



Customer Satisfaction with PLN Mobile Application at PT PLN (Persero) ULP Samarinda Ilir: A Qualitative Study

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Article Info :

Received:

20-06-2026

Revised:

28-06-2026

Accepted:

01-07-2026

Abstract

PLN Mobile is a digital service platform developed by PT PLN (Persero) to facilitate customer access to electricity services, including bill payments, token purchases, service requests, and complaint handling. Despite supporting the company's digital transformation, users continue to experience system instability, slow response times, login failures, and limited responsiveness of complaint features. This study aims to analyze customer satisfaction with the PLN Mobile application among users of PT PLN (Persero) ULP Samarinda Ilir by examining perceived usefulness, ease of use, system quality, and service quality. A qualitative case study approach was employed. Data were collected through in-depth interviews, observations, and documentation involving 15 customers selected using purposive sampling. Data were analyzed using the Miles and Huberman interactive model and thematic coding. The findings indicate that users are generally satisfied with PLN Mobile, with perceived usefulness emerging as the strongest determinant of satisfaction due to its convenience, time efficiency, and accessibility. However, system quality remains the primary challenge because of application errors, slow performance, and login disruptions. The study concludes that while PLN Mobile provides substantial functional benefits, improvements in system reliability, complaint responsiveness, and feature optimization are essential to enhance customer satisfaction and encourage sustained application use.

Keywords: *Customer satisfaction, Digital service, PLN Mobile, Service quality, System quality.*



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INTRODUCTION

The rapid evolution of digital technologies has fundamentally transformed the manner in which organizations design, deliver, and evaluate services, shifting digitalization from a purely technological initiative toward a strategic organizational transformation that reshapes operational processes, customer interaction mechanisms, and long-term value creation. Digital transformation within service organizations is increasingly understood as an organizational capability that integrates technological innovation with structural and managerial change in order to enhance responsiveness and customer-centered service delivery (Fathya et al., 2023). Rather than functioning solely as an instrument for operational efficiency, digital platforms have become strategic interfaces through which organizations cultivate customer experiences, establish trust, and sustain competitive advantage across both private and public sectors (Hassan, 2024). In public utility industries, the significance of digital transformation is even more pronounced because customers increasingly expect services that are accessible, transparent, responsive, and continuously available regardless of geographical or temporal constraints (Makasiahe et al., 2024). These expectations require public service providers to redesign conventional service models by integrating digital applications capable of supporting real-time communication, transaction processing, and problem resolution through mobile-based technologies (Haq, 2022). The introduction of mobile service platforms has consequently altered the criteria through which service performance is evaluated, emphasizing not only operational efficiency but also users' subjective experiences throughout the digital service journey (Ingaldi, 2022). Such developments indicate that the success of digital transformation within public utilities cannot merely be assessed through technological adoption rates but must also be understood through customers' perceptions regarding the quality and reliability of digital services. This perspective becomes increasingly important because sustainable digital transformation ultimately depends on customers' willingness to continuously engage with digital platforms as their primary service channels.

Customer satisfaction has consequently emerged as one of the most significant indicators for evaluating the effectiveness of digital transformation initiatives because it reflects customers' comprehensive assessment of service performance after interacting with digital systems. Recent literature consistently demonstrates that satisfaction within digital environments is not determined solely by service availability but is simultaneously influenced by system quality, service quality, perceived usefulness, usability, and accumulated user experience during repeated interactions (Yum & Yoo, 2023). System quality constitutes a fundamental determinant because application stability, response speed, accessibility, interface consistency, and technical reliability directly influence users' ability to complete intended tasks without interruption (Febrianti et al., 2023). The quality of electronic services further extends beyond technical performance by incorporating organizational responsiveness, transaction reliability, complaint resolution, privacy protection, and communication effectiveness throughout the service process (Beanning & Zulkarnain, 2024). Empirical evidence from mobile commerce and digital payment services likewise demonstrates that superior e-service quality substantially enhances customer satisfaction while simultaneously encouraging customer loyalty and favorable electronic word-of-mouth behavior (Hijazi et al., 2023). Similar conclusions have also been reported within Indonesian digital service contexts, where perceived usefulness and perceived ease of use continue to represent central determinants influencing users' acceptance and subsequent satisfaction toward mobile applications (Handayani & Prahartiwi, 2024). Contemporary studies integrating the Technology Acceptance Model and the DeLone and McLean Information Systems Success Model further suggest that technological acceptance, system performance, and service quality should be interpreted as complementary rather than competing perspectives when explaining customer evaluations of digital applications (Sari et al., 2024). Despite this growing theoretical convergence, customer satisfaction remains a multidimensional construct whose underlying mechanisms may vary considerably across organizational settings, particularly within public utility services where technology adoption is frequently driven by essential service needs rather than voluntary consumer preferences.

The growing body of literature on digital public services consistently acknowledges that customer satisfaction is shaped by the interaction between technological quality and service delivery performance; nevertheless, existing empirical findings reveal important differences regarding the relative importance of these dimensions across organizational contexts. Research on electronic public services demonstrates that customer satisfaction is influenced by a combination of technological, organizational, psychological, behavioral, and social antecedents rather than by isolated technological variables alone (Fathya et al., 2023). Studies focusing on PLN Mobile similarly report that electronic service quality significantly improves customer satisfaction, indicating that customers increasingly evaluate electricity services through the quality of digital interactions rather than through conventional face-to-face encounters (Magfirah et al., 2023). Comparable findings also reveal that service quality, customer trust, and application usability simultaneously contribute to customer satisfaction, suggesting that technical functionality alone is insufficient to produce favorable service evaluations (Dewi & Sari, 2024). Evidence from another regional PLN service unit confirms that the utilization of PLN Mobile positively influences customer satisfaction because digital accessibility simplifies routine electricity-related transactions while reducing customers' dependence on physical service offices (Putra & Barusman, 2024). Research conducted within different PLN operational areas likewise demonstrates that digital service innovation and continuous service improvement strengthen customers' evaluations of overall service performance despite variations in local service conditions (Yusuf et al., 2025). Other empirical investigations further indicate that optimizing the integration between application functionality and pricing policies contributes to higher customer satisfaction, implying that digital platforms operate within broader service ecosystems rather than as isolated technological products (Rahayu et al., 2024). Similar conclusions are reported by studies emphasizing that continuous improvements in e-service quality remain fundamental for sustaining customer satisfaction within PLN service environments undergoing digital transformation (Muliati & Sukmiah, 2025). Although these studies collectively reinforce the strategic importance of PLN Mobile in enhancing service quality, they predominantly conceptualize customer satisfaction as a measurable outcome represented by statistical relationships among predefined variables, leaving limited room for understanding how customers themselves construct meanings around satisfaction and dissatisfaction through everyday interactions with the application.

Despite the considerable expansion of empirical studies examining digital service satisfaction, several conceptual and methodological limitations remain insufficiently addressed within the existing literature. Most previous investigations employ cross-sectional quantitative approaches that prioritize hypothesis testing and causal estimation while providing relatively limited explanations regarding the subjective processes through which customers interpret their digital service experiences (Novianti & Bharata, 2022). The widespread application of standardized measurement instruments, including End User Computing Satisfaction (EUCS), has undoubtedly contributed to consistent assessments of user satisfaction but simultaneously narrows analytical attention toward numerical indicators that may overlook contextual nuances underlying users' evaluations (Salsabila et al., 2022). Such methodological tendencies become increasingly problematic because digital service satisfaction is inherently dynamic, evolving through repeated interactions in which expectations, previous experiences, emotional responses, and organizational responsiveness continuously shape users' judgments over time. This limitation is particularly relevant in the context of PLN Mobile because electricity constitutes an essential public utility, meaning that customers may continue using the application despite experiencing recurring technical disruptions, delayed complaint handling, or inconsistent service responsiveness simply because alternative service channels are less practical. Existing studies therefore provide limited explanation regarding whether continued application usage genuinely reflects customer satisfaction, habitual dependence, functional necessity, or the absence of viable alternatives. From a methodological perspective, qualitative inquiry offers greater potential for capturing these complex interpretations by allowing participants to articulate their experiences, expectations, and evaluations in their own words while preserving the contextual richness often lost through structured survey instruments (Creswell & Creswell, 2018). Such an interpretive perspective remains underrepresented within current PLN Mobile research, despite its potential to explain why similar levels of application usage may correspond to substantially different perceptions of service quality and customer satisfaction.

The unresolved limitations identified within previous studies position the present research as an effort to advance the literature on digital public service satisfaction by shifting the analytical focus from measuring the magnitude of relationships among predefined variables toward understanding how customers construct and negotiate meanings of satisfaction through their lived experiences when interacting with PLN Mobile. Rather than treating perceived usefulness, perceived ease of use, system quality, and e-service quality as isolated explanatory variables, this study conceptualizes these dimensions as interconnected experiences that collectively shape customers' evaluations of digital electricity services within a public utility environment. This perspective acknowledges that customer satisfaction is not merely the consequence of technical system performance but also reflects customers' interpretations of organizational responsiveness, service reliability, communication effectiveness, and the extent to which digital services fulfill practical needs in everyday life. In contrast to previous quantitative investigations, the present study adopts a qualitative case study approach to explore customer narratives within the operational context of PT PLN (Persero) ULP Samarinda Ilir, where the implementation of PLN Mobile represents an integral component of the organization's broader digital transformation agenda (PT PLN (Persero), 2026). The qualitative orientation enables the research to capture contextual variations that cannot be adequately represented through standardized survey measurements, particularly when customers simultaneously express appreciation for the application's usefulness while criticizing recurring technical or service-related shortcomings. The analytical process further employs thematic analysis to identify recurring patterns across participants' experiences, allowing latent meanings of satisfaction and dissatisfaction to emerge inductively rather than being constrained by predetermined statistical constructs (Braun & Clarke, 2021). To strengthen analytical rigor and ensure systematic interpretation of qualitative evidence, data reduction, coding, categorization, and theme development are conducted following established procedures for qualitative data analysis that emphasize credibility, transparency, and interpretive consistency (Miles et al., 2020). The selection of a case study strategy is equally appropriate because it facilitates an in-depth examination of a contemporary phenomenon within its real-life organizational setting, enabling the interaction between digital technology, service processes, and customer experiences to be understood holistically rather than as disconnected variables (Yin, 2018).

This study therefore aims to explore customer satisfaction with the PLN Mobile application among customers of PT PLN (Persero) ULP Samarinda Ilir by examining how perceived ease of use, perceived usefulness, system quality, and service quality are experienced and interpreted throughout

customers' interactions with the application. Rather than emphasizing statistical relationships between variables, the research seeks to understand the underlying meanings that customers attach to both satisfying and dissatisfying digital service experiences within the context of essential public utility services. The findings are expected to contribute theoretically by enriching the contemporary discourse on digital service satisfaction through the integration of technology acceptance, information system success, and electronic service quality perspectives within a qualitative interpretive framework. From a methodological standpoint, the study demonstrates the value of qualitative inquiry in uncovering dimensions of customer satisfaction that remain difficult to capture through conventional quantitative approaches, particularly those associated with contextual experiences, emotional evaluations, and repeated service interactions. Empirically, the research expands existing knowledge regarding the implementation of digital transformation within Indonesia's electricity sector by providing evidence derived directly from customers' lived experiences in a local service unit. The practical implications are equally significant because a deeper understanding of customer experiences can assist service managers in identifying strategic priorities for improving application reliability, complaint responsiveness, interface usability, and overall digital service performance. Ultimately, this research seeks to demonstrate that the long-term success of digital transformation in public utility organizations depends not only on the availability of sophisticated digital technologies but also on the extent to which those technologies consistently generate meaningful, trustworthy, and satisfying experiences for the communities they are intended to serve.

RESEARCH METHODS

Type of Research, Population, and Sample

This study employed a qualitative research design with a case study approach to explore customer satisfaction with the PLN Mobile application at PT PLN (Persero) ULP Samarinda Ilir. A qualitative approach was chosen because the study aimed to understand customers' experiences, perceptions, and evaluations of digital services rather than examine causal relationships statistically (Creswell & Creswell, 2018). The case study approach was considered appropriate as it enabled an in-depth investigation of customer experiences within the real-life context of a public utility digital service (Yin, 2018). The study involved 15 informants selected through purposive sampling based on the following criteria: active PLN customers, users of the PLN Mobile application, experience in using at least one core feature such as bill payment, token purchase, complaint submission, or service requests, and willingness to participate in the interviews. The informants represented both residential and business customers with diverse demographic backgrounds to capture a wide range of user experiences. To maintain research ethics and participant confidentiality, all respondents were anonymized using codes R1–R15. Data were collected through semi-structured interviews, observations, and supporting documentation, then analyzed using thematic analysis through systematic coding and theme development to identify patterns related to customer satisfaction with the PLN Mobile application (Braun & Clarke, 2021).

Research Propositions

Because this study employed a qualitative approach, it did not formulate statistical hypotheses but instead developed analytical propositions derived from the underlying theoretical framework. The first proposition is that perceived ease of use supports customer satisfaction by reducing the effort required to access and utilize PLN Mobile services, consistent with the Technology Acceptance Model (Handayani & Prahartiwi, 2024). The second proposition is that perceived usefulness becomes a key determinant of customer satisfaction because users value efficiency, convenience, and reduced dependence on conventional service channels. The third proposition is that system quality may hinder customer satisfaction when the application experiences technical problems such as system errors, slow loading, login failures, or delayed data synchronization (Febrianti et al., 2023). The fourth proposition is that e-service quality influences customer satisfaction through responsiveness, reliability, assurance, empathy, and effective complaint handling. The fifth proposition is that customer satisfaction may reflect not only positive evaluations of the application but also necessity-based continuance, where customers continue using PLN Mobile because it serves as the primary channel for accessing essential electricity services despite experiencing unresolved technical or service-related issues (Fathya et al., 2023).

Conceptual Framework

The conceptual framework of this study integrates the Technology Acceptance Model (TAM), the Information Systems Success Model, and e-service quality. Ease of use and application usefulness are derived from TAM (Handayani & Prahartiwi, 2024). System quality and service quality are derived from the DeLone and McLean Information Systems Success Model. User satisfaction is positioned as the main outcome of user interaction with PLN Mobile. Conceptually, ease of use supports satisfaction by making the application easier to learn and operate. Application usefulness drives satisfaction by providing functional benefits such as faster transactions and 24-hour service access (Novianti & Bharata, 2022). System quality influences satisfaction by determining whether the application performs reliably and consistently. Service quality shapes satisfaction by determining whether users receive timely responses, clear solutions, and adequate support (Hassan, 2024). These four dimensions interact to form overall user satisfaction. The conceptual relationship can be described as follows:

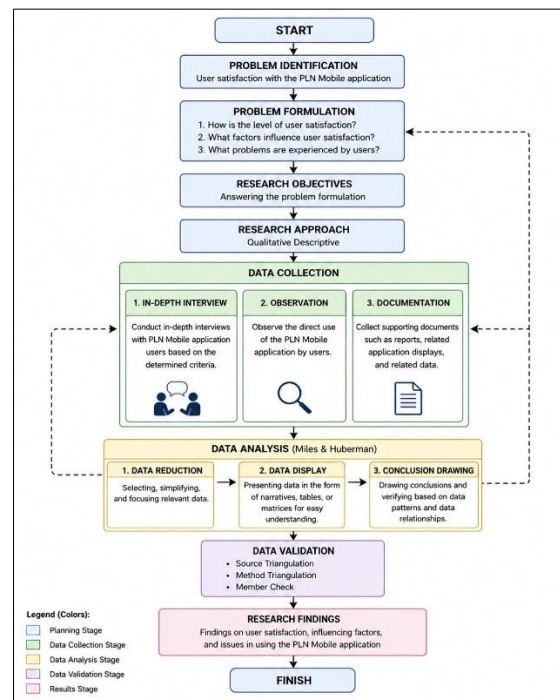


Figure 1. Research Conceptual Framework

This framework does not assume linear statistical causality but serves as an interpretive guide for coding, analyzing, and discussing interview data. It allows the study to identify which dimension appears most dominant in user narratives and which dimension becomes the main source of dissatisfaction.

Data Collection Techniques

Data were collected through three techniques: in-depth interviews, observation, and documentation. In-depth interviews were conducted to explore user experiences in accessing PLN Mobile, understanding menus, completing transactions, submitting complaints, and evaluating satisfaction (Creswell & Creswell, 2018). The interview guide was structured around five dimensions: ease of use, application usefulness, system quality, service quality, and user satisfaction. However, the interviews remained semi-structured to allow informants to describe their experiences freely. Observation was conducted to examine how users interacted with the application, especially in relation to navigation, transaction steps, and complaint features (Yin, 2018). Documentation was used to complement interview and observation data, including screenshots of the application interface, notes on feature availability, and relevant service information. Triangulation among interviews, observation, and documentation was used to improve the credibility of the findings (Creswell & Creswell, 2018).

Data Analysis and Testing Techniques

Data analysis followed the interactive model of Miles, Huberman, and Saldaña, which consists of data condensation, data display, and conclusion drawing (Miles et al., 2020). Data condensation was conducted by selecting, simplifying, and organizing interview transcripts based on relevant themes. Data display was conducted through matrices and thematic tables showing the relationship between aspects, categories, codes, and findings. Conclusion drawing was conducted by identifying patterns, dominant themes, contradictions, and relationships among user experiences. Thematic analysis was also applied to identify recurring patterns in user narratives (Braun & Clarke, 2021). Following Braun and Clarke, the analysis involved familiarization with the data, initial coding, theme development, theme review, theme definition, and interpretation. NVivo-style coding was used to classify statements into five main thematic categories: ease of use, application usefulness, system quality, service quality, and user satisfaction. Codes were then grouped into subcategories such as clear navigation, fast transaction, system error, slow response, complaint delay, continued use, and expectations for improvement. Trustworthiness was maintained through triangulation, careful coding, and interpretive consistency (Miles et al., 2020). Triangulation was conducted by comparing interview data with observation and documentation, while coding consistency was maintained by applying the same coding structure across all informants.

RESULTS AND DISCUSSION

PLN Mobile is a digital service application developed to provide customers with easier access to electricity services (PT PLN (Persero), 2026). The application offers various features, including electricity bill payment, electricity token purchase, complaint reporting, power upgrade requests, new installation requests, outage information, and service tracking. In this study, customers of PT PLN (Persero) ULP Samarinda Ilir evaluated PLN Mobile based on their direct experience using these features. The analysis produced five main themes: ease of use, application usefulness, system quality, service quality, and user satisfaction (Braun & Clarke, 2021).

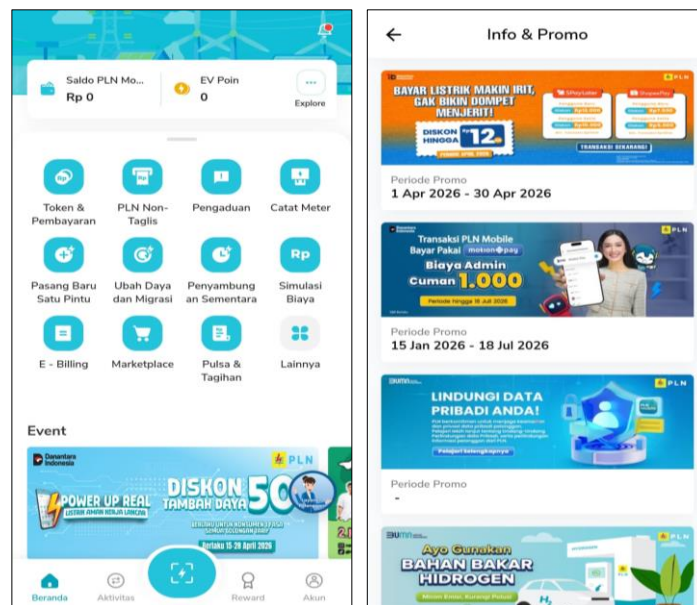


Figure 2. Display of PLN Mobile Application

Table 1. Characteristics of Respondents

Respondent Code	Customer Type	Age	Occupation	Duration of PLN Mobile Use
R1	Residential	45	Government employee	2 years
R2	Business	30	Government employee	4 years
R3	Residential	58	Retired employee	2 years
R4	Residential	60	Private employee	1 year

R5	Business	40	Government employee	2 years
R6	Residential	32	Private employee	5 years
R7	Residential	25	Private employee	2 years
R8	Residential	53	Government employee	3 years
R9	Residential	45	Housewife	1 year
R10	Business	55	Business owner	2 years
R11	Business	42	Business owner	2 years
R12	Residential	37	Private employee	3 years
R13	Residential	52	Business owner	3 years
R14	Residential	33	Private employee	5 years
R15	Residential	43	Government employee	3 years

Source: Data processed by researcher, 2026

The respondents represented both residential and business customers. Their duration of use ranged from one to five years, indicating that the study involved users with sufficient experience in accessing the application. This variation is important because satisfaction with digital services may change over time. Users who have used the application longer are more likely to evaluate not only the initial ease of learning but also system consistency, service reliability, and accumulated experience (Kujala et al., 2017).

Ease of Use

Ease of use refers to the extent to which users perceive PLN Mobile as simple, understandable, and effortless to operate. The coding results show that most respondents considered PLN Mobile relatively easy to use. The application interface was perceived as user-friendly, and the main menus were generally understandable. Users reported that core features such as token purchase and bill payment could be learned quickly. This indicates that PLN Mobile has fulfilled the basic usability requirement expected from a public utility application.

Table 2. Ease of Use Coding Matrix

Aspect	Category	Codes
Ease of Use	Application navigation	Easy to understand; clear menu
	Interface display	User-friendly; attractive design
	Ease of learning	Quickly learned; no assistance needed
	Ease of transaction	Fast process; simple steps
	Feature consistency	Recognizable features; not confusing
	Usage obstacles	Confused about features; hidden menus
	User adaptation	Easy for new users; difficult for new users

Source: Data processed by researcher, 2026

The findings indicate that ease of use functions as a supporting factor in user satisfaction. Users feel more comfortable when they can access services without needing technical assistance. This finding is consistent with the Technology Acceptance Model, which argues that perceived ease of use positively influences users' acceptance and evaluation of digital technologies (Handayani & Prahartiwi, 2024). However, the study also found that not all features were equally easy to find. Some respondents stated that the complaint feature was not immediately visible or intuitive. This suggests that, although PLN Mobile is generally easy to operate, improvements in menu visibility and navigation remain necessary. Similar observations have been reported in studies on digital public services, where interface simplicity and feature accessibility significantly affect users' satisfaction (Fathya et al., 2023). Therefore, improving menu clarity and feature visibility should become one of PLN Mobile's priorities.

Application Usefulness

Application usefulness emerged as the most dominant theme in this study. Respondents consistently stated that PLN Mobile provides direct functional benefits. The application helps users

save time, avoid queues, complete transactions faster, and access services without visiting the PLN office. For business customers, the application is useful because electricity-related transactions can be completed more efficiently. For residential customers, it provides convenience in daily household electricity management.

Table 3. Application Usefulness Coding Matrix

Aspect	Category	Codes
Application Usefulness	Time efficiency	Added value; practical
	Service effectiveness	Facilitates transactions; no need to visit office
	Productivity	Completed faster; reduces queuing
	Main features	Check bills; buy tokens; report outages
	Added value	All-in-one service; 24-hour access

Source: Data processed by researcher, 2026

The dominance of usefulness shows that customers evaluate PLN Mobile mainly through its practical value. Even when technical problems occur, users still recognize the application as useful because it provides essential services. This finding is consistent with previous studies showing that perceived usefulness remains one of the primary determinants of customer satisfaction and continued use of digital service applications (Handayani & Prahartiwi, 2024). In the context of PLN Mobile, usefulness is not abstract; it is experienced through concrete benefits such as buying tokens, paying bills, and reporting outages from a mobile phone. This finding also shows that functional value can compensate for some service weaknesses (Rahayu et al., 2024). Users may complain about system errors or slow responses, but they continue using the application because the benefits remain significant. This indicates that usefulness is the main reason users remain engaged with PLN Mobile, a finding that is also supported by studies on PLN Mobile implementation in other service units (Putra & Barusman, 2024). However, this does not mean that usefulness alone is sufficient to ensure high satisfaction. If technical problems persist, users may remain dependent on the application but still evaluate it as only moderately satisfying (Dewi & Sari, 2024).

System Quality

System quality was identified as the main barrier to higher user satisfaction. Respondents reported several technical problems, including application errors, slow loading time, login difficulty, server disruption, inconsistent performance, and delayed data synchronization. These problems directly affected user experience because customers expect electricity services to be available when needed.

Table 4. System Quality Coding Matrix

Aspect	Category	Codes
System Quality	Stability	Application errors; crash
	Speed	Long loading time; slow response
	Accessibility	Difficult login; server down
	Reliability	Inconsistent; disruption at certain times
	System integration	Data synchronization; delayed updates

Source: Data processed by researcher, 2026

The findings confirm that system quality is a critical determinant of information system success. System quality includes aspects such as reliability, usability, availability, and response time that shape users' evaluations of digital applications (Sari et al., 2024). In this study, weaknesses in system quality reduced user satisfaction even though the application was considered useful. This finding is consistent with previous studies showing that system quality significantly influences customer satisfaction and continued use of digital public services (Fathya et al., 2023). System quality problems are particularly sensitive in public utility services because customers often access the application when they need immediate service. For example, when users want to report outages or check electricity bills, system

disruption can create dissatisfaction and reduce trust. Slow loading and login failures may also lead users to return to offline service channels or contact call centers. Therefore, system reliability should be treated as a strategic component of customer satisfaction rather than merely as a technical issue (Putra & Barusman, 2024).

Service Quality

Service quality refers to users' evaluation of responsiveness, reliability, assurance, empathy, and complaint handling. The findings show that users generally perceived PLN Mobile's service quality as adequate but not optimal. The application provides a formal channel for submitting complaints, but users still reported slow follow-up and inconsistent responses. In several cases, the process of reporting was easy, but users were uncertain about how quickly the complaint would be resolved.

Table 5. Service Quality Coding Matrix

Aspect	Category	Codes
Service Quality	Responsiveness	Fast response; slow response
	Reliability	Suitable service; inconsistent service
	Assurance	Trust; safe to use
	Empathy	Customer attention; solution provided
	Complaint system	Easy to report; slow follow-up

Source: Data processed by researcher, 2026

The findings indicate that digital service quality depends not only on the availability of complaint features but also on the perceived effectiveness of follow-up. Previous studies explain that responsiveness and effective service recovery are essential dimensions of electronic service quality that directly influence customers' evaluations of digital services (Ingaldi, 2022). In PLN Mobile, service quality becomes especially important because customers use the application to solve essential electricity problems. A complaint feature that exists but responds slowly may create a gap between service promise and user experience. Service quality also influences trust (Hassan, 2024). Users are more likely to trust the application when they receive clear confirmation, transparent progress tracking, and timely solutions. Conversely, slow follow-up can make users perceive the application as less reliable, even when the system successfully records complaints. Therefore, improving complaint responsiveness should be part of PLN Mobile's customer satisfaction strategy (Yum & Yoo, 2023).

User Satisfaction

User satisfaction with PLN Mobile can be categorized as moderate. Respondents appreciated the functional benefits of the application, especially its usefulness and convenience. However, satisfaction was limited by system instability, slow response, login problems, and complaint follow-up issues. Users continued using the application, but their continued use was not always driven by full satisfaction. Instead, it was often driven by necessity, practicality, and the lack of a more convenient alternative.

Table 6. User Satisfaction Coding Matrix

Aspect	Category	Codes
User Satisfaction	General satisfaction	Satisfied; moderately satisfied
	Dissatisfaction	Less satisfied; dissatisfied
	Loyalty	Will continue using; will recommend
	Expectations	Needs improvement; high expectations

Source: Data processed by researcher, 2026

This finding introduces an important concept: necessity-based satisfaction. Users remain engaged with PLN Mobile because it is useful and functionally necessary, but they still expect significant improvements. This form of satisfaction differs from strong loyalty. Strong loyalty is usually built through consistently positive experiences, while necessity-based use occurs when users continue using

a service because it remains the most practical option despite imperfections (Fathya et al., 2023). This finding enriches the literature on customer satisfaction by showing that continued use does not always indicate high satisfaction (Dewi & Sari, 2024).

Functional Value of PLN Mobile in Shaping Customer Satisfaction

The findings indicate that the functional value of PLN Mobile constitutes the strongest factor influencing customer satisfaction among users of PT PLN (Persero) ULP Samarinda Ilir. Interview data revealed that respondents consistently emphasized the practical benefits obtained from using the application, particularly in conducting electricity bill payments, purchasing prepaid electricity tokens, submitting service requests, and reporting service disruptions without visiting the PLN office. These functions reduced transaction time and simplified routine interactions with electricity services, making the application an important component of customers' daily activities. The prominence of application usefulness suggests that customers evaluate digital public services primarily through the extent to which the application improves efficiency and convenience. This interpretation is consistent with the Technology Acceptance Model, which proposes that perceived usefulness plays a central role in shaping users' evaluations and continued acceptance of digital technology (Handayani & Prahartiwi, 2024). Similar evidence has also been reported by Putra and Barusman (2024), who found that the functional benefits offered by PLN Mobile positively influence customer satisfaction across different service units.

The importance of application usefulness becomes more apparent when viewed within the context of electricity services, which represent essential public services requiring frequent and timely access. Unlike optional commercial applications, PLN Mobile supports recurring activities that customers perform regularly, including monitoring electricity consumption and completing financial transactions related to electricity usage. Respondents explained that the ability to complete these activities through a single mobile platform reduced administrative burdens and minimized dependence on conventional service counters. The practical value generated by these features demonstrates that customer satisfaction is closely associated with the application's capacity to improve service accessibility rather than merely providing additional digital functions. Previous studies similarly conclude that perceived usefulness significantly strengthens customer satisfaction because users prioritize applications capable of improving productivity and reducing service complexity (Rahayu et al., 2024). These findings reinforce the proposition that functional value represents the primary source of positive customer evaluations in digital public services.

Although application usefulness emerged as the dominant theme, respondents also associated positive experiences with the relative ease of operating PLN Mobile. Most participants explained that the interface was sufficiently clear to enable them to learn basic functions without requiring external assistance. Simple navigation and understandable menu structures reduced the cognitive effort needed to complete common transactions, thereby supporting more positive service experiences. Ease of use therefore complements application usefulness by ensuring that functional benefits can be accessed efficiently by users with different educational backgrounds, occupations, and levels of digital literacy. This relationship supports the Technology Acceptance Model, which argues that perceived ease of use enhances users' willingness to adopt and evaluate digital technologies positively because the technology requires relatively little effort to operate (Handayani & Prahartiwi, 2024). Comparable findings were reported by Hijazi et al. (2023), who demonstrated that intuitive interfaces strengthen users' intention to continue using mobile service applications.

The findings nevertheless suggest that ease of use is not distributed equally across all application features. While respondents generally encountered little difficulty when purchasing electricity tokens or paying bills, several participants reported that complaint-related features were less visible and occasionally required additional navigation before they could be accessed. Such experiences indicate that the usability of PLN Mobile remains uneven across different service functions despite satisfactory performance in routine transactions. In digital public services, accessibility extends beyond interface aesthetics because customers frequently access complaint services during urgent situations that require immediate assistance. Difficulties in locating important service menus may therefore influence perceptions of service effectiveness before customers interact with service personnel. Similar observations were identified by Haq (2022), who emphasized that optimizing navigation and improving feature accessibility are important elements in strengthening the quality of digital communication between PLN and its customers.

The combined influence of application usefulness and ease of use demonstrates that customer satisfaction with PLN Mobile is established through complementary functional experiences rather than through a single technological attribute. Application usefulness encourages customers to continue relying on the platform because it delivers tangible operational benefits, whereas ease of use enables those benefits to be realized with minimal effort. The interaction between these dimensions reflects the conceptual integration of the Technology Acceptance Model adopted in this study, where usefulness functions as the principal driver of customer satisfaction and ease of use strengthens the effectiveness of that relationship. Nevertheless, the findings also indicate that functional advantages alone cannot guarantee optimal customer satisfaction when usability remains inconsistent across certain features. This pattern supports recent evidence showing that customer satisfaction with PLN Mobile depends on the simultaneous delivery of practical functionality and accessible user interaction rather than on either dimension independently (Yusuf et al., 2025).

System and Service Quality as Challenges in Digital Public Service

The findings reveal that system quality represents the principal obstacle preventing customers from achieving higher levels of satisfaction with the PLN Mobile application. Although respondents acknowledged the application's practical benefits, many also described recurring technical issues, including slow loading times, login failures, application errors, server interruptions, and delayed synchronization of transaction data. These technical limitations affected customers' confidence because electricity services often require immediate access and uninterrupted system performance. In the context of digital public services, users expect applications to operate consistently regardless of time or transaction volume. This finding aligns with the Information Systems Success Model, which emphasizes that system quality, including reliability, availability, usability, and response time, directly influences users' evaluations of information systems (Sari et al., 2024). Comparable evidence has also been reported by Febrianti et al. (2023), who concluded that technical performance remains one of the strongest determinants of user satisfaction in digital information systems.

The implications of system quality extend beyond technical functionality because they shape users' perceptions of institutional reliability. Respondents indicated that system disruptions frequently occurred when they attempted to complete urgent transactions or submit complaints regarding electricity outages. Such experiences created uncertainty regarding whether requests had been successfully processed, thereby reducing confidence in the application despite its functional advantages. The qualitative evidence demonstrates that customers evaluate technical reliability as part of their broader assessment of service quality rather than as an isolated technological issue. Previous research similarly indicates that customers are more likely to maintain positive evaluations of digital public services when applications provide stable performance and uninterrupted access during critical situations (Fathya et al., 2023). These findings suggest that improving system stability should be considered a strategic priority because technical reliability directly influences public trust in digital government services.

Service quality emerged as another important factor shaping customer satisfaction, particularly through responsiveness and complaint management. Respondents generally appreciated the availability of complaint submission features within PLN Mobile because these features simplified communication with the service provider. Nevertheless, several participants expressed dissatisfaction with the speed and consistency of follow-up after complaints had been submitted. Users often received confirmation that their reports had been recorded, yet they remained uncertain about the expected response time and the progress of problem resolution. Such experiences indicate that digital service quality depends not only on providing online communication channels but also on ensuring effective institutional responses after customer interactions occur. This interpretation corresponds with the e-service quality framework, which identifies responsiveness, reliability, assurance, and service recovery as fundamental dimensions influencing customer evaluations of digital services (Ingaldi, 2022).

The relationship between system quality and service quality demonstrates that customer satisfaction is influenced by the integration of technological performance and organizational responsiveness. A technically reliable application may still generate dissatisfaction if customer complaints are not addressed promptly, while responsive customer service may struggle to compensate for persistent technical failures. Respondents therefore evaluated PLN Mobile not only as a software application but also as a representation of PLN's overall service performance. This pattern reflects the

characteristics of public utility services, where digital platforms function as extensions of institutional service delivery rather than independent technological products. Similar conclusions were presented by Muliati and Sukmiah (2025), who found that improvements in electronic service quality strengthen customer satisfaction only when accompanied by responsive organizational support. Related findings by Makasiahe et al. (2024) also emphasize that the quality of public services depends on the interaction between digital innovation and administrative responsiveness.

Taken together, the findings indicate that improving customer satisfaction requires simultaneous enhancement of both system quality and service quality. Technical improvements such as increasing server capacity, reducing application errors, accelerating data synchronization, and improving login reliability should be accompanied by more transparent complaint handling mechanisms, clearer service notifications, and faster follow-up procedures. These complementary improvements would reduce the gap between customer expectations and actual service experiences while strengthening trust in PLN Mobile as the official digital service platform. The evidence supports previous studies demonstrating that technological performance and service responsiveness jointly determine customer satisfaction and long-term engagement with mobile service applications (Yum & Yoo, 2023). Consequently, strengthening digital public services requires an integrated approach that addresses both technological infrastructure and organizational service delivery rather than focusing exclusively on one dimension.

Implications of User Satisfaction for Digital Public Service Development

The findings indicate that customer satisfaction with PLN Mobile cannot be interpreted solely through the frequency of application use because continued usage may also reflect the absence of alternative service channels. Most informants continued to rely on PLN Mobile despite experiencing system interruptions and inconsistent complaint handling because the application remains the primary digital gateway for electricity-related services. This pattern suggests that satisfaction in public utility services differs from satisfaction in highly competitive commercial applications, where dissatisfied users can easily migrate to competing platforms. The qualitative evidence demonstrates that customers distinguish between recognizing the usefulness of the application and feeling fully satisfied with the quality of the service experience. Similar observations have been reported in studies of electronic public services, which explain that satisfaction should be evaluated through users' experiences and perceptions rather than through usage statistics alone (Fathya et al., 2023).

To summarize the relationship between the empirical findings and their managerial implications, the synthesis presented in Table 7 demonstrates how each dimension contributes differently to customer satisfaction.

Table 7. Synthesis of Research Findings and Discussion

Dimension	Main Empirical Finding	Interpretation	Contribution to User Satisfaction
Ease of Use	Users generally find the application easy to operate, but some features are less visible	Usability is adequate but not fully optimized	Supports satisfaction by reducing user effort
Application Usefulness	Users benefit from faster transactions, 24-hour access, and reduced office visits	Functional value is the strongest driver	Becomes the dominant factor shaping satisfaction
System Quality	Users experience errors, slow loading, login problems, and delayed updates	Technical reliability remains a major weakness	Becomes the main barrier to higher satisfaction
Service Quality	Complaint features are available, but follow-up is not always fast or consistent	Digital service must be supported by institutional responsiveness	Builds or weakens trust depending on response quality
User Satisfaction	Users are moderately satisfied and continue using the app despite complaints	Continued use reflects usefulness and	Indicates necessity-based satisfaction

Dimension	Main Empirical Finding	necessity, not always full loyalty	Contribution to User Satisfaction
		Interpretation	

Source: Data processed by researcher, 2026

The synthesis presented in Table 7 shows that each analytical dimension contributes differently to customer satisfaction, indicating that the dimensions do not possess equal explanatory strength. Application usefulness emerged as the dominant factor because respondents consistently emphasized the practical benefits obtained from using PLN Mobile in completing routine electricity-related transactions. Ease of use functioned as a supporting dimension that reduced users' effort in operating the application, whereas system quality represented the principal obstacle limiting more favorable evaluations. Service quality occupied a complementary position by influencing customer confidence in PLN's ability to respond effectively after digital interactions had taken place. The interaction among these dimensions illustrates that satisfaction develops through the combination of technological performance and organizational responsiveness rather than through a single service attribute, which is consistent with the integration of the Technology Acceptance Model and the Information Systems Success Model in explaining digital service evaluation (Novianti & Bharata, 2022).

The managerial implications emerging from these findings extend beyond improving the application's technical performance. Respondents' narratives suggest that strengthening customer satisfaction requires closer integration between digital infrastructure and organizational service processes because customers evaluate PLN Mobile as part of the overall service experience rather than as an isolated technological product. Enhancing server capacity, minimizing application errors, accelerating data synchronization, and improving interface clarity would increase users' confidence during routine transactions. At the same time, complaint handling procedures should be supported through transparent progress notifications, estimated completion times, and more responsive follow-up by service officers. Previous studies on PLN Mobile and digital public services similarly conclude that sustainable customer satisfaction depends on continuous improvements in both e-service quality and institutional responsiveness (Muliati & Sukmiah, 2025).

From a theoretical perspective, the study contributes to the understanding of customer satisfaction in public digital services by demonstrating that continuous application use should not automatically be interpreted as evidence of strong customer loyalty. The qualitative findings reveal that customers often continue using PLN Mobile because it represents the official and most practical channel for accessing electricity services, even when certain expectations remain unmet. This phenomenon illustrates a form of necessity-based continuance in which functional dependence coexists with moderate satisfaction and persistent expectations for improvement. Such evidence complements previous research on electronic service quality, mobile service quality, and digital payment systems by emphasizing that public utility applications are evaluated not only according to technological performance but also according to accountability, reliability, and institutional trust (Hijazi et al., 2023). Consequently, future evaluations of digital public services should combine objective indicators of system performance with qualitative assessments of customer experience to obtain a more comprehensive understanding of service effectiveness.

CONCLUSION

This study concludes that customer satisfaction with the PLN Mobile application among customers of PT PLN (Persero) ULP Samarinda Ilir is influenced by the interaction of application usefulness, ease of use, system quality, and service quality. Among these dimensions, application usefulness emerged as the most influential factor because customers consistently perceived the application as practical, efficient, and capable of simplifying access to electricity-related services. Ease of use also contributed positively by enabling users to complete routine transactions with relatively little effort. Despite these strengths, system quality remained the primary source of dissatisfaction due to recurring technical issues, including application errors, slow loading times, login difficulties, and delayed data synchronization. Service quality also affected customer evaluations, particularly regarding the responsiveness and consistency of complaint handling after reports had been submitted through the application. These findings indicate that customer satisfaction cannot be explained by functional

benefits alone but depends equally on reliable technological performance and effective organizational service delivery. Consequently, overall customer satisfaction with PLN Mobile can be characterized as moderate because users acknowledge the application's value while continuing to expect improvements in technical reliability and service responsiveness.

The study also provides a theoretical contribution by identifying the concept of necessity-based satisfaction in the context of public utility digital services. This concept describes a situation in which customers continue using PLN Mobile primarily because it functions as the official and most practical channel for accessing essential electricity services rather than because they experience complete satisfaction with the application. Continued use, therefore, should not automatically be interpreted as evidence of strong customer loyalty. Instead, it may reflect functional dependence, limited service alternatives, and pragmatic acceptance of the existing digital platform. This finding extends previous discussions on customer satisfaction by demonstrating that usage continuity and satisfaction do not necessarily represent identical constructs within public service environments. The integration of the Technology Acceptance Model, the Information Systems Success Model, and the e-service quality perspective also provides a broader explanation of how technological, organizational, and service-related factors simultaneously shape customer evaluations. As a result, this study contributes both conceptually and empirically to the growing literature on digital public service management and customer satisfaction.

The practical implications suggest that PT PLN (Persero) should prioritize continuous improvements in both technological infrastructure and service management to enhance customer satisfaction. Strengthening system stability through server optimization, minimizing application errors, improving data synchronization, and ensuring faster application performance would reduce technical barriers experienced by users. Greater transparency in complaint handling, including real-time status tracking, estimated completion times, and more responsive follow-up, would further strengthen customer trust in digital services. Improving the visibility and accessibility of important application features may also increase usability for customers with different levels of digital literacy. Although this study provides valuable insights, several limitations should be acknowledged. The qualitative case study design involved only fifteen informants from a single PLN service unit, limiting the generalizability of the findings to other regions. Future studies are therefore encouraged to involve broader geographical coverage, compare different PLN service units, employ mixed-method approaches, and quantitatively examine the relationships among application usefulness, ease of use, system quality, service quality, and customer satisfaction to strengthen the empirical foundation of the proposed conceptual model.

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