The Influence of Perceived Benefits, Perceived Ease of Use, and Service Features on Customer Satisfaction with the Use of the PLN Mobile Application at PT PLN (PERSERO) UP3 Palembang

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ABSTRACT

The research objective is specifically to determine the influence of the variables Influence of Perceived Benefits, Perceived Convenience, and Service Features on Customer Satisfaction (Case Study on Using the PLN UP3 Palembang Mobile PLN Application)." partially or simultaneously. The research method uses questionnaire, interview and documentation techniques. The sample of this research was 80 employees on Customer Satisfaction (Case Study on the Use of the PLN Mobile PLN UP3 Palembang Application). Data processing used SPSS 23 analysis. Testing the data using the t test, that research had an effect on Perception of benefits with t table $0.909 <$ t count 1.992, Perception of convenience on customer satisfaction with t table $-1.851 >$ t count 1.992, and Service features on customer satisfaction with t table $32,212 >$ t count $1,992$ and Perception of Benefit, Perception of Convenience, and Service Features on Customer Satisfaction with F table $6,0304 <$ F count $1,992$, the common thread of research is that the Influence of Perception of Benefit, Perception of Convenience, and Service Features on Customer Satisfaction requires improving service quality, conducting training for employees and always paying attention to product quality both in terms of service and quality so that customers remain loyal and continuously use the application

Keywords: Perceived Benefits, Perceived Convenience, Service Features, Customer Satisfaction.

INTRODUCTION

The balance of digital technology has brought significant changes in various sectors, including the public service industry. Digitalization has become one of the main strategies to improve service quality, operational efficiency, and customer satisfaction. PT PLN (Persero), as the leading electricity service provider in Indonesia, is also part of this digitalization trend. In its efforts to provide convenience for customers, PLN launched the PLN Mobile application as a platform to access various electricity services online, such as purchasing electricity tokens, bill payments, reporting outages, and submitting applications for installations and electrical capacity changes.

However, despite the PLN Mobile application offering various benefits for customers, the adoption rate and customer satisfaction with this application still pose significant challenges. According to an interview with the General Manager of Customer Service Marketing at PLN UP3 Palembang, only 32% of customers actively use the PLN Mobile application, while 64% still prefer to use the Call Center 123 service, and the remaining 4% use other media to obtain information and make complaints. This condition indicates that the majority of customers are reluctant to switch to digital services, even though the PLN Mobile app is available and constantly updated with new features. As a result, calls to Call Center 123 remain high, and the resolution of complaints and outages is not effective or efficient for both customers and PLN staff.

According to Kotler & Keller, customer satisfaction greatly depends on customers' perceptions and expectations of a product or service. In this context, there are three main factors that influence customer satisfaction in using the PLN Mobile application: perceived benefits, perceived ease of use, and service features (Kotler & Keller, 2020). Perceived benefits refer to how much customers feel the PLN Mobile application provides better advantages compared to conventional methods in accessing PLN services (Rahmatsyah, 2015). Perceived ease of use relates to how easy customers find the application to understand and use without significant technical barriers (Davis, 2017). Meanwhile, the service features available in the application play a role in enhancing the customer experience and differentiating the PLN Mobile application from other service methods (Kotler, 2020).

According to data from PT PLN (Persero), the use of the PLN Mobile application has increased year by year, with more than 35 million users and a satisfaction rate of 4.8 out of 5 on the Play Store (Trianto, 2022). However, at the regional level, such as PLN UP3 Palembang, adoption of this application has not reached its maximum potential. Data shows that the target number of PLN Mobile app users in PLN UP3 Palembang in 2023 has not been met within several months. For example, in January, the target was 3,000 users, but only 2,551 users were achieved. Meanwhile, in December, of the target of 100,000 users, only 88,215 users successfully adopted the app. This discrepancy between the target and actual

results indicates obstacles in increasing the adoption of the PLN Mobile application among customers in this region.

Several studies have discussed the impact of various factors on customer satisfaction in using digital applications. Research by Meiyrilliana Puirba & Arifin indicates that perceived benefits and ease of use have a significant impact on customer satisfaction in using digital financial applications (Meiyrilliana Puirba & Arifin, 2020). Similar findings are confirmed in studies by Widiyawati, which state that complete and innovative service features can enhance customer satisfaction with digital applications such as Go-Pay (Widiyawati, 2022). Meanwhile, research by Salsabila reveals a positive and significant relationship between service features, the security of these features, and customer trust regarding satisfaction with the digital payment application DANA (Salsabila, 2024).

Although numerous studies have been conducted on the impact of perceived benefits, perceived ease of use, and service features on customer satisfaction in various business sectors and digital services, there are still some gaps in research that need to be explored further in the context of the PLN Mobile application. Most previous research has focused more on e-commerce or financial service sectors, with less attention paid to utility and public services, such as PLN. Furthermore, few studies comprehensively examine how these three factors interact with each other to influence customer satisfaction with the PLN Mobile application.

This phenomenon underscores the importance of understanding how perceived benefits, perceived ease of use, and service features can influence customer satisfaction in using the PLN Mobile application. This understanding is essential for PLN in developing strategies to improve digital service quality and optimize the adoption of the PLN Mobile application among customers. Therefore, this study aims to analyze the impact of perceived benefits, perceived ease of use, and service features on customer satisfaction with the PLN Mobile application and provide deeper insights into the factors influencing the customer experience.

Through this research, it is expected to provide contributions to the development of PLN's digital service strategies and offer recommendations to help improve customer satisfaction and optimize PLN Mobile services in the future.

LITERATURE REVIEW

Consumer Behavior Theory

Consumer behavior is a process closely related to the purchasing process, during which consumers engage in various activities such as searching, researching, and evaluating products (Indrasari, 2019).

Customer Satisfaction Theory

According to Indrasari, customer satisfaction is the level of a consumer's feelings after comparing what they receive with what they expect. When a customer feels satisfied with the value provided by a product or service, there is a high probability that they will remain loyal for a long time (Indrasari, 2019).

Perceived Usefulness

Perceived usefulness refers to the process by which consumers select, organize, and interpret input information to form a meaningful picture of the world. Consumers process various types of information through sight, sound, smell, taste, and touch (Philip Kotler, 2020).

Perceived Ease of Use

Ease of use, according to Davis (2017), is defined as the degree to which a person believes that using a technology will be free of mental and physical effort. An individual may find a system difficult to use even though they believe the system is beneficial.

Service Features

Serwvice features are a competitive tool used to differentiate a company's product from its competitors. Meanwhile, service is defined as an activity or benefit that one party can offer to another, which is essentially intangible and does not result in ownership of anything (Philip Kotler, 2020).

RESEARCH METHODS

This study aims to examine the influence of perceived usefulness, perceived ease of use, and service features on customer satisfaction in the use of the PLN Mobile application at PT PLN (Persero) UP3 Palembang. This chapter outlines the research design, limitations, variable identification, participants and setting, measurement, data collection techniques, and data analysis methods applied in the research.

Research Design

This research adopts a quantitative approach with a survey method. The study employs a descriptive-verificative design, which aims both to describe theexisting phenomena and to test the relationships among predetermined variables. The respondents in this study are customers of PT PLN (Persero) UP3 Palembang who actively use the PLN Mobile application. Data were collected using structured questionnaires and analyzed using statistical techniques to test the research hypotheses.

Research Limits

This study is subject to several limitations. First, it is geographically limited to customers within the operational area of PT PLN (Persero) UP3 Palembang, which restricts the generalizability of the

findings to other regions or institutions. Second, the research only investigates three independent variables: perceived usefulness, perceived ease of use, and service features, along with one dependent variable, namely customer satisfaction. Third, the study uses cross-sectional data, meaning the data were collected at a single point in time, specifically between July and December 2024.

Variable Identification

This study includes one dependent variable and three independent variables. The dependent variable (Y) is customer satisfaction, which reflects the level of satisfaction experienced by users after using the PLN Mobile application. The independent variables (X) are: perceived usefulness (X1), which refers to users' subjective assessment of the application's benefits; perceived ease of use (X2), which represents theextent to which users find the application easy to use; and service features (X3), which relate to the completeness, functionality, and attractiveness of the features offered in the application.

Participants and Setting

The population of this study comprises all registered customers under PT PLN (Persero) UP3 Palembang, totaling 80 individuals across 7 Customer Service Units (ULPs). Due to the manageable population size, the study uses total sampling, including all 80 individuals as respondents. The research was conducted at the PT PLN (Persero) UP3 Palembang office, located at Jl. Kapten A. Rivai No. 37, Palembang, South Sumatra. The study period spanned from July to December 2024, beginning with proposal preparation, followed by observation, questionnaire distribution, data processing, and report writing.

Measurement

Data Colletion

Data collection in this study employed two primary methods: observation and questionnaires. Direct observation was conducted to gain insights into customer behavior and usage patterns of the PLN Mobile application. Meanwhile, structured questionnaires were distributed to respondents to gather quantitative data related to their perceptions. The questionnaires were developed based on specific indicators for each variable and utilized a Likert scale to measure responses.

Data Analysis

The collected data were analyzed using quantitative methods with the help of SPSS software. The analysis included several stages: validity and reliability testing to ensure the instrument's accuracy and consistency, followed by assumption testing such as normality, multicollinearity, and heteroscedasticity. The main analysis was conducted using multiple linear regression to examine the effect of the

independent variables on customer satisfaction. The t-test was used to assess the partial effect of each independent variable, while the F-test evaluated their simultaneous influence. The coefficient of determination (R^2) was used to determine the extent to which the independent variables could explain variations in the dependent variable.

RESULTS

Hypothesis Testing Results

Partial Test (t-Test)

The partial test, or t-test, is conducted to determine whether each independent variable individually has a significant effect on the dependent variable. This study uses a significance level of 5% ($\alpha = 0.05$), which means the findings are considered statistically significant and can be generalized to the population if the p-value is less than 0.05.

Table 1

Partial Test (t-Test) Results

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-.948	.673		-1.409	.163
Perceived Usefulness	.027	.030	.027	.909	.366
Perceived Ease of Use	-.050	.027	-.056	-1.851	.068
Service Features	.887	.028	.997	32.212	.000

Based on the t-test results, the variable Perception of Benefits (PB) with a t-table value of 0.909, which is smaller than the t-critical value of 1.992, indicates that this variable has no significant effect on customer satisfaction. Therefore, H0 is accepted, and Ha is rejected. Meanwhile, the variable Perception of Convenience (PC) with a t-table value of -1.851, which is also smaller than the t-critical value of 1.992, also indicates no significant effect on customer satisfaction. Therefore, H_0 is accepted, and Ha is rejected. On the other hand, the variable Service Features (SF) with a t-table value of 32.212, which is much larger than the t-critical value of 1.992, indicates that this variable has a significant effect on customer satisfaction. Therefore, H_0 is rejected, and Ha is accepted.

Simultaneous Test Results or F-Test

Table 2. Simultaneous Test Results

ANOVA[a]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	423.756	3	141.252	6.0304	.000[b]
	Residual	17.794	76	.234		
	Total	441.550	79			

From the F-test results in the table above, it shows a significant result with a t-value of 6.0304, which is greater than the t-critical value of 1.992. This means that H_0 is rejected, and Ha is accepted. Therefore, it can be concluded that there is a positive and significant effect of Perception of Benefits and Perception of Convenience on Customer Satisfaction, while the effect of Service Features on Customer Satisfaction is positive but not significant.

DISCUSSION

The Effect of Perception of Benefits (PB) on Customer Satisfaction (CS)

The hypothesis testing results (t-test) indicate a significant value between the variable Perception of Benefits (PB) and Customer Satisfaction (CS) of 0.000 < 0.5. This means that, partially, there is a significant effect of Perception of Benefits (PB) on Customer Satisfaction (CS). Therefore, the research hypothesis stating that there is a significant effect of Perception of Benefits (PB) on Customer Satisfaction (CS) at PT PLN (Persero) UIP3 Palembang can be accepted.

This is in line with research by Reina Deiliyana which showed the effects of Perception of Convenience, Perception of Security, and Perception of Trust on Customer Satisfaction in the use of BCA Mobile Banking. The study found that Perception of Security and Perception of Trust positively and significantly affected customer satisfaction, while Perception of Convenience had a positive but non-significant effect on customer satisfaction (Reina Deiliyana, 2022).

In contrast, research by Meiyriliana Puirba & Arifin explored theeffects of Perception of Convenience, Perception of Benefits, and Trust on Satisfaction and the Intention to Use the OVO application among Postgraduate Students at the University of Riau. In this study, the variables studied were Perception of Convenience, Perception of Benefits, and Trust. The results showed that these variables had a significant effect on customer satisfaction (Meiyriliana Puirba & Arifin, 2020).

The Effect of Perception of Convenience (PC) on Customer Satisfaction (CS)

The hypothesis testing results (t-test) indicate a significant value between the variable Perception of Convenience (PC) and Customer Satisfaction (CS) of 0.000 < 0.5. This means that, partially, there is a significant effect of Perception of Convenience (PC) on Customer Satisfaction (CS). Therefore, the

research hypothesis stating that there is a significant effect of Perception of Convenience (PC) on Customer Satisfaction (CS) at PT PLN (Persero) UIP3 Palembang can be accepted.

This is consistent with research by Nuir Malia (2020), which studied the effects of Perception of Benefits and the Benefits of Using the OVO Application on Consumer Satisfaction. In this study, it was found that both Perception of Benefits and the Benefits of Using the OVO Application had significant effects on consumer satisfaction.

Meanwhile, research by Nabilatuil Aqliyah (2023) examined the effects of Perception of Trust and Perception of Convenience on Customer Satisfaction of Users of the Dana application among students of the Economics Faculty at the University of Merdeka Pasuruan. The results of this study showed that Perception of Trust and Perception of Convenience together contributed 36% to customer satisfaction, while 64% of the influence came from other variables.

The Effect of Service Features (SF) on Customer Satisfaction (CS)

The hypothesis testing results (t-test) indicate a significant value between the variable Service Features (SF) and Customer Satisfaction (CS) of $0.000 < 0.5$. This means that, partially, there is a significant effect of Service Features (SF) on Customer Satisfaction (CS). Therefore, the research hypothesis stating that there is a significant effect of Service Features (SF) on Customer Satisfaction (CS) at PT PLN (Persero) UIP3 Palembang can be accepted.

This is supported by the research of Salsabila Puitri Adista (2024), which examined the effects of Service Features, Security of Service Features, and Customer Trust on Satisfaction of Dana Application Users. The study found that there was a positive and significant effect of Service Features, Security of Service Features, and Customer Trust on customer satisfaction.

Additionally, research by Nyimas Artina on theeffects of Perception of Benefits, Perception of Convenience, Trust, and Service Features on Customer Satisfaction in using E-Money in Palembang City found that all these factors positively and significantly affected customer satisfaction (Nyimas Artina, 2021).

The Effect of Perception of Benefits (PB), Perception of Convenience (PC), and Service Features (SF) on Customer Satisfaction (CS)

The simultaneous F-test results showed a significant value of $0.000 < 0.05$ for the combined effect of Perception of Benefits (PB), Perception of Convenience (PC), and Service Features (SF) on Customer Satisfaction (CS). Therefore, it can be concluded that there is a significant effect of Perception of Benefits (PB), Perception of Convenience (PC), and Service Features (SF) on Customer Satisfaction (CS) at PT PLN (Persero) UIP3 Palembang.

CONCLUSION

Based on the research results and discussion, it can be concluded that the factors influencing the intention to use the PLN Mobile Application continuously at PLN UIP3 Palembang include the perception of benefits, convenience, and service features. If users feel that the application is beneficial, they will feel satisfied, have a positive attitude while using it, and will likely continue using it without switching to other applications. Moreover, the perception of convenience also significantly affects the perception of benefits, where theeasier the application is to use, the greater the benefits users feel. However, service features have a positiveeffect but are not significant in affecting public satisfaction in using the PLN Mobile Application.

SUGGESTION

Based on the conclusions outlined, the following recommendations can be made: the company should improve the quality of services by updating materials and providing facilities that make it easier for customers to understand the product more clearly. Additionally, training should be provided for customer service staff to prepare them better in handling customer concerns and assuring them that they have the skills to help resolve any issues. This training should also aim to enhanceefficiency in delivering services that meet customer needs. Furthermore, the company is expected to continue paying attention to product quality, both in terms of service and functionality, so that customers remain loyal and continue using the application consistently.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Amrina Rosyada is responsible for conceptualization, data curation, formal analysis, funding acquisition, investigation, project administration, resources, software, validation, visualization, original draft writing, and review &editing. Juhaini Alie contributed to conceptualization, supervision, validation, and review & editing.

DECLARATION OF COMPETING INTEREST

The author declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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DATA AVAILABILITY

Data will be made available in request.

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ETHICAL APPROVAL

No patient-identifying parts in this paper were used or known to the authors. Therefore, no ethical approval was requested.

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