

The Effect of E-Service Quality And Service Quality on Customer Satisfaction Mediated by Customer Trust in the PLN Mobile Application (Case Study on PLN Customer Service Unit in Samboja District, Kutai Kartanegara Regency)

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Abstract. *Digital service quality, often known as e-service quality, is one aspect that influences customer satisfaction. A more modern term for service quality is e-service quality, sometimes shortened to e-servqual. E-service quality is a measure of how well a service performs in the online marketplace. Explanatory research is the main focus of this work. The purpose of explanatory research is to explain the nature and role of the variables studied (Sugiyono, 2019). The purpose of this study is to test the hypothesis by examining the relationship and influence of the independent and dependent variables. Based on the conclusions from the research results described, the author can explain the limitations of the study, including: The sample size used was only conducted in one division of PT PLN, namely the Customer Service Unit in Samboja District, Kutai Kartanegara Regency. There are still many other factors that influence customer satisfaction with the PLN Mobile application.*

Keywords: *Dependent; Independent; Influence; Variables.*

1. Introduction

Digital initiatives like PLN Mobile help PLN keep up with technological trends and meet customer expectations. As a consumer-focused service, PLN Mobile emerged after the emergence of Contact Center 123, Facebook, Twitter, Instagram, and the web. Electricity bills, token purchases, kWh consumption records, payment methods through local banks, and the development of requests and complaints are just a few of the details customers can access through the PLN Mobile app. Specifically for PLN customers, the app is designed to facilitate complaint management and improve customer service. Customers can also view the latest employment status of PT PLN (Persero) through the app. PLN Mobile guarantees timely, reliable, and accurate data to its users. PLN Mobile's main navigation menu includes access to bill details, the latest tariff information, features for submitting complaints and requests, and much more. The PLN Mobile app is believed to enable PLN to contact consumers throughout Indonesia, thereby simplifying services to increase power capacity and create customer satisfaction (Wahid and Ratmono, 2022).

According to Komala and Firdaus (2020), after evaluating a product's performance compared to their expectations, a person can feel joy or disappointment. Customers are satisfied when a service or product delivers what they expect. To be considered good, the PLN Mobile application system must consider both the technical and user aspects, in this case, the PLN Mobile application users at ULP Samboja. An important consideration is the user's emotional satisfaction resulting from comparing their actual experience with their expectations. If the results do not meet expectations, users will feel dissatisfied. Money isn't everything; sometimes, fulfilling emotional needs is more important than material needs (Pakurár, 2019).

Buttle (2019) emphasized that companies are heavily influenced by customer satisfaction. Keeping current customers satisfied and returning is much easier than constantly seeking new ones. Retaining existing customers is more cost-effective than seeking new ones. Here are some ways satisfied customers help businesses succeed: they build good relationships with brands, which in turn encourages repeat business and loyalty, they speak up when they see negative publicity about the company or its products, and they spread the word about how great the company is.

Digital service quality, often known as e-service quality, is one aspect that influences customer satisfaction. A more modern term for service quality is e-service quality, sometimes shortened to e-servqual. E-service quality is a measure of how well a service performs in the online marketplace (Kau et al., 2023). To analyze and assess services offered online, e-service quality was developed. According to Kau et al. (2023), organizations must improve their online services to make them more effective and engaging. This will help them achieve maximum customer satisfaction.

Service providers can gain a market advantage if their digital offerings are high-quality. Service quality is also crucial to success. A manufacturer's ability to reliably meet market demand determines product quality. Service is considered satisfactory when it meets or exceeds expectations in terms of perceived quality. Customers report feeling satisfied and delighted with this type of service. Important characteristics customers demand from businesses are punctuality, friendliness, courtesy, and speed. Customers who are satisfied with the service they receive are more likely to recommend the business to others and can even enhance the company's reputation. Companies should prioritize service quality because it directly correlates with customer satisfaction (Zahra, 2017).

Service quality is the second element that influences customer satisfaction. According to Goeth and Davis (2019), service quality is a constantly changing condition involving things like people, processes, and environments that meet or exceed what customers anticipate. Lupiyoadi (2018) states that service quality is determined by several factors. These factors include various aspects, such as: the ability to provide timely and satisfactory service; staff responsiveness in assisting customers and providing responsive service; assurance of staff competence, politeness, and credibility; ease of communication and genuine attention to customers (empathy); and evaluation of physical facilities (tangible).

Lupiyoadi and Hamdani (2019) stated that service quality, especially excellent service, influences customer satisfaction. Even though the service is not physically present, it can still be evaluated using logic and experience. Because of the two-way nature of customer-business relationships, service quality can influence customer satisfaction. According to the concept of customer satisfaction, customer satisfaction can be achieved when perceived performance or outcomes meet client expectations. Consequently, customer satisfaction is highly dependent on the quality of service offered by a business.

Trust is the third component that influences consumer satisfaction. The term "customer trust" describes how buyers react when they perceive a discrepancy between how a product is supposed to work and how it actually works (Hidayati and Susanti, 2018). According to Dewi and Sari (2024), customer trust is influenced by the customer's perception of the discrepancy between expectations and the actual performance of a product. According to Kasinem (2020), customer satisfaction is positively influenced by trust. Trust in an application and ease of use are two factors that significantly influence customer interest in using the application, which in turn can increase customer satisfaction (Kasinem, 2020).

To build credibility with its clients, PT. PLN must eliminate any room for doubt or miscommunication by making every issue traceable using the PLN Mobile application. There will be no safe and convenient transactions, services, or information sharing without trust. Various security measures can be implemented by businesses to increase client confidence in their services. (Hidayati and Susanti, 2018).

The provision of services by PT. PLN (Persero) UPL Samboja is not without its challenges. For example, irresponsible PLN officers frequently tamper with electricity meters, resulting in inflated customer bills and other illegal charges. Furthermore, pre-survey data as of January 17, 2025, indicates that periodic power outages are a contributing factor to customer losses by reducing the lifespan of electronic equipment.

The perceived lack of responsiveness persists despite improvements in service innovation in the PLN Mobile app. According to some customers, authorities' response to the PLN Mobile service is reportedly very late. Furthermore, the information provided is inaccurate, and PT PLN's claims about the PLN Mobile service do not align with what customers receive. Furthermore, consumers feel that PLN Mobile is not achieving its stated goal of improving customer satisfaction. According to users of the service, the information provided is inconsistent, both in terms of scheduling and the information itself. Customers can only see their billing month when viewing their bill, not the total amount in Rupiah. Furthermore, information about power outages is only provided after the incident, which can lead to inefficiencies and misreporting. Some customers in the Binjai area and surrounding areas still experience difficulties using the PLN Mobile app, which is another drawback of the software itself. For whatever reason, some customers consistently enter the wrong reference code (error). Some users are still unable to register for the PLN Mobile app, making it inaccessible (Aminarti, 2024).

This research gap has been highlighted by several previous studies. According to Junnonyang's (2021) study, trust is a crucial factor in the adoption of M-government. Hamzah et al. (2021) found that trust has a positive and significant influence on customer satisfaction. Altay and Yaprakli (2024) found that trust has a positive influence on mobile banking customer satisfaction. Online trust has a positive and substantial influence on online customer satisfaction, according to a new study by Rahmawaty et al. (2021). Customer satisfaction is not influenced by trust, according to research by Meida, Astuti, and Nastiti (2022). Niazi, Sriyanto, and Chasan (2023) also failed to find a statistically significant relationship between trust and customer satisfaction. Suryani, Ermansyah, and Alsukri (2021) did not find a statistically significant relationship between trust and customer satisfaction. This research gap has been highlighted by several previous studies. Online buyer satisfaction is positively and significantly correlated with service quality, according to research by Rahmawaty et al. (2021). Lubis, Rini, and Sembiring (2021) found that high-quality e-services increase customer satisfaction, which aligns with our findings. Rahayu, Limakrisna, and Purba (2023) stated that e-service quality has a significant and positive impact on customer satisfaction. Four aspects of e-service quality identified by San, Von, and Qureshi (2020) as having a positive relationship with customer satisfaction are efficiency, fulfillment of needs, privacy, and system availability. Sasono et al. (2021) also found that customers are more satisfied with high-quality e-services. According to Khan, Zubair, and Malik (2019), e-service quality (E-SQ) is a key determinant of e-customer satisfaction (E-CS) and e-customer loyalty (E-CL), among other variables. Customer happiness and loyalty are significantly influenced by an organization's overall e-service quality, according to research by Puriwat and Tripopsakul (2017). When attempting to describe e-service quality, the three most significant factors are trustworthiness, reliability, and responsiveness. Efficiency, fulfillment, privacy, and contact are all aspects of e-service quality; However, research by Widya and Elisabet (2022) shows that these factors do not influence customer satisfaction. According to research by Çelik (2021), there is no significant and beneficial relationship between e-service satisfaction and qualitative characteristics of e-services, such as efficiency, privacy, and interaction.

Other previous studies that have indicated a research gap include those by Ayinaddis, Taye, and Yirsaw (2023), which demonstrated a significant influence of responsiveness, reliability, security and privacy, speed, and convenience on e-banking customer satisfaction. Qing et al. (2023) used the Servqual model, which includes five indicators: TAN, REL, RES, ASR, and EMP, to measure service quality as an independent factor. The findings suggest that each of the five metrics plays a role in enhancing customer satisfaction. Service quality has a positive and substantial impact on customer satisfaction, according to research by Add (2022) and Tandiono and Raymond (2020). Khan, Lima, and Mahmud (2021) found that customers were more satisfied with their mobile banking experience when four service quality features were present: responsiveness, empathy, assurance, and reliability. The extent to which a company can respond quickly determines how satisfied its customers are. Although Khan, Lima, and Mahmud (2021) attempted to demonstrate that tangible aspects of service quality do not impact customer satisfaction, they were unsuccessful. Service quality has a negligible impact on customer satisfaction, according to research by Kenala (2020). Tangible evidence,

responsiveness, and assurance are not significantly related to satisfaction, according to Balinado (2023).

2. Research Methods

Explanatory research is the main focus of this work. The purpose of explanatory research is to explain the nature and role of the variables studied (Sugiyono, 2019). The purpose of this study is to test the hypothesis by examining the relationship and influence of independent and dependent variables. To test the hypothesis, a structural equation model (SEM) is used. According to Ghazali (2018), a Structural Equation Model (SEM) is an equation model based on components and variance. Covariance-based Structural Equation Models are generally used to test theories or causality. The purpose of this study is to use structural equation modeling (SEM) to answer the question of how trust mediates the relationship between e-services and service quality and customer satisfaction.

3. Results and Discussion

The subjects of this study were PLN Customer Service Unit customers in Samboja District, Kutai Kartanegara Regency, household tariff category. From July 3, 2025, to July 15, 2025, one hundred responses were collected using a Google Form questionnaire sent online via WhatsApp. The data was then verified, and 100 responses were used because they met the respondent criteria, namely customers come in PLN Service Unit in Samboja District, Kutai Kartanegara Regency, uses PLN Mobile application for the last 6 months and make at least one transaction. After verification, 100 responses met the requirements for respondents. Therefore, the data used comes from the responses of 100 respondents.

Table Respondent Characteristics

Characteristics	Frequency (N=100)	Percentage (%)
Gender		
Man	51	51.0
Woman	49	49.0
Age		
<21 years	3	3.0
21-30 years old	44	44.0
31-40 years	43	43.0
41-50 years	6	6.0
51-60 years	4	4.0
Education		
SENIOR HIGH SCHOOL	20	20.0
D3	19	19.0
S1	58	58.0
S2	3	3.0
Work		

Self-employed	1	1.0
Private sector employee	62	62.0
State-Owned Enterprise Employees	21	21.0
civil servant	1	1.0
Other	15	15.0
PLN mobile application e-service quality display		
Interesting	97	97.0
Not attractive	3	3.0
PLN officers provide satisfactory service		
Yes	97	97.0
No	3	3.0
Trust the existence of PLN products		
Believe	98	98.0
Don't believe	2	2.0
Satisfied with the presence of PLN products		
Satisfied	95	95.0
Not satisfied	5	5.0

Based on the number of samples obtained, namely 100 It is known that 51.0% of PLN Customer Service Unit customers in Samboja District, Kutai Kartanegara Regency are male, this explains that men as heads of families are responsible for taking care of household needs, including paying electricity bills.

Age characteristics show that as many as 44.0% of users PLN Mobile application Customer Service Unit in Samboja District, Kutai Kartanegara Regency is 21-30 years old. This age group tends to be tech-savvy and actively uses digital applications for various purposes, including managing electricity bills and related services. PLN Mobile offers easy access to electricity services, such as bill payments, energy usage monitoring, and outage reporting, which aligns with the practical and digital lifestyle of the younger generation. Therefore, the 21-30 age group is an appropriate target for the promotion and development of the PLN Mobile application. Understanding the preferences and needs of this age group can help PLN increase app adoption and user satisfaction.

Characteristics of education level show that as many as 58.0% of users PLN Mobile application Customer Service Unit in Samboja District, Kutai Kartanegara Regency with a Bachelor's degree. This indicates that a Bachelor's degree is considered a higher education, so a Bachelor's degree plays a role in accessing the PLN Mobile application because this application is designed to facilitate customers in managing electricity services, which generally requires a basic understanding of digital technology.

Based on job characteristics, 62.0% of PLN Mobile app users at the Customer Service Unit in Samboja District, Kutai Kartanegara Regency, work in the private sector. This indicates

that the PLN Mobile app meets the needs of private sector employees who often rely on reliable electricity services, including bill checking, payments, and complaints.

97.0% of respondents evaluated the PLN Mobile app as having excellent e-service quality. Therefore, the e-service quality of the PLN Mobile app is defined as the effectiveness and efficiency of facilitating communication between the company and customers through digital channels. E-service quality is determined by usability, accessibility, aesthetics, data security, and clear and comprehensive content. Accessing and managing electricity services, including bill payments, customer complaints, and more, is simplified using the PLN Mobile app's user interface. According to respondents, the attractive e-service quality display of the PLN mobile application is shown from within the application. The color in the application is not too flashy, the appearance is attractive, easy to use, the appearance is modern and always updated, all the features that customers need are already in the PLN Mobile Application starting from complaints, disturbance complaints, new installation simulations and bill payments. The e-service quality display on the PLN Mobile application is designed to provide ease and comfort for users in accessing various electricity services digitally with a futuristic and modern appearance, easier to access, easy to get information, the PLN mobile application is very helpful in every transaction or everything related to PLN, the display is easy to understand, many image and description features that can facilitate reporting and searching for data that customers want.

Respondents rate PLN officers provided satisfactory service (97.0%). This indicates that customers are satisfied with the service provided by PT PLN (Persero) officers. This covers various aspects of service, from handling complaints and installing electricity to providing information. The success of this service can be seen from various factors such as response speed, officer friendliness, solutions provided, and officer reliability in resolving problems. According to respondents, customer satisfaction with service is a key factor. PLN officers are shown from fast disruption handling, PLN products are currently very good and almost never experience disruptions because they make it easier to provide services and transactions, the existence of PLN mobile makes customers closer to PLN such as information on discounts for new installations, power changes, and multipurpose, simplifying all electricity and internet networks, features that customers need are in the application. Overall, the level of customer satisfaction with PLN products is classified as very good, but there is still room for improvement, especially in terms of service responsiveness and application stability, such as applications can be slow or error when there is high traffic, there is a long response in certain locations that are black spots (lack of network signal support), and lack of digital education for customers who are not used to using applications.

Respondents are satisfied with the presence of PLN products (95.0%). Some of the reasons that make PLN customers satisfied include: Fast handling of disturbances, PLN products are currently very good and almost never experience disturbances, ease of service and transactions, the existence of PLN mobile makes customers closer to PLN such as information on discounts for new installations, power changes, and multipurpose, making it easier for all

electricity and internet networks, the features that customers need are in the application, the PLN mobile application really helps PLN customers to report complaints and electricity complaints.

Descriptive analysis aims to determine how people rate each question. Here, descriptive analysis explains consumer sentiment regarding satisfaction, trust, e-service quality, and service quality, which are the variables in question. This study uses a scale range with the following formula (Umar, 2017) to classify respondents into one score category based on their answers to each variable:

$$\text{Hospital} : \frac{\text{TT} - \text{TR}}{\text{Scale}}$$

Information

Hospital : Scale Range

TR : Lowest Score (1)

TT : Highest Score (5)

Based on the formula above, the scale range can be calculated:

$$\text{Hospital} : \frac{5 - 1}{3}$$

$$\text{Hospital} : 1.3$$

Thus the interval value can be explained as follows:

Low : 1 – 2.33

Currently : 2.34 – 3.67

Tall: 3.68 – 5.0

100 Responses PLN Customer Service Unit customers in Samboja District, Kutai Kartanegara Regency, household tariff group regarding e-service quality, service quality, customer trust, and customer satisfaction can be explained as follows:

1) *E-Service Quality*Table Description *E-Service Quality*

Code	Indicator	STS	TS	CS	S	SS	Total	Mean	Criteria
ESQ1	<i>Interface Design</i>	1	5	35	38	21	100	3.73	Tall
ESQ2	<i>Reliability</i>	0	14	31	23	32	100	3.73	Tall
ESQ3	<i>Responsiveness</i>	2	6	41	33	18	100	3.59	Currently
ESQ4	<i>Trust</i>	2	21	30	33	14	100	3.36	Currently
ESQ5	<i>Personalization</i>	0	14	8	36	42	100	4.06	Tall
Average total indicators								3.69	Tall

Table shows that the average respondent response regarding the quality of electronic services was 3.69 (high), which means that the majority of residents in Samboja District, Kutai Kartanegara Regency, in the household tariff group, who use the PLN Customer Service Unit, consider the service to be of high quality. The personalization indicator received the highest average score, namely 4.06, from respondents, indicating a high level of personalization. A large number of users have expressed confidence in the security of the PLN Mobile application. Then the response regarding *trust* obtained an average value of 3.36, which is the lowest indicator in the moderate category. This shows that customers feel the PLN Mobile application can be trusted.

2) *Service Quality*Table Description *Service Quality*

Code	Indicator	STS	TS	CS	S	SS	Total	Mean	Criteria
SQ1	<i>Tangibles</i>	0	3	23	45	29	100	4.00	Tall
SQ2	<i>Reliability</i>	0	1	14	51	34	100	4.18	Tall
SQ3	<i>Responsiveness</i>	1	1	19	37	42	100	4.18	Tall
SQ4	<i>Assurance</i>	0	2	16	44	38	100	4.18	Tall
SQ5	<i>Empathy</i>	0	14	13	37	36	100	3.95	Tall
Average total indicators								4.10	Tall

Table reveals that respondents generally agreed with the statements made regarding service quality in the questionnaire, with an average response of 4.10 (high). This shows that PLN Customer Service Unit customers in Samboja District, Kutai Kartanegara Regency, household tariff group rated service quality as high. Respondents' responses to the indicators *reliability*, *responsiveness*, *assurance* is the highest indicator with a mean value of 4.18 (high). This shows that customers feel PLN officers are able to resolve problems and complaints as promised, PLN officers respond quickly to customer complaints, and PLN officers guarantee that their duties are in accordance with SOP (standard operational procedures). Then the response regarding *empathy* obtained an average value of 3.95, which is the lowest indicator, but is in the high category. This shows that customers feel PLN officers always care (pay attention) to electricity service users.

The purpose of hypothesis testing in this situation is to validate or refute the researcher's initial assumptions about the relationship between variables. This step is crucial to ensure that the results obtained in quantitative research are not mere coincidence but rather reflect real relationships in the population being studied.

1) Direct Effect Hypothesis Test (Path Coefficient)

Path coefficients between latent variables need to be hypothesized by comparing the p-value with the t-statistic (>1.96) or alpha (0.05) to reveal the structural relationships between the variables. Using a bootstrapping procedure, p-values and t-statistics can be extracted from SmartPLS output.

Table Path Coefficient (Direct Effect)

			Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Note:
<i>E-Service Quality</i>	<i>Customer Trust</i>	->	0.420	0.422	0.095	4,422	0,000	Significant Positive
<i>Service Quality</i>	<i>Customer Trust</i>	->	0.369	0.373	0.095	3,894	0,000	Significant Positive
<i>E-Service Quality</i>	<i>Customer Satisfaction</i>	->	0.319	0.321	0.083	3,821	0,000	Significant Positive
<i>Customer Trust</i>	<i>Customer Satisfaction</i>	->	0.297	0.296	0.096	3,076	0.002	Significant Positive
<i>Service Quality</i>	<i>Customer Satisfaction</i>	->	0.277	0.276	0.098	2,840	0.005	Significant Positive

The following is an explanation of each of the five hypotheses proposed in this study, which can be seen based on the data presented in table above:

a. Influence *E-Service Quality* towards Customer Satisfaction

The hypothesis test yielded a P-value of 0.000, which is smaller than the 0.05 significance level, indicating that e-service quality impacts customer satisfaction. This result is positive because the initial sample value is 0.319 and the T-statistic value is 3.821, which is greater than 1.96. This finding supports the first hypothesis, which states that customer satisfaction is positively and significantly influenced by e-service quality. Specifically, customer satisfaction with the PLN application increases along with the quality of e-service provided.

b. Influence *Service Quality* towards Customer Satisfaction

The hypothesis test yielded a P-value of 0.005, which is less than 0.05, indicating that service quality does indeed influence customer satisfaction. A positive correlation exists, as the initial sample value of 0.2773 and the T-statistic of 2.840 are higher than 1.96. These results support the second hypothesis, which states that customer satisfaction is positively and significantly influenced by service quality. More specifically, citizen satisfaction with police services is directly proportional to service quality.

c. Influence *E-Service Quality* towards Customer Trust

Based on the results of the hypothesis test, there is a positive relationship between the quality of electronic services and consumer trust ($P\text{-value} = 0.000 < 0.05$, $T\text{-statistic} = 4.422 > 1.96$, and the original sample value = 0.420). The third hypothesis is supported by this study, which states that consumer trust in electronic services is closely related to the quality of those services. Therefore, if users trust PLN more, they tend to trust the mobile application more.

d. Influence *Service Quality* towards Customer Trust

Based on the results of the hypothesis test which showed positive results, the influence of service quality on customer trust is supported by a $P\text{-value}$ of $0.000 < 0.05$, a $T\text{-statistic}$ of $3.894 > 1.96$, and an original sample value of 0.369. Based on our data, customer trust in PLN is positively and strongly related to service quality, which supports the fourth hypothesis.

e. Influence *Customer Trust* towards Customer Satisfaction

With a $P\text{-value}$ of $0.002 < 0.05$, a $T\text{-statistic}$ value (3.076) > 1.96 , and an original sample value of 0.297 (positive), the hypothesis test shows that customer trust influences customer happiness. In accordance with the fifth hypothesis, this finding indicates that customers are more satisfied with PLN when they have a high level of trust in the organization.

2) Indirect Effect Test

To see the effect of the mediating variable, we use the results of the indirect effect. The following table shows the intervening effect.

Table Indirect Effect

Path Coefficient	Original sample (O)	T statistics	P values	Decision
<i>E-Service Quality</i> -> <i>Customer Satisfaction</i>	0.125	2,556	0.011	Able to Mediate
<i>Service Quality</i> -> <i>Customer Satisfaction</i>	0.110	2,184	0.029	Able to Mediate

Based on the data presented in the table above, it can be explained as follows:

a. Influence *E-Service Quality* towards Customer Satisfaction Mediated by Customer Trust

The indirect effect P value of 0.011 is lower than the threshold of 0.05, as confirmed by the $T\text{-statistic}$ value of 2.556 (greater than 1.96) and the positive original sample value of 0.125. Based on these results, consumer trust appears to moderate the relationship between e-service quality and customer satisfaction.

b. Influence *Service Quality* towards Customer Satisfaction Mediated by Customer Trust

The specific indirect impact P value is 0.029, which is less than 0.029, based on the T-statistic value of 2.184 (higher than 1.96) and the positive original sample value of 0.110. Based on these findings, service quality acts as a mediator between customer trust and customer satisfaction.

Discussion:

The direct influence in the research as the proposed hypothesis and research findings can be discussed as follows:

1) Influence *E-Service Quality* to wards Customer Satisfaction

The study findings show that e-service quality has a positive and significant impact on customer satisfaction. More specifically, the more users believe the PLN Mobile app is useful, the more positive their attitudes toward using it. in this case it isa comprehensive evaluation of the quality of service to customers using the PLN Mobile application.

E-service quality in the study was measured using five indicators which include: *interface design, reliability, responsiveness, trust, and personalization* (Puriwat and Tripopsakul, 2017). Interface design indicators in e-service quality influence user satisfaction with the PLN Mobile application. A good interface design can improve user ease of use, efficiency, and convenience when accessing PLN services through the application, which ultimately can increase user satisfaction. Reliability indicators also determine user satisfaction with the PLN Mobile application. If the PLN Mobile application is reliable and functions well at all times, without interruptions or errors, and can be relied upon to conduct transactions and access information, it can increase user satisfaction. The level of satisfaction felt by application users is influenced by responsiveness indicators in e-service quality. Responsiveness is how quickly, accurately, and successfully a service provider responds to customer questions, complaints, or demands. When users perceive that the service provider responds quickly and effectively, they tend to be more satisfied with their experience using the PLN Mobile application. Trust indicators in e-service quality do influence user satisfaction. A high level of trust in an application will result in more satisfied users, and a high level of trust in a service will result in more satisfied users. Data privacy in e-service quality indicators, which are related to personalization, can influence customer satisfaction. Ensuring the confidentiality of users' personal data will make them feel more comfortable and secure when using the application. Distrust of data security can cause users to be reluctant to interact further with the application. If an application is able to provide a personalized experience according to user preferences and guarantee the confidentiality of their data, user satisfaction tends to increase.

Research shows a positive correlation between the quality of e-services offered by a technology and the level of consumer satisfaction experienced when using that technology. In other words, if the quality of e-services meets the criteria of efficiency (ease of use), system availability (efficiency of applications), fulfillment (accuracy in fulfilling every promise to

consumers), and privacy (security guarantees for each user account), then this will create customer satisfaction.

Venkatakrishnan, Alagiriswa my, and Parayitam (2023) also found that e-service quality is positively correlated with customer satisfaction; therefore, our results align with theirs. Aspects of e-service quality, such as system availability, responsiveness, payment, and fulfillment of requirements, significantly influence the level of satisfaction experienced by service recipients, according to research by Çelik (2021). Consumer satisfaction with online businesses is influenced by the quality of service they receive, according to a study by Aferi and Yeni (2022).

2) Influence *Service Quality* to wards Customer Satisfaction

According to the study's findings, individual customer satisfaction is positively influenced by service quality. Customer satisfaction with the application correlates with service quality. Service quality assessment in this study was conducted by comparing actual service performance with customer expectations, then drawing conclusions about overall service quality. This evaluation also relies on consumers' emotional states and memories. Comparing the performance achieved with customer expectations for the PLN Mobile application is quite important in this context.

Five variables used to assess service quality are tangibles, dependability, responsiveness, assurance, and empathy (Zeithaml et al., 2002). Tangibles influence PLN customer satisfaction. The quality of physical facilities, equipment, supplies, and employee appearance, which are included in tangibles, can leave a positive or negative impression on customers, which ultimately affects customer satisfaction. PLN's ability to provide reliable service (reliability) can significantly affect customer satisfaction, including in handling customer complaints. If PLN is able to handle customer complaints quickly, accurately, and effectively, this will improve customer perceptions of the reliability of PLN's services and ultimately increase their satisfaction. The responsiveness indicator, or the ability to quickly respond to customer complaints, has an impact on PLN customer satisfaction. The more quickly and effectively PLN responds to customer complaints, the higher the level of customer satisfaction with the services provided. In the assurance indicator, PLN officers guarantee that their duties are in accordance with the SOP for customer satisfaction. PLN officers strive to provide the best service by adhering to the company's standard operating procedures (SOPs). This includes providing clear and accurate information, being friendly and empathetic, and providing solutions to customer complaints to ensure customer satisfaction. In the empathy indicator, when customers feel understood and appreciated, they tend to be more satisfied with the service or product they receive. Empathy in customer service creates a positive relationship between the customer and the company, which in turn increases customer satisfaction.

4. Conclusion

Based on the results of the research that has been carried out, it can be concluded that: There is a positive and significant relationship between e-service quality and customer satisfaction levels. It can be said that the higher the e-service quality, the higher the level of customer satisfaction with the use of the PLN Mobile application. There is a positive and statistically significant relationship between service quality and customer satisfaction. Customers are more satisfied with PLN staff when they receive high-quality service. Third, the public tends to trust the PLN Mobile app more if the electronic services they receive are high-quality. Customers tend to trust the app more if the quality of the electronic services is good. Customers tend to have more trust in PLN officers when they receive high-quality service. Customers who have the highest trust in PLN also tend to be the most satisfied with its services, indicating a positive and statistically significant correlation between the two.

5. References

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