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The Effect of Service Transformation on Customer Satisfaction at PT PLN (Persero) Distribution Master Unit of South Sumatra, Jambi, and Bengkulu

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Abstract---This study aims to analyse the effect of digital service transformation on customer satisfaction at PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit (UID S2JB). This transformation is realised through technology-based service innovations, such as the PLN Mobile application, which is designed to provide easy access, transparency, and responsiveness in services. This study uses a quantitative approach with a survey method through a questionnaire to 100 respondents who use the PLN Mobile application. The results of multiple linear regression analysis show that digital service transformation has a positive and significant effect on customer satisfaction. The coefficient of determination (R^2) of 0.588 indicates that 58.8% of the variation in customer satisfaction can be explained by the digital service transformation variable. These findings reinforce the importance of digitalisation as a key strategy in improving service quality and customer satisfaction in the electricity sector.

Keywords---Digital Service, Customer Satisfaction, Transformation.

Introduction

Technology now plays a vital role in supporting government activities and people's lives. Digital innovation is a trigger for the bureaucracy to continue to increase public trust (Lai et al., 2023). Along with the rapid development of technology, public awareness and expectations of government services are also getting higher. The public now not only receives services, but also actively assesses, criticises, and encourages the government, especially local governments, to support economic growth more optimally (Choi & Lee, 2022). To respond to these challenges, the government has started to implement the principle of "Digital Melayani", a technology-based approach to provide easier, faster, and more transparent services to the public. This initiative aims to accelerate access to services and encourage community involvement in economic development regions. Digital-based services have become a major necessity as well as a bridge that can bring the relationship between government and citizens closer.

In the 21st century, the term digitalisation has become closely associated with the development of industry and the world of information. Transformation efforts towards digital systems continue to be made to simplify and accelerate various service and business processes (Amanda & Indra, 2024). Digitalisation is a must for every business sector that wants to survive and thrive in the modern era (Syahbibibi & Hisan, 2023). In general, digitalisation refers to the process of switching from analogue technology to digital systems, triggered by technological advances and the need for efficiency in the industrial world. This change has a significant impact in accelerating operations and improving performance effectiveness in various sectors (Chwiłkowska-Kubala et al., 2023). With digitalisation, the utilisation of time and resources becomes more optimal, thus supporting the achievement of maximum profits. In addition, the digitisation process also aims to provide convenience for service or product users (Zubaidah & Afifah, 2020). This convenience is expected to increase customer satisfaction and loyalty, while sustainably encouraging higher transaction values.

PT PLN (Persero), as the main provider of electricity services in Indonesia, continues to face challenges in providing fast, transparent, and efficient services to the community. In the digital era that encourages increasing customer expectations, PLN responds by transforming digital-based services (Fadhilla et al., 2023). This transformation is an important turning point in improving the company's service system. Over the past three years, PLN's digitalisation efforts have yielded positive results and received widespread appreciation, as evidenced by the 46 awards won in the field of technology and digital innovation during 2022-2023. This major change cannot be separated from the role of all PLN employees, government support, and the strong leadership of PLN President Director Darmawan Prasodjo, who was also honoured as the best CEO in the field of digital development (PLN, 2023).

PT PLN (Persero) is a state-owned electricity company that continues to commit and innovate to carry out a big mission to illuminate and move the country. With a vision to become the leading electricity company in Southeast Asia, PLN moves to become the number one choice of customers for Energy Solutions. PLN carries the Transformation agenda with Green, Lean, Innovative, and Customer Focused aspirations to bring electricity for a Better Life. PLN can be contacted through the PLN Mobile application available on PlayStore or AppStore (web.pln.co.id, 2024).

Table 1
Number of Customers in PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit in 2023

PLN Unit / Province	Household	Industry	Business	Social	Gdg. Government Office	Public Street Lighting	Total	(%)
UID Aceh	1.483.479	4.236	165.516	55.282	12.904	2.944	1.724.360	1,93
UID North Sumatra	4.185.942	5.114	159.835	82.040	11.482	18.308	4.462.721	5,01
UID West Sumatra	1.446.887	765	192.468	41.426	6.906	4.727	1.693.179	1,90
UID Riau and Riau Islands	2.230.728	909	209.833	51.743	9.715	6.851	2.509.779	2,82
- Riau	1.936.633	763	179.138	45.086	7.130	5.096	2.173.846	2,44
- Riau Islands	294.095	146	30.695	6.657	2.585	1.755	335.933	0,38
UID South Sumatra, Jambi, and Bengkulu	4.041.827	3.736	143.143	82.505	15.746	13.957	4.300.914	4,82
- South Sumatra	2.356.358	2.725	65.486	44.448	7.626	7.962	2.484.605	2,79
- Jambi	1.067.285	829	56.581	25.644	4.837	4.864	1.160.040	1,30
- Bengkulu	618.184	182	21.076	12.413	3.283	1.131	656.269	0,74

Source: web.pln.co.id, 2024

Table 1 shows the number of customers at PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit in 2023 with categories of households, industry, business, social, government office buildings, and public street lighting. UID South Sumatra, Jambi, and Bengkulu showed a total of 4,300,914 customers with a percentage of 4.82%. South Sumatra shows a total of 2,484,602 customers with a percentage of 2.79%. Jambi shows the number of

customers amounting to 1,160,040 customers with a percentage of 1.30%. Meanwhile, Bengkulu province shows the number of customers amounting to 656,269 customers with a percentage of 0.74%.

One tangible form of this transformation is the renewal of the PLN Mobile application. Previously less popular, the app has now been transformed into a *one-stop* service that answers various customer needs, from electricity to internet services. This application has increased the number of downloads to 39 million with a rating of 4.9, making it one of the best public service applications in Asia. Not only from the customer side, PLN's digital transformation also touches internal operational aspects, such as the procurement of goods and services, electricity systems, and financial management. The presence of systems such as *Cash War Room* helps PLN monitor cash flow and transactions accurately, improving efficiency, accountability, and transparency. Through this digital transformation, PLN has succeeded in accelerating the service process to improve the quality of service to the community (Hidayah & Prabowo, 2024; Yudhistira, 2024).

Although PT PLN (Persero) has carried out digital service transformation as an effort to improve its services, the success of this step cannot be fully assessed without clear indicators, one of which is the level of customer satisfaction. Customer satisfaction is an important element that reflects the extent to which the company is able to meet the needs and expectations of the community in terms of service quality, reliability of electricity supply, ease of access to information, and speed of response to complaints. Therefore, it is important to assess the extent to which the digital service transformation that has been implemented by PLN really has an impact on customer satisfaction, especially in the South Sumatra, Jambi, and Bengkulu (S2JB) Distribution Unit (UID) area.

PLN's digital transformation is not only an adaptive step to technological developments, but also part of a national strategy to accelerate the modernisation of public services. Through the "PLN Transformation towards *Digital Utility*" programme, the company emphasises four main pillars, namely *Green, Innovative, Customer Focused*, and *Lean*. In terms of customer satisfaction indicators, the *Customer Focused* pillar is particularly relevant as it emphasises the importance of orientation towards customer needs and convenience. Therefore, the success of this digital transformation should not only be measured by the number of features or innovations presented, but also by the extent to which these innovations can increase customer satisfaction, trust, and loyalty in operational areas such as South Sumatra, Jambi, and Bengkulu (Ramahdani & Putri, 2023).

The main focus of this research is to analyse the effect of digital service transformation on the level of customer satisfaction at PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit (UID S2JB). The digital service transformation that is the object of this research is part of PLN's strategic steps in realising more modern, fast, and integrated technology-based public services. One tangible form of this transformation is the presence of the PLN Mobile application and other digital systems designed to make it easier for customers to access electricity information, make complaints, and monitor electricity usage independently. The ease of use aspect is one of the important dimensions reviewed in this study, including the clarity of digital service features, the speed of the system in responding to customer needs, easy-to-understand application navigation, and a user-friendly interface. All of these elements are seen as contributing to the formation of customer perceptions of digital provided by PLN. Through this research, it is expected to obtain a comprehensive picture of the extent to which PLN's digital services are able to meet customer expectations and provide strategic recommendations for the development of service innovations that are more effective and oriented towards increasing customer satisfaction in the S2JB region on an ongoing basis.

Method

The population in this study is all customers of PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit who have used the PLN Mobile application. Based on the number of PLN Mobile users of PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit in 2023 as many as 4,019,431 users. Then the number of samples used in this study was 100 respondents. The data collection method was carried out using the Questionnaire method, which is a data collection method carried out by providing a list of statements or questions (questionnaires) to respondents with a guide to answer choices. In this study, the results obtained from questionnaire answers using a Likert scale are ordinal data. For the data to be statistically analysed, the data must be converted into intervals. The *method* used is the *method of successive* (MSI), which is a scaling method to raise the ordinal measurement scale to the interval measurement scale (Sedarmayanti, 2017).

Result and Discussion

Normality Test Results

Table 2
One-Sample Kolmogorov-Smirnov Test

		Unstandardised Residual
N		100
Normal Parameters	Mean	.0000000
	Std. Deviation	.88779997
Most Extreme Difference	Absolute	.060
	Positive	.053
	Negative	-.060
Kolmogrov-Smirnov Z		.060
Asymp. Sig. (2-tailed)		.132

Data Source: Processed from Questionnaire, 2025

Based on the normality test results in the table, it shows that the data is normally distributed. This is indicated by the *Kolmogorov-Smirnov* test, which shows results that have a significance level of 0.132, which is above 0.05.

Multiple Linear Regression Analysis Results

Multiple linear regression analysis was performed to determine the effect of digital service transformation variables (X1) (X2) on customer satisfaction (Y). Based on the test results obtained as follows:

Table 3
Multiple Linear Regression Analysis Results

Model	Coefficients			
	Unstandardised Coefficients	Std. Error	Standardised Coefficients	Sig.
1	B		Beta	
	Constant	3.385	.553	
	Digital Service Transformation	.489	.087	.398
				.000

Data Source: Processed from Questionnaire, 2025

Based on this table, the results of multiple linear regression analysis can be expressed by the following equation:

$$Y = 3,385 + 0,489X1 + e$$

The linear regression equation above can be explained as follows:

- 1) The constant value shows a positive value with value of 3.385. This shows that customer satisfaction is considered without the influence of digital service transformation; the magnitude of the customer satisfaction variable is 3.385.
- 2) The regression coefficient value of the digital service transformation variable of 0.489 with a value of t_{hitung} of 3.982 states that digital service transformation has a positive effect on customer satisfaction. This shows that the higher the digital service transformation carried out, the positive impact will be the higher the customer satisfaction at PT PLN Unit Induk Distribusi South Sumatra, Jambi, and Bengkulu.

Test Results of Correlation Coefficient (r) and Coefficient of Determination (R²)

Table 4
Correlation Coefficient Test Results (r) and Coefficient of Determination (R²)
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788	.588	.622	.84566

Data Source: Processed from Questionnaire, 2025

Based on the *summary model output* in the table, the results of the correlation coefficient test (r) show that the magnitude of the influence of the digital service transformation variable on customer satisfaction is 0.798 or 78.8%. The magnitude of the R-squared number (R²) is 0.588 or 58.8%. This figure is used to see how digital service transformation affects customer satisfaction at PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit. This figure shows how the digital service transformation variable shows what factors can affect customer satisfaction, and together by 58.8% while the remaining 41.2% is influenced by other factors.

Hypothesis Test

T Test Results

The t test aims to determine how much influence the independent variables individually have on the dependent variable. This study with a significance of 5% or $\alpha = 0.05$. The t-test results can be seen in the table as follows:

Table 5
t Test Results

Model	Coefficients			
	Unstandardised Coefficients	Std. Error	Standardised Coefficients	Sig
1	B		Beta	
	Constant	3.385	.553	
	Digital Service Transformation	.489	.087	.398
				.000

Data Source: Processed from Questionnaire, 2025

Based on the results of the analysis calculations in the table, it can be explained that the digital service transformation variable (X1) has a beta value of 0.489 with a significant value of 0.000, which is smaller than 0.05. This shows that the digital service transformation variable has a positive and significant effect on customer satisfaction at PT PLN (Persero) South Sumatra Distribution Unit, Jambi. This shows that the digital service transformation variable has a positive and significant effect on customer satisfaction at PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit. This proves that the first hypothesis on the digital service transformation variable has a positive and significant effect can be accepted.

Discussion

The Effect of Digital Service Transformation on Customer Satisfaction at PT PLN (Persero) Distribution Unit of South Sumatra, Jambi, and Bengkulu

Digital transformation has a significant influence on customer satisfaction. Some studies show that if an application or system is easy to use, customers tend to feel satisfied and are more interested in continuing its use. For example, a study conducted by Al-Shorman et al. (2021), in the telecommunications industry in the United Arab Emirates showed that there is a strong correlation between customer expectations, customer experience, and satisfaction levels in the use of digital solutions. This study uses a quantitative approach with regression analysis and exploratory component analysis of 130 respondents, and the results are consistent with *Expectancy-Disconfirmation and Evaluation Congruity* theories, which assert that digital experiences that match customer expectations contribute

directly to high levels of satisfaction, regardless of generational differences. The findings support the importance of digital service transformation as a key factor in building customer satisfaction.

Research conducted by Wakhidah et al. (2025), also reinforces the view that digital transformation has a major influence on customer satisfaction and loyalty, especially in the banking sector. Through a literature review, they found that the application of digital technologies such as mobile banking applications and artificial intelligence (AI) can increase customer satisfaction through ease of access, security, and personalisation of services. Furthermore, the quality of convenient and memorable digital interactions is considered to play an important role in building customer loyalty. These findings show that digital innovation that focuses on user experience not only improves operational efficiency but is also key in creating long-term relationships between companies and customers (Zhang et al., 2023).

Research by Perven (2024), confirms that digital transformation also plays an important role in improving customer experience and satisfaction, especially in the fashion industry. Through the application of technologies such as Artificial Intelligence (AI), Augmented Reality (AR), virtual try-ons, virtual assistants, and chatbots, fashion companies are able to deliver a more interactive and personalised shopping experience for customers. The research shows that digitalisation of services can drive customer engagement and create higher satisfaction, especially through personalised product recommendations and streamlined services (Irwan & Nurmala, 2023). Perven's findings also reveal that digital technology not only increases momentary satisfaction but also contributes to brand loyalty and repeat purchase decisions. Although its implementation faces challenges such as resource constraints and organisational resistance, the results of this study confirm that digital transformation is a strategic step that industry players must take to survive and excel in the digital era (Feliciano-Cestero et al., 2023).

Conclusion

Based on the results of the research conducted, it can be concluded that the digital service transformation implemented by PT PLN (Persero) South Sumatra, Jambi, and Bengkulu Distribution Unit has a positive and significant effect on customer satisfaction. This transformation, especially through the use of the PLN Mobile application, has succeeded in improving ease of access, service efficiency, and user convenience. Regression test results show that digital service transformation contributes 58.8% to variations in customer satisfaction, while the rest is influenced by other factors. Thus, digitalisation has proven to be one of the keys to success in improving service quality and building customer loyalty in the modern era. Companies are advised to continue to innovate in improving digital services to maintain and increase customer satisfaction levels on an ongoing basis.

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