ANALYSIS OF COSTUMER BEHAVIOR TO ACHIEVE TARGET USERS OF THE NEW PLN MOBILE APPLICATION USING EXTENDED UTAUT MODEL (CASE STUDY: PT PLN UIW KALTIMRA)

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ABSTRACT

The New PLN Mobile is a mobile application developed by PT PLN (Persero) to help all customers in electricity-related activities. One of the PLN companies that uses Key Performance Index (KPI) to improve the performance of the New PLN Mobile application is PT PLN Unit Wilayah Kalimantan Timur – Utara (UIW KALTIMRA) with the aim of enhancing customer satisfaction. In this study, the analysis was carried out using the extended UTAUT (Unified Theory of Acceptance and Use of The Technology) model with PLS-SEM. The variables include performance expectancy, effort expectancy, social influence, facilitating conditions, trust, information quality, behavioral intention, use behavior, and customer satisfaction. The research involves 105 respondents who have used the New PLN Mobile and are located in the East Kalimantan or North Kalimantan region. There are 8 initial hypotheses and hypothesis testing will be carried out based on the questionnaire data processed in the extended UTAUT model. The results of hypothesis testing indicate that 5 hypotheses are accepted, and 3 hypotheses are rejected. The accepted hypothesis reveals that social influence and information quality have a positive and significant impact on behavioral intention; trust and behavioral intention have a positive and significant impact on use behavior; and use behavior has a positive and significant impact on customer satisfaction. The results of the study provide the basis for managerial implications for PT PLN UIW KALTIMRA. Six magerial implications have been formulated, with four impliactions responded to positively by the company and two implications that cannot be implemented in future.

INTRODUCTION

The use of Information technology (IT) relates to the internet to access various information through software such as mobile apps. The market demand for developing mobile apps has also grown to be five times faster than internal information technology organizations are providing (Tam et al., 2020). One of the companies that contributes to developing information technology in the form of mobile apps is PT PLN (Persero). PT PLN (Persero) has parent units in various regions of Indonesia, one of which is PT PLN East – North Kalimantan Regional Main Unit (UIW KALTIMRA). Services have been carried out by UIW KALTIMRA offline and online. One of the online services that adapts technology is the PLN Mobile application. This application is a service used by customers independently based on mobile apps to get information and communication services between customers and PLN related to electricity easily.

The use of the PLN Mobile application at PT PLN UIW KALTIMRA started in 2019. However, from 2019 to 2020 there was a decrease in the level of application usage for the number of PLN customers, from 24% to 3% and the rating for applications on the Play Store was 2.6. The use of the PLN mobile application is low, and the rating is poor, so PLN transformed the PLN Mobile application into New PLN Mobile which was launched on December 20, 2020. This application has a new and user-friendly look and focuses on features to increase customer satisfaction. The transformation carried out by PLN shows that the use of the New PLN Mobile application has increased. This is evidenced by the development of the use of the PLN Mobile application towards New PLN Mobile from 2019 to 2022 and the customer satisfaction rating according to the Google Play Store is 4.9. The level of users of the New PLN Mobile application at PT PLN UIW KALTIMRA decreased from 2019 to 2020, but there was a significant increase from 2020 to 2022. The increase that occurred from 2020 was caused by the development of applications from PLN Mobile to New PLN Mobile. This can be an opportunity for PT PLN (Persero) to increase users of the New PLN Mobile application so that more customers feel satisfaction with the application.

PT PLN UIW KALTIMRA's target related to New PLN Mobile application users from 2020 to 2022 has been achieved and the target has been increased again for 2023. In 2020, it has a target of 30,000 users as the initial stage of realization of the New PLN Mobile application and has been realized as many as 38,276 from 1,266,043 customers. In 2021, it has a target of 630,000 users and only 549,788 of 1,342,774 customers have been realized. Therefore, PT PLN must continue to increase the number of users of the New PLN Mobile application so that the target is achieved. Thus, this study will analyze the effect of customer satisfaction on the use of the New PLN Mobile application with the Unified Theory of Acceptance and Use of Technology (UTAUT) model adopted from (Venkatesh et al., 2003) and the addition of new variables. Variables consist of 3 namely independent, dependent, and moderate variables. The variables adopted from (Venkatesh et al., 2003) are performance expectancy, effort expectancy, social influence, behavioral intention, use behavior, as well as gender moderation, age, experience, and voluntariness of use. Meanwhile, the new variables as extended UTAUT are trust, information

quality, and customer satisfaction. Trust involves trusting someone with technology that can help daily activities, while information quality is the influence of the social environment on society so that these two variables can affect customer behavior intentions to use the New PLN Mobile application. The main variable of this study is customer satisfaction because this study focuses on customer satisfaction which can be used as an analysis in the use of the New PLN Mobile application. Customer experience was inspired by previous research by (Respect, 2012; Syafila, 2022) related to technology acceptance in e-commerce and QRIS payments as an evaluation and effective response to consumer or user experience in the use of information technology. Then, the independent and dependent variables will be interconnected and moderated with moderate variables, namely gender, age, experience, and voluntariness of use according to the relationship of the variables. The implementation of this extended UTAUT will be used as a recommendation for PLN UIW KALTIMRA in achieving the target of using the New PLN Mobile application in the future.

RESEARCH METHOD

The study of literature consists of basic theories about the methods to be used as well as research that has been done before. Field studies were conducted offline and online observations with PT PLN (Persero) UIW KALTIMRA. The result of this study is that the company wants to increase users of the New PLN Mobile application with the aim of increasing customer satisfaction, so that the company can achieve the target of New PLN Mobile application users every month which will continue to grow. The right method to overcome the problem is to use the UTAUT acceptance model consisting of dependent, independent, and moderate variables (Venkatesh et al., 2003). This model will also be with independent variables, namely trust and information quality, as well as dependent variables, namely customer satisfaction so that it can be said to be an extended UTAUT model which can be seen in figure 1 and the results of extended UTAUT modeling are the basis for determining the hypothesis in this study which can be seen in Table 1.

Table 1. Research Hypothesis

No	Hypothesis
1	H1 Performance expectancy has a positive and significant effect on behavioral intention.
2	H2 Effort expectancy has a positive and significant effect on behavioral intention.
3	H3 Social influence has a positive and significant effect on behavioral intention.
4	H4 Information quality has a positive and significant effect on behavioral intention.
5	H5 Facilitating conditions have a positive and significant effect on use behavior.
6	H6 Trust has a positive and significant effect on use behavior.

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The preparation of the questionnaire was carried out based on the hypotheses in Table 1. The questionnaire contains questions and statements related to variables used in the extended UTAUT model with the condition that the respondents' criteria, namely having used the New PLN Mobile application and domiciled in the provinces of East Kalimantan and North Kalimantan.
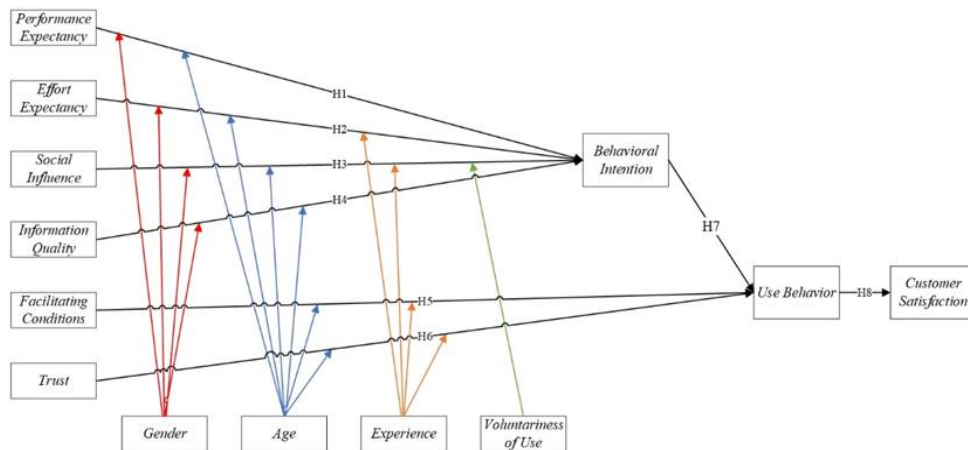

Figure 1. UTAUT Extended Research Modeling

RESULT AND DISCUSSION

Questionnaires have been distributed to 200 respondents who met the criteria, but the responses obtained were 105 questionnaires. This number meets the minimum respondents needed for research with the extended UTAUT model. The questionnaire questions consisted of age, gender, and jobs.
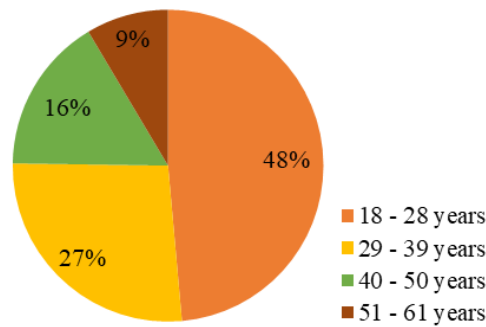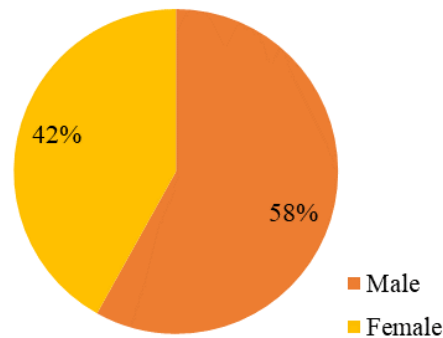

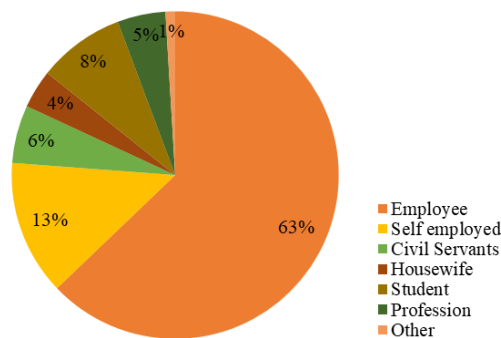Figure 2a. Age

Figure 2b. Gender

Figure 2c. Jobs

Based on Figure 2 (a) shows that most respondents are in the age category of 18 to 28 years because respondents with that age range have a high level of productivity in the world of work; Figure 2(b) shows the majority of respondents were men; and Figure 2(c) shows that the majority of respondents are employed as employees. The results of the questionnaire data obtained have been processed and show reliable and valid data, so that it can be continued for normality and multicollinearity tests. The normality test results show all questionnaires are not normally distributed. However, this is in accordance with the theory of the UTAUT model, namely that data is assumed to be free distribution or not normally distributed. But all results of questionnaire data are free of multicollinearity.

Model Analysis Without Moderation Variables
Outer Model

Internal consistency reliability uses composite reliability (rhoA), convergent validity is measured by average variance extracted (AVE), and discriminant validity uses Heterotrait-Monotrait (HTMT) correlation ratio. Based on the results of outer model analysis with internal consistency reliability and convergent validity tests, it shows that the results of the questionnaire without moderation influence show reliable and valid data.

Model Analysis With Moderation Variables
Outer Model

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Based on the results of outer model analysis with internal consistency reliability and convergent validity tests, it shows that the results of the questionnaire with moderation influence show reliable and valid data.

Inner Model

Inner model analysis in research can use path significance, t – test, coefficient of determination, and effect size. The path significance test shows that the relationship of variables that have effect. Meanwhile, t – test is a test used to test hypotheses with the condition of the level of significance (Russo & Stol, 2021).

Hypothesis Testing

The hypothesis has been analyzed using structural model, so that the results of the hypothesis test can be interpreted in Table 2.

Table 2. Results of Structural Model Analysis for Hypothesis Testing

Code	Relationships Between Variables	Results		Information
		Path Significance	t - test	
H1	PE → BI	No effect	Rejected	Rejected
H2	EE → BI	Effect	Rejected	Rejected
H3	SI → BI	Effect	Accepted	Accepted
H4	FC → UB	Effect	Rejected	Rejected
H5	T → UB	Effect	Accepted	Accepted
H6	IQ → BI	Effect	Accepted	Accepted
H7	BI → UB	Effect	Accepted	Accepted
H8	UB → CS	Effect	Accepted	Accepted

Managerial Implications

Based on five accepted hypotheses, the proposed improvements specified for the company as managerial implications can be seen in Table 3.

Table 3. Managerial Implications

Accepted Hypotheses	Estimated Improvements
Trust has a positive and significant effect on use behavior (H5)	The live chat feature is already available in the New PLN Mobile application, but customers feel a slow response so a customer service team (live chat agent) is needed who can be ready to serve 24 hours a day without distinguishing an area from rural or urban areas. This is done to respond quickly to all disturbances or special requests regarding electricity from customers through the New PLN Mobile application so that it can be resolved faster
Behavioral intention has a positive and significant effect on use behavior (H7)	The features presented in the New PLN Mobile application can be accessed easily (user friendly), but the display can be improved again such as

	using a graphical user interface (GUI) and haptict feedback that is more interesting and simpler so that it is more efficient and informative. In addition, the New PLN Mobile Application can be maintained stable because errors often occur, one of which can reduce the appearance of pop ups.
Behavioral intention has a positive and significant effect on use behavior (H7)	The New PLN Mobile application can open the balance wallet feature like other e-commerce that can be topped up through all banks, digital wallets and mini markets to facilitate transactions
- Information quality has a positive and significant effect on behavioral intention (H6)	kWh monitoring can be made live or real time which can be seen through the New PLN Mobile application so there is no need to monitor directly on the electricity meter
- Use behavior has a positive and significant effect on customer satisfaction (H8)	
Information quality has a positive and significant effect on behavioral intention (H6)	Displays maps, active location features and numbers that can be contacted on the New PLN Mobile application for field officers (disturbance agencies) from PLN who will go to customers' homes when repairs occur and so on
Social influence has a positive and significant effect on behavior intention (H3)	Users of the New PLN Mobile application is still limited, so it is necessary to increase socialization or marketing to the public for the New PLN Mobile application through social media, go directly to the field, collaborate with influencers and other companies, hold promos and so on in detail.

This research raises problems that occur in the PT PLN UIW KALTIMRA company regarding the target of New PLN Mobile application users that have not been achieved in 2023. This can be overcome by analyzing the effect of customer satisfaction that has used the New PLN Mobile application. There are eight hypotheses that will be analyzed to determine the accepted hypothesis. The hypotheses accepted in this study are social influence, trust, information quality, behavioral intention, and use behavior that have a positive and significant effect on the dependent variable. Meanwhile, the influence of gender, age, experience, and voluntariness of use cannot moderate all relationships between variables. The hypothesis will be developed for proposed improvements in the form of managerial implications for PT PLN UIW KALTIMRA

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CONCLUSION

This research raises problems that occur in the PT PLN UIW KALTIMRA company regarding the target of New PLN Mobile application users that have not been achieved in 2023. This can be overcome by analyzing the effect of customer satisfaction that has used the New PLN Mobile application. The analysis was conducted with an extended Unified Theory of Acceptance and Use of Technology (UTAUT) model equipped with independent, dependent, and moderate variables. There are eight hypotheses that will be analyzed to determine the accepted hypothesis. The hypotheses accepted in this study are social influence, trust, information quality, behavioral intention, and use behavior that have a positive and significant effect on the dependent variable. Meanwhile, the influence of gender, age, experience, and voluntariness of use cannot moderate all relationships between variables. The hypothesis will be developed for proposed improvements in the form of managerial implications for PT PLN UIW KALTIMRA.

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