mediating role of customer satisfaction. Journal of Financial Services Marketing, 1-15.
Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of instant knowledge. Journal of the academy of marketing science, 30(4), 362.
Zhao, H., & Song, L. (2022). Assessing the Antecedents and Consequences of Experience Value in Online Education: A Quantitative Approach. Frontiers in psychology, 13, 911565.