

Performance Expectancy And Effort Expectancy As Determinants Of PLN Mobile Use Intention Among PLN ULP Namlea Customers

Ekspektasi Kinerja Dan Ekspektasi Usaha Sebagai Determinan Niat Penggunaan PLN Mobile Pada Pelanggan PLN ULP Namlea

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Abstract

This study examines the influence of performance expectancy and effort expectancy on customers' intention to use the PLN Mobile application at PLN ULP Namlea. The study is motivated by the continuing development of digital electricity services while conventional service channels remain relevant among customers in the local service area. Previous studies have examined technology-adoption determinants in various digital-service contexts, but empirical evidence focusing specifically on performance expectancy and effort expectancy as direct determinants of PLN Mobile use intention in an island-area electricity service context remains limited. The novelty of this study lies in its focused application of these two core technology-acceptance constructs to PLN ULP Namlea customers. Data were obtained from PLN ULP Namlea customers who met the predetermined respondent criteria and were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The analysis evaluates the measurement model and the direct structural relationships between performance expectancy, effort expectancy, and intention to use PLN Mobile. The findings show that both performance expectancy and effort expectancy positively and significantly influence customers' intention to use PLN Mobile. Customers are more likely to use the application when they perceive it as useful for supporting their electricity-related needs and easy to understand and operate. The results provide practical implications for improving the functional benefits and usability of PLN Mobile and contribute to research on digital-service adoption in geographically dispersed and island communities.

Keywords: *Performance Expectancy, Effort Expectancy, Intention to Use, PLN Mobile, Technology Adoption.*

Abstrak

Penelitian ini mengkaji pengaruh ekspektasi kinerja (*performance expectancy*) dan ekspektasi usaha (*effort expectancy*) terhadap niat pelanggan untuk menggunakan aplikasi PLN Mobile di PLN ULP Namlea. Penelitian ini dilatarbelakangi oleh perkembangan layanan kelistrikan digital yang terus berlanjut, sementara saluran layanan konvensional tetap relevan bagi pelanggan di wilayah layanan setempat. Studi-studi sebelumnya telah meneliti faktor penentu adopsi teknologi dalam berbagai konteks layanan digital, namun bukti empiris yang secara khusus berfokus pada ekspektasi kinerja dan ekspektasi usaha sebagai penentu langsung niat penggunaan PLN Mobile dalam konteks layanan kelistrikan di wilayah kepulauan masih terbatas. Kebaruan penelitian ini terletak pada penerapan yang terfokus dari kedua konstruk utama penerimaan teknologi tersebut terhadap pelanggan PLN ULP Namlea. Data diperoleh dari pelanggan PLN ULP Namlea yang memenuhi kriteria responden yang telah ditetapkan dan dianalisis menggunakan *Partial Least Squares Structural Equation Modeling* (PLS-SEM) dengan perangkat lunak SmartPLS. Analisis ini mengevaluasi model pengukuran serta hubungan struktural langsung antara ekspektasi kinerja, ekspektasi usaha, dan niat menggunakan PLN Mobile. Temuan penelitian menunjukkan bahwa baik ekspektasi kinerja maupun ekspektasi usaha berpengaruh positif dan signifikan terhadap niat pelanggan untuk menggunakan PLN Mobile. Pelanggan cenderung lebih berminat menggunakan aplikasi tersebut ketika mereka menganggapnya bermanfaat untuk mendukung kebutuhan terkait kelistrikan serta mudah dipahami dan dioperasikan. Hasil penelitian ini memberikan implikasi praktis bagi peningkatan manfaat fungsional dan kemudahan

penggunaan PLN Mobile, serta berkontribusi pada penelitian mengenai adopsi layanan digital di masyarakat wilayah kepulauan yang tersebar secara geografis.

Kata Kunci: Ekspektasi Kinerja, Ekspektasi Usaha, Niat Menggunakan, PLN Mobile, Adopsi Teknologi.

1. Introduction

Digital transformation has changed the way public and utility services are delivered. Customers increasingly expect services to be accessible, responsive, practical, and available through digital channels. The growth of digital platforms has therefore encouraged service organizations to redesign customer interactions and provide self-service facilities that can reduce dependence on conventional service points. In the electricity sector, digitalization can support activities such as bill payment, token purchase, outage reporting, service requests, and access to customer information through mobile applications.

PT PLN (Persero) has developed PLN Mobile as an integrated digital service platform intended to bring various electricity services into a single application. Previous research on PLN Mobile has described the application as a means of improving customer service and facilitating digital interactions, including reporting and service requests (Akromah & Kusumasari, 2023). Research in other digital-service contexts also indicates that technology adoption is influenced by users' perceptions of the benefits and effort required to use a system (Tusyanah et al., 2021; Shunmugasundaram et al., 2025).

The adoption of PLN Mobile, however, is not determined solely by the availability of the application. Local customer characteristics, digital literacy, access conditions, and established service habits can influence whether customers are willing to shift from conventional channels to digital services. Studies of PLN Mobile implementation have reported that uneven digital readiness and differences in customers' familiarity with digital services remain relevant challenges (Indarti et al., 2025). This issue becomes particularly important in service areas where geographical conditions and access to digital infrastructure may differ from those in major urban centers.

The situation is relevant to PLN ULP Namlea. Internal operational information reported in the previous study indicates that PLN ULP Namlea served a substantial customer base while digital-channel utilization had not fully replaced conventional service channels. The previous article also reported that operational service activity through service posts and counters remained higher than activity through PLN Mobile during the second semester of 2025. This condition suggests that the existence of a digital platform does not automatically translate into customers' intention to use it. Understanding the determinants of that intention is therefore important for improving the effectiveness of digital service adoption.

Within the Unified Theory of Acceptance and Use of Technology (UTAUT), performance expectancy refers to the degree to which an individual believes that using a technology will provide benefits in performing activities, while effort expectancy refers to the degree of ease associated with using the technology (Venkatesh et al., 2003). In consumer technology settings, these perceptions are theoretically relevant because customers are more likely to consider a digital service when they believe that it is useful and can be operated without excessive effort (Venkatesh et al., 2012; Tusyanah et al., 2021; Shunmugasundaram et al., 2025). Empirical studies have likewise reported positive relationships between performance expectancy, effort

expectancy, and behavioral intention in different technology-adoption settings (Tusyanah et al., 2021; Makarim et al., 2025; Priyastomo et al., 2025).

Nevertheless, the empirical evidence is not entirely consistent across contexts. Some studies have found that technology-acceptance constructs do not always produce significant effects on intention to use, indicating that contextual differences may influence the strength of the relationships (Purwanto & Loisa, 2020; Al Ramdhani et al., 2024). This inconsistency creates a research gap concerning how performance expectancy and effort expectancy operate as direct determinants of intention to use PLN Mobile, particularly among customers in an island-area electricity service context.

Accordingly, this study deliberately focuses on a more parsimonious research model consisting of two independent variables performance expectancy and effort expectancy and one dependent variable, intention to use PLN Mobile. Rather than incorporating a broader range of technology-adoption factors, this study adopts a focused research model that examines performance expectancy and effort expectancy as direct determinants of customers' intention to use PLN Mobile. This approach enables a clearer assessment of the contribution of these two core UTAUT constructs to customers' intention to use the application.

The objective of this study is therefore to examine whether performance expectancy and effort expectancy influence customers' intention to use PLN Mobile at PLN ULP Namlea. The findings are expected to provide practical input for improving digital-service communication, application usability, and the presentation of functional benefits to customers. Attention to application usability is particularly important because identifying and addressing usability problems can improve the quality of users' interaction with mobile applications (Praditya et al., 2021), while also contributing empirical evidence from an island-area utility-service setting.

2. Literature Review

Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed by Venkatesh et al. (2003) to integrate major constructs from earlier technology-acceptance theories. The model identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as core determinants of technology acceptance and use, while several relationships are influenced by individual characteristics (Jadil et al., 2021). In this study, the model is applied selectively by focusing on performance expectancy and effort expectancy as direct predictors of intention to use PLN Mobile. This focused application is consistent with the research objective and avoids introducing additional constructs that are outside the scope of the present investigation.

Performance Expectancy

Performance expectancy describes the extent to which a person believes that using a technology will help achieve gains in performance (Venkatesh et al., 2003). In a customer-service context, the construct can be understood through the expected practical benefits obtained from using the application, such as saving time, completing service requests more efficiently, obtaining information more quickly, and reducing the need to visit a physical service point. When customers perceive that PLN Mobile provides meaningful functional benefits and helps them accomplish electricity-related needs more effectively, their intention to use the application is expected to increase.

Previous research has shown that performance expectancy is positively associated with users' intention to adopt digital applications (Rizkalla et al., 2023).

Effort Expectancy

Effort expectancy refers to the degree of ease associated with the use of a technology (Venkatesh et al., 2003). The construct concerns whether users perceive a system as understandable, learnable, and relatively simple to operate. For PLN Mobile, effort expectancy may be reflected in customers' perceptions of the ease of registration, login, menu navigation, feature discovery, and completion of service processes. When the application requires less cognitive and operational effort, customers are more likely to develop a favorable intention to use it (Venkatesh et al., 2012; Priyastomo et al., 2025).

Intention to Use

Intention to use represents a customer's willingness or planned tendency to use a technology or service. In technology-acceptance research, intention is an important proximal determinant of subsequent technology use because it reflects the motivational component preceding actual behavior (Venkatesh et al., 2003). In the PLN Mobile context, intention to use refers to customers' willingness and intention to use the application for accessing electricity-related services when such services are needed (Candra et al., 2024).

Relationship Between Performance Expectancy and Intention to Use

The theoretical relationship between performance expectancy and intention to use is grounded in the assumption that users evaluate a technology partly according to the benefits and performance improvements they expect from its use (Ngusie et al., 2024). If customers perceive that PLN Mobile enables them to access electricity services more quickly, practically, and efficiently, they are more likely to develop a stronger intention to use the application (Rachmad et al., 2024). Prior empirical studies in digital-service and technology-adoption contexts have reported that performance expectancy can positively influence behavioral intention (Tusyanah et al., 2021; Rizkalla et al., 2023; Makarim et al., 2025). Based on this theoretical and empirical reasoning, the first hypothesis is formulated as follows.

H1: Performance expectancy has a positive effect on customers' intention to use PLN Mobile.

Relationship Between Effort Expectancy and Intention to Use

Effort expectancy is expected to influence intention because users are more willing to adopt technologies that they perceive as easy to understand and operate. Complicated registration, unclear menus, difficult navigation, and lengthy procedures may increase perceived effort and discourage use (Candra et al., 2024). Conversely, simple processes and accessible features can reduce barriers to adoption. Previous research has found positive relationships between effort expectancy and behavioral intention in several digital-service settings (Tusyanah et al., 2021; Priyastomo et al., 2025; Shunmugasundaram et al., 2025). Therefore, the second hypothesis is formulated as follows.

H2: Effort expectancy has a positive effect on customers' intention to use PLN Mobile.

Conceptual Framework

The conceptual framework positions performance expectancy and effort expectancy as exogenous constructs that directly predict intention to use PLN Mobile. The model is intentionally limited to these relationships to provide a focused examination of the two UTAUT constructs most directly related to perceived benefits and ease of use.

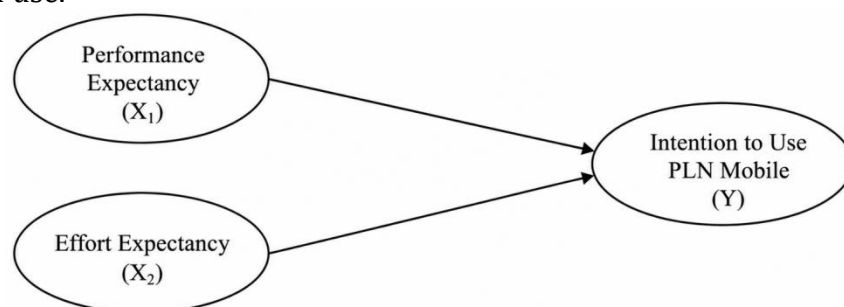


Figure 1. Conceptual Framework of the Study

Sources: Author's own elaboration based on the literature review.

3. Methods

This study uses a quantitative approach with an associative research design. The design is appropriate because the study seeks to test the relationships between performance expectancy and effort expectancy as independent variables and intention to use PLN Mobile as the dependent variable. Data were collected using a structured questionnaire distributed to customers of PLN ULP Namlea.

The population consists of PLN ULP Namlea customers. The previous research document reported a population of 25,862 customers for the sampling calculation. The sample was selected using purposive sampling. Respondents were required to be PLN ULP Namlea customers, at least 17 years old, have access to a smartphone, and know the PLN Mobile application. The previous survey obtained 167 questionnaires, of which 159 met the criteria for analysis. The present manuscript retains the 159 valid respondents as the empirical sample, subject to confirmation against the final cleaned dataset.

The questionnaire uses a five-point Likert scale ranging from strongly disagree to strongly agree. The measurement model in this focused article consists of 11 indicators: four indicators for performance expectancy (PE1–PE4), four indicators for effort expectancy (EE1–EE4), and three indicators for intention to use PLN Mobile (IU1–IU3). The indicators were retained from the research instrument developed for the study, with the measurement items aligned with the variables included in the current research model.

Data analysis is conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The analysis consists of measurement-model evaluation and structural-model evaluation. Convergent validity is assessed using outer loadings and Average Variance Extracted (AVE), while internal consistency is assessed using Cronbach's alpha and composite reliability. Discriminant validity is assessed using the Heterotrait-Monotrait ratio (HTMT) and, where reported, the

Fornell-Larcker criterion. These procedures follow established PLS-SEM reporting guidance (Hair et al., 2019; Henseler et al., 2015).

The structural model is evaluated through the coefficient of determination (R^2), effect size (f^2), predictive relevance where appropriate, and bootstrapped path coefficients. Hypothesis testing uses the bootstrapping procedure with a five-percent significance level. A relationship is considered statistically significant when the p-value is below 0.05.

4. Result and Discussion

Research Results

The results presented in this section are organized according to the proposed direct-effect model, focusing on the relationships between performance expectancy, effort expectancy, and customers' intention to use PLN Mobile. The measurement and structural models were evaluated using PLS-SEM to assess the proposed relationships.

Table 1. Respondent, Data Screening and Research Model

Item	Value	Note
Questionnaires collected	167	Previous research record
Valid questionnaires analyzed	159	Previous research record
Research constructs	3	PE, EE, IU
Research indicators	11	PE1–PE4, EE1–EE4, IU1–IU3

Source: Authors' analysis based on primary survey data (2026).

Table 2. Measurement Model

Indicator	Construct	Outer Loading
PE1	Performance Expectancy	0.860
PE2	Performance Expectancy	0.840
PE3	Performance Expectancy	0.843
PE4	Performance Expectancy	0.872
EE1	Effort Expectancy	0.822
EE2	Effort Expectancy	0.857
EE3	Effort Expectancy	0.818
EE4	Effort Expectancy	0.877
IU1	Intention to Use PLN Mobile	0.906
IU2	Intention to Use PLN Mobile	0.871
IU3	Intention to Use PLN Mobile	0.863

Table 2 shows that all measurement indicators have outer loading values above 0.70, ranging from 0.818 to 0.906. Performance expectancy indicators range from 0.840 to 0.872, effort expectancy indicators from 0.818 to 0.877, and intention to use indicators from 0.863 to 0.906. The highest outer loading is found for IU1 (0.906), while the lowest is for EE1 (0.818). Overall, the results indicate that all indicators adequately represent their respective constructs and are suitable for further analysis.

Table 3. Convergent Validity and Reliability Results

Construct	AVE	Cronbach's Alpha	Composite Reliability
Performance Expectancy	0.729	0.876	0.878
Effort Expectancy	0.712	0.865	0.870
Intention to Use PLN Mobile	0.775	0.855	0.860

The findings in Table 3 demonstrate satisfactory validity and reliability across all three constructs. The AVE values fall between 0.712 and 0.775, indicating that the constructs account for an adequate proportion of the variance in their respective indicators. Reliability is also supported by Cronbach's alpha values ranging from 0.855 to 0.876 and composite reliability values between 0.860 and 0.878. Taken together, these results suggest that the measurement instruments provide consistent and adequate representation of the constructs used in the study.

Table 4. Discriminant Validity Using HTMT

Construct Pair	HTMT
Performance Expectancy – Effort Expectancy	0.764
Performance Expectancy – Intention to Use	0.776
Effort Expectancy – Intention to Use	0.835

Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) ratio to determine whether the constructs in the model are empirically distinct from one another. As shown in Table 4, the HTMT values range from 0.764 to 0.835. All values remain below the commonly accepted threshold of 0.90, indicating that performance expectancy, effort expectancy, and intention to use PLN Mobile represent distinct constructs. Thus, no substantial discriminant validity concerns were identified, and the measurement model satisfies the required criterion.

Structural Model

Table 5. Coefficient of Determination

Endogenous Construct	R ²	Adjusted R ²
Intention to Use PLN Mobile	0.625	0.618

The coefficient of determination provides an indication of how well the predictors in the structural model explain customers' intention to use PLN Mobile. As reported in Table 5, the R² value for intention to use PLN Mobile is 0.625, with an adjusted R² of 0.618. This indicates that performance expectancy and effort expectancy jointly account for a substantial proportion of the variance in customers' intention to use the application. The adjusted value remains close to the original R², suggesting that the explanatory power of the model is relatively stable after accounting for the number of predictors.

Table 6. Effect Size

Structural Path	f ²
Performance Expectancy → Intention to Use PLN Mobile	0.075
Effort Expectancy → Intention to Use PLN Mobile	0.185

The effect size results provide additional insight into the contribution of each predictor to the intention to use PLN Mobile. Performance expectancy shows an f² value of 0.075, which represents a small effect. In comparison, effort expectancy records an f² value of 0.185, indicating a medium effect. This suggests that both predictors contribute to the explanatory power of the structural model, although effort expectancy has a relatively stronger contribution to intention to use PLN Mobile than performance expectancy.

Table 7. Hypothesis Testing Results

Hypothesis	β / Original Sample	T-statistic	P-value	Decision
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Performance Expectancy → Intention to Use PLN Mobile	0.244	3.084	0.002	Accepted
Effort Expectancy → Intention to Use PLN Mobile	0.387	4.362	0.000	Accepted

The hypothesis testing results provide evidence that both performance expectancy and effort expectancy are positively associated with customers' intention to use PLN Mobile. Performance expectancy has a positive path coefficient of 0.244, with a t-statistic of 3.084 and a p-value of 0.002. This result supports H1, indicating that customers who perceive PLN Mobile as useful for improving the effectiveness of their electricity-related activities tend to have a stronger intention to use the application.

A stronger relationship is observed for effort expectancy. The path coefficient is 0.387, accompanied by a t-statistic of 4.362 and a p-value below 0.001. Accordingly, H2 is supported, suggesting that the perceived ease of learning and using PLN Mobile contributes positively to customers' intention to use the application. Compared with performance expectancy, effort expectancy shows a larger path coefficient, indicating a relatively stronger relationship with intention to use in this research model.

Discussion

The Effect of Performance Expectancy on Intention to Use PLN Mobile

The findings indicate that performance expectancy has a positive and significant relationship with customers' intention to use PLN Mobile. The path coefficient of 0.244, supported by a t-statistic of 3.084 and a p-value of 0.002, provides support for H1. This result suggests that customers are more likely to intend to use PLN Mobile when they perceive the application as useful for completing electricity-related activities.

The finding is consistent with the basic proposition of UTAUT, which identifies performance expectancy as an important determinant of technology acceptance (Venkatesh et al., 2003). In the context of PLN ULP Namlea, the usefulness of PLN Mobile can be associated with practical functions such as digital payment, token purchase, outage reporting, service requests, and access to electricity-related information. When these services are perceived to make transactions more practical or reduce the need to visit conventional service channels, customers have a stronger reason to consider using the application (Nurbaiti et al., 2026).

The relatively small effect size of performance expectancy ($f^2 = 0.075$) provides an additional perspective on this relationship. Although the effect is statistically supported, its contribution is smaller than that of effort expectancy. This may indicate that recognizing the practical benefits of PLN Mobile is important, but perceived usefulness alone may not be sufficient to strongly encourage adoption. Customers may understand what the application can provide while still considering whether they can use those functions easily and confidently (Lai et al., 2024).

This finding also supports previous research reporting a positive relationship between performance-related perceptions and behavioral intention in digital-service adoption (Rizkalla et al., 2023; Makarim et al., 2025). From a managerial perspective, PLN can strengthen this factor by communicating concrete customer benefits rather than merely promoting the number of features available in the application. Demonstrating how PLN Mobile can simplify payment, reporting, and service requests may help customers better recognize its practical value.

The Effect of Effort Expectancy on Intention to Use PLN Mobile

Effort expectancy shows a positive and significant relationship with intention to use PLN Mobile and provides support for H2. The relationship produces a path coefficient of 0.387, with a t-statistic of 4.362 and a p-value below 0.001. Among the two predictors examined in this study, effort expectancy has the larger path coefficient and effect size, with an f^2 value of 0.185, indicating a medium effect.

This result suggests that the ease with which customers can understand and operate PLN Mobile plays an important role in shaping their intention to use the application. For a customer-facing digital service, perceived ease may involve several aspects of the user experience, including registration, login, navigation, finding relevant features, understanding service instructions, and completing transactions. When these processes can be performed without excessive difficulty, customers are more likely to consider PLN Mobile a practical alternative to conventional service channels (Al-Saedi et al., 2020).

The finding is in line with the technology acceptance perspective of Venkatesh et al. (2003) and is also consistent with previous studies that found effort-related perceptions to be associated with technology-use intention (Tusyanah et al., 2021; Priyastomo et al., 2025). The stronger contribution of effort expectancy in the present study is particularly relevant to the PLN ULP Namlea context. Customers may recognize the benefits of digital services, but those benefits will have limited impact on adoption if customers encounter difficulties when navigating or completing services through the application (Mensah & Khan, 2024).

The result therefore points to the importance of maintaining a simple and accessible user experience. Improvements can include clearer menu structures, more recognizable feature labels, simpler service flows, and customer assistance for users who are less familiar with digital applications (Timur et al., 2024). Such efforts may reduce the perceived difficulty of using PLN Mobile and encourage customers who still rely on conventional service channels to gradually adopt digital services (Paramita & Cahyadi, 2024).

Integrated Interpretation and Practical Implications

Taken together, the results show that both performance expectancy and effort expectancy contribute positively to customers' intention to use PLN Mobile. The model explains 62.5% of the variance in intention to use PLN Mobile, indicating that the two predictors provide meaningful explanatory power within the scope of this study. At the same time, the comparison of path coefficients and effect sizes shows that effort expectancy has a stronger contribution than performance expectancy.

This difference offers an important interpretation of PLN Mobile adoption in the PLN ULP Namlea service area. Customers need to see a clear benefit from using the application, but they also need to feel capable of accessing that benefit without

unnecessary difficulty. In other words, the usefulness of the application and the ease of accessing its services should develop together. A feature may provide substantial practical benefits, but its adoption can remain limited when customers find the process difficult to understand or operate.

The findings have practical implications for PLN's digital-service strategy. Communication efforts should emphasize specific benefits that customers can experience, while application development should continue to prioritize simplicity and accessibility. Customer education at service points, demonstrations of key PLN Mobile features, and assistance during the initial use of the application can complement improvements in the application's interface. These measures are particularly relevant where conventional service channels remain available and customers have not yet fully shifted toward digital interaction.

5. Conclusion

This study concludes that both performance expectancy and effort expectancy play important roles in shaping customers' intention to use PLN Mobile at PLN ULP Namlea. Customers are more likely to intend to use the application when they perceive that PLN Mobile provides practical benefits for their electricity-related needs and when the application is easy to understand and operate. Effort expectancy shows a relatively stronger role than performance expectancy, indicating that ease of use is particularly important in encouraging customers to adopt PLN Mobile. These findings highlight the importance of developing PLN Mobile services that are not only functionally beneficial but also simple, accessible, and easy to use, particularly for customers in geographically dispersed and island communities.

From a practical perspective, the findings suggest that encouraging digital-service adoption requires more than communicating the benefits of an application. Customers also need to feel that the application is easy to understand and operate. The study is limited to customers within the PLN ULP Namlea service area, and therefore the findings may not fully represent customers in other geographic or service contexts. Nevertheless, the focused model provides a direct view of two important determinants of PLN Mobile use intention and offers practical insights for improving customer-oriented digital services.

Recommendation

Based on these findings, several practical recommendations can be considered:

- a. PT PLN (Persero) should communicate the practical benefits of PLN Mobile more clearly, particularly functions that can save customers time and reduce the need to access services through physical service points.
- b. PLN ULP Namlea can strengthen customer adoption by providing short demonstrations and direct assistance when customers first use PLN Mobile. The interviews conducted as part of this study indicate that customers' needs and understanding differ depending on their geographical location. Customers in mountainous areas may require greater support due to limited internet connectivity and digital literacy, while customers in coastal areas may benefit more from information on the benefits and features of PLN Mobile. Therefore, socialization and assistance should be tailored to the characteristics of each area.
- c. Since effort expectancy demonstrates the stronger contribution, improvements to the application should give particular attention to ease of use. Clear menu

structures, familiar terminology, easily identifiable features, and straightforward service procedures can help customers complete routine tasks with less difficulty.

Future research may broaden the analysis by incorporating other technology-adoption and contextual factors, such as facilitating conditions, social influence, habit, trust, digital literacy, or perceived service quality. Comparative studies involving different PLN service units or geographic areas could also provide a broader understanding of PLN Mobile adoption

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