The Effect of Service Quality and User Satisfaction on User Loyalty of Information and Communication Technology in Lapan

Igif G Prihanto[1], Budhi Riyanto[2], Hendy Gunawan[3], Abdullah Jamil[4], Arif Surahman[5], Arief Indriarto Haris[6]

[1,2,3,4,5,6] *Information and Communication Technology of Aeronautics and Space Centre, National Institute of Aeronautics and Space (LAPAN), Indonesia*
* Corresponding Email: igif.prihanto@lapan.go.id

Abstract

The purpose of this study is to determine directly or indirectly the effect of service quality (X) on user satisfaction (Y) and loyalty of LAPAN's ICT users. The sample size of this study was 278 participants from a population of 1,191 LAPAN employees based on Slovin's formula, with an error of 6%. The data acquisition technique was performed by targeted sampling and proportional sampling, with data acquisition taking place in June 2021. Data analysis was carried out using the path analysis method. The results show that there is a positive and significant effect between service quality and user satisfaction. There is a positive and important effect between user satisfaction and user loyalty. There is a positive and important effect between the quality of service and the loyalty of the user. It also has a positive and important effect between service quality and loyalty through user satisfaction. It was found that H1: Service quality (X) has a direct positive and significant effect on user satisfaction (Y); H2: User satisfaction (Y) directly has a positive and significant effect on user loyalty (Z); H3: Service quality (X) has a direct positive and significant effect on user loyalty (Z); and H4: Service quality (X) does not indirectly have a positive and significant effect on loyalty (Z) through user satisfaction (Y).

Keywords— Quality of service, Customer Satisfaction; Customer Loyalty, Path Analysis

I. INTRODUCTION

Quality of service is the degree of difference between user expectations and the performance of the service received (Lau et al., 2013). The service quality reflects the comparison between the level of service delivered by the organization compared to user expectations (Pambudi et al., 2020). So service providers are required to be able to meet the needs desired by users (Erica & Rasyid, 2018). Meanwhile, user satisfaction is the user's perception of a need or desire that can be fulfilled (Zeithaml, 2000), as a feeling of pleasure or displeasure over the comparison of expectations with reality (Kotler & Keller, 2016). Satisfaction can be met from the performance that matches or even exceeds expectations (Erica & Rasyid, 2018), so that if user satisfaction is high, the level of user loyalty will also be high (Christopher H.

Lovelock, 2007). User loyalty is a statement that they are satisfied with the level of service received, and intend to continue the relationship (Selnes, 1993), and utilize or use the service continuously and recommend to others (Christopher H. Lovelock, 2007). Therefore, service quality and service user satisfaction are an integral part of organizational goals (Erica & Rasyid, 2018), and have a very important role in efforts to improve service quality higher (Uzunboylu, 2016) so as to increase user loyalty (Foster, 2020).

The National Institute of Aeronautics and Space (LAPAN) in carrying out its duties has used ICT by providing ICT services to all LAPAN employees as users to support research, development, study, and application in the field of aviation and space. The problem is that the ICT services provided by LAPAN are not

optimal because they still have shortcomings in their delivery. This is because there are several complaints submitted by users regarding the quality of services provided by LAPAN. This complaint indicates that there is a gap between the performance of the services provided and the user's expected interests. In the future, this complaint needs to be followed up so that it does not have a bad impact on LAPAN by evaluating and improving services to optimize the quality of the services provided. This condition is used as the basis for consideration and the importance of ICT services provided by LAPAN needs to be investigated to see if there is a significant influence between service quality and user satisfaction and user loyalty of ICT services provided by LAPAN.

In this study, the pattern of the relationship between service quality and user satisfaction, and user loyalty will be measure using the Path Analysis method. This method is to check the magnitude of the contribution shown by the path coefficients on every path diagram of the causative relationship between service quality, user satisfaction, and user loyalty and their impact on user loyalty. within the analysis, the variable quantity affects the dependent variable, not solely directly however conjointly indirectly. Several researchers have succeeded in proving a significant influence between service quality, user satisfaction, and loyalty, among others: on passengers of PT. Sriwijaya Airline (Yayuk Abriyani Gani, 2021), applications on Bukalapak.com (Gupron, 2020), Commercial Banks in Vietnam (Nguyen et al., 2020), E-Wallet (OVO) users (Foster, 2020), Case of Online Shopping in Pakistan (Khan et al., 2019), E-banking users (Basri, 2019), Online transportation service users in Jakarta (Erica & Rasyid, 2018), and Go-Jek users (Rasyid, 2017), In B2B Technology Service Industry (Huang et al., 2019), and users BPJS (Dewi, 2017).

From these several studies, it can be seen that the research is mostly conducted on industries and banking which are profit-oriented and use indicators adapted from the results of previous studies. It is different in this study because it will be carried out at a non-profit government agency (LAPAN) and research related to this has never been done. In addition, the service indicators used are not only adapted from the results of previous research but have been elaborated and adapted to the main tasks carried out by LAPAN.

Based on this, LAPAN needs to conduct research on ICT services provided by LAPAN. This study aims to determine whether there is a positive and significant effect between service quality and user satisfaction and user loyalty of LAPAN ICT services directly or indirectly. The research hypothesis proposed is H1: there is a positive and significant effect between service quality (X) and user satisfaction (Y); H2: there is a positive and significant effect between user satisfaction (Y) and user loyalty (Z); and H4: Service quality (X) indirectly has a positive and significant effect on loyalty (Z) through user satisfaction (Y). The benefits of this research are considered for LAPAN leaders to improve the quality of LAPAN ICT services following the interests and expectations of users.

II. METHODOLOGY

The data of this research is the perception of LAPAN employees are the use of LAPAN ICT services. Data collection by sending questionnaires to users in the form by a "google form". The indicators used as question instruments for the performance of LAPAN ICT services in the questionnaire are arranged based on the Likert scale by giving the weight of the answers, namely very good (SB) answers are given a weight = 4, good (B) are given a weight = 3, not good (TB) are given weight = 2, and very not good (STB) given a weight = 1. The number of indicators on the research questionnaire, consisting of 18 indicators (Table 1), namely: 13 indicators of service quality (Hirmukhe, 2012; Parasuraman et al., 2005; Stefano et al., 2015); 2 (two) indicators for user satisfaction (Kotler & Keller, 2016) and 3 (three) indicators for user loyalty (Christopher H. Lovelock, 2007).

Table 1. Dimensions and Service Indicators

Dimension	Indicator	Code
Service Quality: The level of difference in user perceptions of expectations with the performance of the services received (Lau et al., 2013)	• **Tangible:** Appearance of physical facilities, equipment, personnel and communication materials	
	1. State-of-the-art physical facilities	KL01
	2. Complete service facilities	KL02
	3. Physical facilities are functioning well	KL03
	• **Reliability:** The ability to perform the promised service reliably and accurately	
	4. Services provided according to user needs	KL04
	5. Reliability in dealing with problems	KL05
	• **Responsiveness:** Willingness to help customers and provide prompt service	
	6. Speed in handling service requests	KL06
	7. Speed in responding to service problems	KL07
	8. Speed in handling / fixing service problems	KL08
	• **Assurance:** Combination of competence, courtesy, credibility and security	
	9. Credibility in fostering user trust	KL09
	10. Knowledge of service types	KL10
	• **Empathy:** Combination of access, communication and understanding the customer	
	11. Oriented to user needs	KL11
	12. Paying attention to users	KL12
	13. Understand user needs	KL13
User Satisfaction: The result of comparing feelings of pleasure or displeasure with expectations with reality (Kotler & Keller, 2016)	14. The usefulness of the services provided to users	KP01
	15. Suitability of services provided with user needs	KP02
User Loyalty: The statement is satisfied, utilizes the service continuously and recommends it to others (Christopher H. Lovelock, 2007)	16. Intend to use the service	LP01
	17. Saying positive things about using the service	LP02
	18. Recommend to others to use the service	LP03

Testing data processing with the SPSS program (Priyatno, 2018). The instrument validity test was carried out by comparing the rcount value obtained from the Corrected Item-Total Correlation and the rtable obtained from a significant level (α) of 0.05 with a 2-sided test and sample (n) = 30. If rcount is greater than or equal to ttable then the indicator used as an instrument in the questionnaire is to be valid, whereas if the value of rcount is less than rtable, the indicator used as an instrument in the questionnaire is said to be invalid (Sugiyono, 2016). The reliability test is carried out by looking at the Cronbach's Alpha value, ie if the Cronbach's Alpha value is greater than 0.7 then all indicators used as instruments in the questionnaire can be said to be reliable, and if the Cronbach's Alpha value is less than 0.7 then all indicators used as the instrument on the questionnaire is said to be unreliable (Ghozali, 2016).

The number of samples is 278 from a population of 1,191 LAPAN employees. The sampling technique used is purposive sampling, which is carried out with certain considerations and criteria that really depend on the research objectives. In addition, sampling is also carried out using proportional sampling which is very

dependent on the number of population so that it remains representative and fulfills the minimum sample size. In this study, the minimum sample size can be determined using the Slovin formulation with a margin of error of 6% (Napitupulu, 2016) and the data collection period is 27-29 June 2021.

Data analysis was carried out using the Path Analysis method. The concept of path analysis is presented in Figure 1, where service quality (X) influenced user satisfaction (Y), user loyalty (Z) is influenced by user satisfaction (Y), and user loyalty (Z) can be influenced directly or indirectly. by service quality (X). The error variable (e) is another variable outside of service quality (X) that is likely to affect user satisfaction (Y) and user loyalty (Z) by $e = \sqrt{1 - \text{R Square}}$. Positive or negative influence is determined from the value of Beta (β), if Beta (β) is positive then the variable has a positive effect and if Beta (β) is negative then the variable has a negative effect. The significant or insignificant effect is determined from the t value and significant value, if the tcount > ttable or the value of Sig. < 0.05 then the variable has a significant effect if the value of tcount < ttable or the value of Sig. > 0.05 then the variable has no significant effect. The magnitude of the variable contribution is determined from the R Square value of the variable.
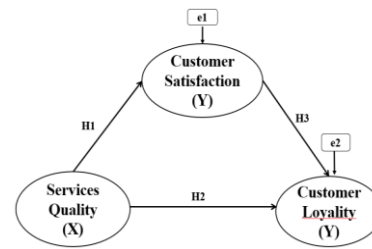

Figure 1. Path Analysis Diagram Concept
Source: (Aryani & Rosinta, 2010; Rofiah & Wahyuni, 2017; Sasono et al., 2021; Umah, 2018; Yang & Peterson, 2004).

From Figure 1, the research hypothesis proposed is H1: there is a positive and significant effect between service quality (X) and user satisfaction (Y); H2: there is a positive and significant effect between user satisfaction (Y) and user loyalty (Z); H3: there is a positive and significant effect between service quality (X) and user loyalty (Z); and H4: there is a positive and significant effect between service quality (X) and loyalty (Z) through user satisfaction (Y).

III.RESULTS AND DISCUSSION

Respondent Demographics

The research data consisted of 278 respondents, with the majority 61.2% male and the rest female; 39.9% were between 20-30 years old and the rest were of other ages; 60.1% have S1 education and the rest have other education (Table 2).

Table 2. Respondents Demographic Profile

Aspek	Category	Respondents (n=278) Frequency	Percentage
Gender	Male	170	61.2
	Female	108	38.8
Age	20-30 years old	111	39.9
	31-40 years old	84	30.2
	41-50 years old	44	15.8
	51-60 years old	36	12.9
	61-70 years old	3	1.1
Educational	High school / Diploma	14	5.0
	Bachelor (S1)	167	60.1
	Magister (S2)	81	29.1
	Doctor (S3)	16	5.8

Source: Primary data processed, 2021

Validity and Reliability Test

The results of the instrument validity test of the questionnaire obtained that the rcount value was in the interval between 0.762 to 0.894 (Table 3). Because the rcount value is greater than the rtable value (=0.3610), all indicators used as

instruments in the questionnaire on LAPAN ICT services are declared valid and significant (Sugiyono, 2018). Meanwhile, the results of the reliability test obtained Cronbach's Alpha value of 0.978 (Table 4). Because the value of Cronbach's Alpha > 0.70 all instrument variables in the questionnaire were declared reliable (Basri, 2019). From the results of the validity and reliability tests for LAPAN ICT service indicators, it can be said to be valid and reliable. Therefore, the indicators used as instruments in the questionnaire are very accurate for measuring LAPAN's ICT services in this study (Table 4).

Table 3. Validity Test Results

Dimension	Code	Corrected Item-Total Correlation (r_{hitung})	Category
Service Quality	KL01	.823	Valid
	KL02	.831	Valid
	KL03	.843	Valid
	KL04	.835	Valid
	KL05	.762	Valid
	KL06	.806	Valid
	KL07	.869	Valid
	KL08	.887	Valid
	KL09	.848	Valid

	KL10	.796	Valid
	KL11	.828	Valid
	KL12	.801	Valid
	KL13	.894	Valid
User Satisfaction	KP01	.869	Valid
	KP02	.866	Valid
User Loyalty	LP01	.821	Valid
	LP02	.821	Valid
	LP03	.831	Valid

Source: Primary data processed, 2021

Table 4. Reliability Test Results

Reliability Statistics

Cronbach's Alpha	N of Items
.978	18

Source: Primary data processed, 2021

Discussion

The results of the path analysis test of service quality (X) on user satisfaction (Y) and user loyalty of LAPAN ICT services (Z) it can be seen that the Beta coefficient value, tcount value, and significant level are as shown in Table 5. Meanwhile, from the path analysis model, the pattern is known. Causal relationship between service quality (X) on user satisfaction (Y) and loyalty of LAPAN ICT service users (Z) as shown in Figure 2.

Table 5. Path Analysis Test Results

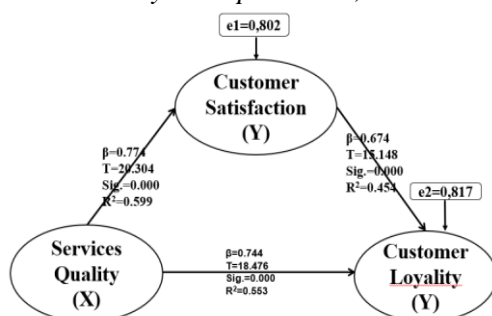| Hypothesis Testing	Standardized Coefficients (Beta)	t	Sig.	Information	R Square
H_1: X Against Y	.774	20.304	.000	Significant	.599
H_2: Y Against Z	.674	15.148	.000	Significant	.454
H_3: X Against Z	.744	18.476	.000	Significant	.553

Source: Primary Data processed, 2021

Figure 2. Path Analysis Model
Source: Primary Data processed, 2021

From the results of the path analysis test and the path analysis model of service quality on user satisfaction and user loyalty, the research hypothesis testing is explained as follows:

1. H1: There is a significant positive impact between service quality (X) and user satisfaction (Y)

The null hypothesis (H0) states that there is no positive and significant effect between service quality (X) and user satisfaction (Y), and the alternative hypothesis (H1) states that there is a positive and significant effect between service

quality (X) and user satisfaction (Y). Because the Beta coefficient value (β=0.774) is positive, and the ttable (=1.972) is smaller than tcount value (=20.304) and the significant level (= 0.000) is fewer than 0.05, then H0 is rejected and H1 is accepted. It is a positive and significant effect between service quality (X) and user satisfaction (Y) directly. The magnitude of the contribution given by service quality to user satisfaction (R Square) is 59.9% and the rest is influenced by other factors outside of service quality that may affect user satisfaction by (e1)=$\sqrt{}$ (1-R Square) = 0.802.

This means that if the quality of ICT services provided by LAPAN increases, the satisfaction of LAPAN ICT service users will be higher, on the contrary, if the quality of ICT services provided by LAPAN is not good, then the satisfaction of LAPAN ICT service users will decrease. This is even more convincing if the quality of the services provided greatly determines the level of satisfaction of LAPAN ICT service users based on end-user perceptions. In fact, the perception of respondents in this study shows that the quality of ICT services provided by LAPAN directly affects user satisfaction. This condition further proves that service providers are indeed required to be able to meet the needs desired by users (Erica & Rasyid, 2018). In this study, the satisfaction of users of ICT services is influenced by several factors, including (a) the service facilities provided are up-to-date, complete, and functioning well, so that when users use these facilities they feel comfortable and satisfied; (b) the ability of employees to provide prompt and timely services as promised; (c) the speed of employees in handling requests and responding to service problems; (d) the ability of employees to communicate and pay attention to all users; and (e) the services provided are oriented to the needs of service users. The results of this study are consistent with the results of research conducted by previous researchers, who confirmed that service quality affects service user satisfaction (Basri, 2019; Chang & Thai, 2016; Dewi, 2017; Erica & Rasyid, 2018;

Foster, 2020; Huang et al., 2019; Maharsi et al., 2021; Normasari, 2013; Nugroho, 2014; Pereira et al., 2016; Purwanti et al., 2014; Rasyid, 2017; Rofiah & Wahyuni, 2017; Santoso & Kusnilawati, 2020; Sasono et al., 2021; Wardana & Sriwidodo, 2015; Wendha et al., 2013; Yayuk Abriyani Gani, 2021). On the other hand, the results of this study also contradict previous research, which confirmed that service quality does not affect service user satisfaction (Krishna Naik et al., 2010; Pambudi et al., 2020).

2. H2: There is a significant positive impact between user satisfaction (Y) and user loyalty (Z)

In this test, the null hypothesis (H0) states that there is no positive and significant effect between user satisfaction (Y) and user loyalty (Z), and the alternative hypothesis (H1) states that there is a positive and significant effect between user satisfaction (Y) and user loyalty. (Z). Because the Beta coefficient value (β=0.674) is positive, and the ttable (=1.972) is smaller than tcount value (=15.148) and the significant level (= 0.000) is fewer than 0.05, then H0 is rejected and H1 is accepted. It is a positive and significant effect between user satisfaction (Y) and user loyalty (Z) directly. The magnitude of the contribution given by user satisfaction to user loyalty (R Square) is 45.4% and the rest is influenced by other factors other than user satisfaction which may affect user loyalty by (e2)=$\sqrt{}$ (1-R Square) = 0.817.

It can be said that the better the satisfaction of users of ICT services provided by LAPAN, the loyalty of users of LAPAN ICT services will increase, on the contrary if the satisfaction of users of ICT services provided by LAPAN is not good, the loyalty of users of LAPAN ICT services will decrease.

This further confirms that user satisfaction is one of the factors that support the increase in user loyalty of ICT services provided by LAPAN based on end-user perceptions. Based on the perception of respondents in this study, it shows that user satisfaction directly affects the loyalty of users of ICT services provided by

LAPAN. This happens because the ICT services provided by LAPAN have provided benefits and are in accordance with the expected needs of users so that they are satisfied. In this study, the service user satisfaction indicator that contributes the most in supporting the creation of user loyalty is the use of LAPAN ICT services. The creation of user loyalty can also form recommendations and information from individuals to other (word of mouth) (Erica & Rasyid, 2018), because they intend to reuse LAPAN ICT services which are profitable.

This condition is not much different from the opinion of researchers who say that user satisfaction affects user loyalty On the other hand, these conditions are very different and contradict the opinion which says that user satisfaction has no effect on service user loyalty (Mutmainnah, 2018; Pereira et al., 2016).

3. H3: There is a significant positive impact between quality of service (X) and loyalty (Z).

In this test, the null hypothesis (H0) shows no positive significant effect between quality of service (X) and user loyalty (Z), and the alternative hypothesis (H1) is positive during service. Indicates that there is a significant effect of. Quality (X) and user loyalty. (Z). Because the Beta coefficient value (β=0.744) is positive, and the ttable (=1.972) is smaller than tcount value (=18.476) and the significant level (= 0.000) is fewer than 0.05, then H0 is rejected and H1 is accepted. It is a positive and significant effect between service quality (X) and user loyalty (Z) directly. The magnitude of the contribution given by service quality to user loyalty (R Square) is 55.3% and the rest is influenced by other factors outside of service quality that may affect user loyalty by (e1)=$\sqrt{}$ (1-R Square) = 0.802.

These results indicate that the better the quality of ICT services provided by LAPAN, the loyalty of users of LAPAN's ICT services will increase, on the contrary if the quality of ICT services provided by LAPAN is not good, the loyalty of users of LAPAN's ICT services will decrease. This is more convincing if the quality of ICT services provided by LAPAN is very supportive and determines the level of loyalty of users of ICT services provided by LAPAN based on the perceptions of end users. So the respondent's perception of service quality is directly significant to the loyalty of users of ICT services provided by LAPAN. In fact, the perception of respondents in this study states that the quality of ICT services provided by LAPAN directly affects user loyalty. Service quality and user satisfaction are an integral part of organizational goals (Erica & Rasyid, 2018) **so** higher service quality **enhancements** (Uzunboylu, 2016) **will** increase user loyalty (Foster, 2020). In this study, this happens because: (a) the service facilities provided are up-to-date, complete and functioning well, so that when users use them they feel comfortable and satisfied; (b) the ability of employees to provide prompt and timely services as promised; (c) speed of employees in handling requests and responding to service problems; (d) the ability of employees to communicate and pay attention to all users; and (e) the services provided are oriented to the needs of service users.

The condition of the quality of the services provided is able to encourage or increase user loyalty by intending to use ICT services again and say positive things about using ICT services and recommending others to use the services provided by LAPAN. In this study, the service quality indicator that contributes the highest in supporting the creation of user loyalty is users who intend to use ICT services again. This condition strongly supports the opinion of researchers who assert that service quality affects user loyalty (Basri, 2019; Chen, 2012; Dewi, 2017; Erica & Rasyid, 2018; Foster, 2020; Normasari, 2013; Nugroho, 2014; Pereira et al., 2016; Purwanti et al., 2014; Rasyid, 2017; Sasono et al., 2021; Wardana & Sriwidodo, 2015; Wendha et al., 2013; Yayuk Abriyani Gani, 2021). On the other hand, this condition is contradictory to the opinion, which asserts that service quality has no effect on service user loyalty (Laurent, 2016).

4. H4: There is a significant positive impact between quality of service (X) and loyalty (Z) through user satisfaction (Y).

Table 5, we can see that the influence of service quality (X) directly or indirectly on user loyalty (Z) through user satisfaction (Y). The value of the beta coefficient (β) for the direct influence of service quality (X) on the loyalty of LAPAN ICT service users (Z) is 0.774.

The value of the Beta coefficient (β) for the influence of service quality (X) indirectly on user loyalty (Z) through user satisfaction (Y) is the multiplication of the Beta value (β) of service quality (X) on user satisfaction (Y) with the value of Beta (β) user satisfaction (Y) on the loyalty of LAPAN ICT service users (Z), which is 0.774 x 0.674 = 0.522. From Table 5, because the Beta () value on the direct influence of service quality (X) on the loyalty of LAPAN ICT service users (Z) is 0.774, which is greater than the Beta (β) value, the indirect effect is 0.552, then H4 is accepted. This means that there is no positive and significant effect between service quality (X) through user satisfaction (Y) on the loyalty of LAPAN ICT service users (Z). This condition further strengthens and at the same time supports the opinion of researchers who assert that there is no positive and significant effect between service quality (X) through user satisfaction on the loyalty of LAPAN ICT service users (Z) (Hilmawan & Suryani, 2014; Laurent, 2016; Rofiah & Wahyuni, 2017; Umah, 2018; Wardana & Sriwidodo, 2015). On the other hand, this condition is very different and contradicts the opinion of researchers who assert that there is no positive and significant effect between service quality on user loyalty through user satisfaction (Caruana, 2002; Chia et al., 2021; Erica & Rasyid, 2018; Foster, 2020; Mardikawati & Farida, 2013; Rasyid, 2017; Sasono et al., 2021; Yayuk Abriyani Gani, 2021).

Table 6. Direct and Indirect Effects

Effect of X on Z	Direct Effect	Indirect Effect (Through User Satisfaction)	Information	Conclusion
Quality of Service (X) to User Loyalty (Z)	0,774	0,522	Direct Effect (0.774) > Indirect Effect (0.522)	User Satisfaction is not an intervening variable

Source: Primary Data processed, 2021

IV. CONCLUSION

From the analysis of the effect of service quality (X) on user satisfaction (Y) and user loyalty of LAPAN ICT services (Z), it was found that H1: Service quality (X) has a direct positive and significant effect on user satisfaction (Y). This shows that high service quality will have an impact on high user satisfaction for LAPAN ICT services; H2: User satisfaction (Y) directly has a positive and significant effect on user loyalty (Z). This shows that increased user satisfaction, especially due to high service quality, will create an increase in user loyalty for LAPAN ICT services; H3: Service quality (X) has a direct positive and significant effect on user loyalty (Z). This shows that high service quality will create an increase in the loyalty of LAPAN ICT service users; and H4: Service quality (X) does not indirectly have a positive and significant effect on loyalty (Z) through user satisfaction (Y). This shows that user satisfaction is not an intervening variable of service quality on user loyalty of LAPAN ICT services.

REFERENCES

1. Aryani, D., & Rosinta, F. (2010). The Effect of Service Quality on Customer Satisfaction in Forming Customer Loyalty. *Jurnal Ilmu Administrasi Dan Organisasi*, *17*(2), 114–126. https://doi.org/10.20476/jbb.v17i2.632

2. Basri, A. I. (2019). Pengaruh Kualitas Layanan Terhadap Kepuasan dan Loyalitas Nasabah Bank Pengguna E-Banking. *Sustainability (Switzerland)*, *11*(1), 1–14.

3. Bowen, J. T., & Chen, S. L. (2001). The Relationship Between Customer Loyalty and Customer Satisfaction. *International Journal of Contemporary Hospitality Management*, *13*(5), 213–217. https://doi.org/10.1108/095961101103958 93

4. Caruana, A. (2002). Service loyalty. *European Journal of Marketing*, *36*(7/8), 811–828. https://doi.org/10.1108/030905602104308 18

5. Chang, C. H., & Thai, V. V. (2016). Do Port Security Quality and Service Quality Influence Customer Satisfaction and Loyalty? *Maritime Policy and Management*, *43*(6), 720–736. https://doi.org/10.1080/03088839.2016.11 51086

6. Chen, S. C. (2012). The Customer Satisfaction-Loyalty Relation in An Interactive E-Service Setting: The Mediators. *Journal of Retailing and Consumer Services*, *19*(2), 202–210. https://doi.org/10.1016/j.jretconser.2012.0 1.001

7. Chia, S. K. S., Lo, M. C., Razak, Z. Bin, Wang, Y. C., & Mohamad, A. A. (2021). Impact of Destination Image on Tourist Satisfaction: The Moderating Effect of Information Technology (IT). *Geojournal of Tourism and Geosites*, *34*(1), 88–93. https://doi.org/10.30892/gtg.34112-623

8. Christopher H. Lovelock, L. K. W. (2007). *Marketing Management Services*. Indeks.

9. Dewi, R. (2017). Pengaruh Kualitas Pelayanan Terhadap Loyalitas Pasien Pengguna Bpjs dengan Kepuasan Pasien Sebagai Variabel Intervening. *Jurnal Manajemen Dayasaing*, *18*(2), 146. https://doi.org/10.23917/dayasaing.v18i2.4 511

10. Erica, D., & Rasyid, H. Al. (2018). Pengaruh Kualitas Layanan dan Pemanfaatan Teknologi Terhadap Kepuasan dan Loyalitas Pelanggan Jasa Transportasi Online di Jakarta. *Jurnal Ecodemica*, *19 No. 2*(2), 168–176.

11. Foster, B. (2020). Pengaruh Servqual Terhadap Kepuasan yang Berdampak pada Loyalitas Pengguna E Wallet (OVO). *Jurnal Bisnis Dan Manajemen*, *14*(1).

12. Ghozali, I. (2016). *Aplikasi Analisis Multivariete dengan Program IBM SPSS 23 (VIII)* (VIII). Universitas Diponegoro.

13. Gupron. (2020). Analisis Kepuasan Konsumen Melalui E-Service Quality Terhadap Keputusan Pembelian Daring di Aplikasi Bukalapan.com (Studi pada Mahasiswa Universitas Batanghari Jambi). *Jurnal Manajemen Pendidikan Dan Ilmu Sosial*, *1*(1), 337–348. https://doi.org/10.38035/JMPIS

14. Hilmawan, I., & Suryani, A. (2014). Pengaruh Kualitas Layanan Terhadap Loyalitas Melalui Kepuasan Konsumen Studi pada Trans Sarbagita. *E-Jurnal Manajemen Universitas Udayana*, *3*(4), 254379.

15. Hirmukhe, J. (2012). Measuring Internal Customers ' Perception on Service Quality Using SERVQUAL in Administrative Services. *International Journal of Scientific and Research Publications*, *2*(3), 1–6.

16. Huang, P. L., Lee, B. C. Y., & Chen, C. C. (2019). The Influence of Service Quality on Customer Satisfaction and Loyalty In B2B Technology Service Industry. *Total Quality Management and Business Excellence*, *30*(13–14), 1449–1465. https://doi.org/10.1080/14783363.2017.13 72184

17. Khan, M. A., Zubair, S. S., & Malik, M. (2019). An assessment of e-service quality, e-satisfaction and e-loyalty: Case of online shopping in Pakistan. *South Asian Journal of Business Studies*, *8*(3), 283–302. https://doi.org/10.1108/SAJBS-01-2019-0016

18. Kotler, P., & Keller, K. L. (2016). Marketing Management. In *Pearson* (Vol. 37, Issue 1, p. 109). https://doi.org/10.2307/1250781

19. Krishna Naik, C. N., Gantasala, S. B., & Prabhakar, G. V. (2010). Service Quality (Servqual) and Its Effect on Customer Satisfaction in Retailing. *European Journal of Social Sciences*, *16*(2), 239–251.

20. Lau, M. M., Cheung, R., Lam, A. Y. C., & Chu, Y. T. (2013). Measuring Service Quality in the Banking Industry: A Hong Kong Based Study. *Contemporary Management Research*, *9*(3), 263–282. https://doi.org/10.7903/cmr.11060

21. Laurent, F. (2016). Pengaruh E-service Quality terhadap Loyalitas Pelanggan GO-JEK Melalui Kepuasan Pelanggan. *Agora*, *4*(2), 95–100.

22. Maharsi, A. R., Njotoprajitno, R. S., Hadianto, B., & Wiraatmaja, J. (2021). The Effect of Service Quality and Customer Satisfaction on Purchasing Intention: A Case Study in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(4), 475–482. https://doi.org/10.13106/jafeb.2021.vol8.no4.0475

23. Mardikawati, W., & Farida, N. (2013). Loyalitas Pelanggan, Melalui Kepuasan Pelanggan pada Pelanggan Bus Efisiensi (Studi PO Efisiensi Jurusan Yogyakarta-Cilacap). *Jurnal Administrasi Bisnis*, *2*(1), 64–75.

24. Mutmainnah, M. (2018). Pengaruh Kualitas Layanan dan Citra Perusahaan Terhadap Kepuasan dan Loyalitas Nasabah. *Jurnal Manajemen Dan Pemasaran Jasa*, *10*(2), 201. https://doi.org/10.25105/jmpj.v10i2.2344

25. Napitupulu, D. B. (2016). Evaluasi Kualitas Website Universitas XYZ dengan Pendekatan Webqual [Evaluation of XYZ University Website Quality Based on Webqual Approach]. *Buletin Pos Dan Telekomunikasi*, *14*(1), 51. https://doi.org/10.17933/bpostel.2016.140105

26. Nguyen, D. T., Pham, V. T., Tran, D. M., & Pham, D. B. T. (2020). Impact of Service Quality, Customer Satisfaction and Switching Costs on Customer Loyalty. *Journal of Asian Finance, Economics and Business*, *7*(8), 395–405. https://doi.org/10.13106/JAFEB.2020.VOL7.NO8.395

27. Normasari, S. (2013). Pengaruh Kualitas Pelayanan Terhadap Kepuasan Pelanggan, Citra Perusahaan dan Loyalitas Pelanggan Survei Padatamu Pelanggan yang Menginap di Hotel Pelangi Malang. *Jurnal Administrasi Bisnis S1 Universitas Brawijaya*, *6*(2), 77767.

28. Nugroho, N. T. (2014). Pengaruh Kualitas Pelayanan Terhadap Kepuasan dan Loyalitas Pelanggan. *Jurnal Paradigma*, *12*(02), 114–122.

29. Pambudi, D., Ginting, R. S., & Saputra, A. (2020). Analisis Kualitas Pelayanan, Kualitas Website Terhadap Kepuasan dan Pembelia Kembali pada Bukalapak. *Jurnal Manajemen Bisnis (JMB)*, *33*(1), 1.

30. Parasuraman, A. P., 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.

31. Pereira, D., Giantari, N. G. K., & Sukaatmadja, I. P. G. (2016). Pengaruh Service Quality Terhadap Satisfaction dan Customer Loyalty Dadirah di Dili Timor-Leste. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana, ISSN: 2337-3067*, *5*(2), 455–488.

32. Priyatno, D. (2018). *Pengujian Validitas dan Reliabilitas Kuesioner Diolah dengan Program SPSS*.

33. Purwanti, N. D., Sugiono, & Hardiningtyas, D. (2014). Analisis Pengaruh Kualitas Pelayanan dan Citra Perusahaan Terhadap Kepuasan dan Loyalitas Pelanggan (Studi Kasus: PT.PLN (Persero) Rayon Malang Kota). *Jurnal Rekayasa Dan Manajemen Sistem Industri*, *3*(2), 244–255.

34. Rasyid, H. Al. (2017). Pengaruh Kualitas Layanan dan Pemanfaatan Teknologi Terhadap Kepuasan dan Loyalitas Pelanggan Go-Jek. *Jurnal Ecodemica*, *19 No. 2*(2), 168–176.

35. Rofiah, C., & Wahyuni, D. (2017). Kualitas Pelayanan dan Pengaruhnya Terhadap Loyalitas Pelanggan yang Dimediasi oleh Kepuasan di Bank Muamalat Jombang. *Eksis: Jurnal Riset Ekonomi Dan Bisnis*, *12*(1), 69–82. https://doi.org/10.26533/eksis.v12i1.84

36. Santoso, A., & Kusnilawati, N. (2020). Evaluasi Determinan Kepuasan Mahasiswa. *JURNAL ILMIAH MANAJEMEN BISNIS DAN INOVASI UNIVERSITAS SAM RATULANGI (JMBI UNSRAT)*, *7*(1), 52–65.

37. Sasono, I., Jubaedi, A. D., Novitasari, D., Wiyono, N., Riyanto, R., Oktabrianto, O., Jainuri, J., & Waruwu, H. (2021). The Impact of E-Service Quality and Satisfaction on Customer Loyalty: Empirical Evidence from Internet Banking Users in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(4), 465–473. https://doi.org/10.13106/jafeb.2021.vol8.no4.0465

38. Selnes, F. (1993). An Examination of the Effect of Product Performance on Brand Reputation, Satisfaction and Loyalty. *Journal of Product & Brand Management*, *2*(4), 45–60. https://doi.org/10.1108/EUM0000000002981

39. Stefano, N. M., Casarotto Filho, N., Barichello, R., & Sohn, A. P. (2015). A Fuzzy SERVQUAL Based Method for Evaluated of Service Quality in The Hotel Industry. *Procedia CIRP*, *30*, 433–438. https://doi.org/10.1016/j.procir.2015.02.14 0

40. Sugiyono. (2018). *Metode Penelitian Manajemen (Pendekatan Kuantitatif,Kualitatif,Kombinasi,Penelitian Tindakan dan Penelitian Evaluasi)*. Alfabeta.

41. Umah, K. (2018). Kualitas Pelayanan Terhadap Kepuasan dan Loyalitas Nasabah pada Bank XYZ. *JURNAL MANAJEMEN BISNIS DAN KEWIRAUSAHAAN*, *2*, 79–88.

42. Uzunboylu, N. (2016). Service Quality in International Conference Industry; A Case Study of WCES 2015. *Procedia Economics and Finance*, *39*(November 2015), 44–56. https://doi.org/10.1016/s2212-5671(16)30239-8

43. Wardana, R. W., & Sriwidodo, U. (2015). Pengaruh Kualitas Pelayanan Terhadap Loyalitas dengan Kepuasan Sebagai Variabel Intervening pada Nasabah Pengguna Mobile Banking. *Jurnal Ekonomi Dan Kewirausahaan*, *15*(3), 329–338.

44. Wendha, A. A. A. A. P., Rahyuda, I. K., Suasana, I. G. A. ., Shaw, S. J., Davis, K. R., & Wirtz, J. (2013). Marketing Management. *Jurnal Manajemen, Strategi Bisnis, Dan Kewirausahaan*, *37*(1), 109. https://doi.org/10.2307/1250781

45. Yang, Z., & Peterson, R. T. (2004). Customer Perceived Value, Satisfaction, and Loyalty: The Role of Switching Costs. *Psychology and Marketing*, *21*(10), 799–822. https://doi.org/10.1002/mar.20030

46. Yayuk Abriyani Gani, A. (2021). Dampak Kualitas Layanan terhadap Loyalitas dan Kepuasan Penumpang PT. Sriwijaya Airlines Kabupaten Kendari. *Jurnal Ilmu Manajemen Sosial Humaniora (JIMSH)*, *3*(1), 35–48. https://doi.org/10.51454/jimsh.v3i1.86

47. Zeithaml, V. A. (2000). Service Quality, Profitability, and The Economic Worth of Customers: What We Know and What We Need to Learn. *Journal of the Academy of Marketing Science*, *28*(1), 67–85. https://doi.org/10.1177/009207030028100 7