

Research Article

The Influence of Perceived Convenience, Service Features and Trust on E-Toll Using Behavior

Muhammad Fauzan*, M. Ikhsan Harahap, Ahmad Muhaisin B. Syarbaini

Department of Management, Universitas Islam Negeri Sumatera Utara, Medan, Indonesia, 20225

*Corresponding Author: fauzan170801@gmail.com | Phone: +62 895-2971-6019

ABSTRACT

This study aims to analyze the influence of perceived ease of use, service features, and trust on the behavior of using e-toll. E-toll is an innovation in digital payments designed to facilitate transactions on toll roads. Factors such as ease of use, completeness of features, and level of trust in the e-toll system are believed to influence the adoption of this technology by users. This research uses a quantitative approach with a survey method involving 100 randomly selected e-toll users on the North Sumatra toll route. Data were collected through a questionnaire measured using a Likert scale and analyzed using multiple linear regression to examine the relationships between variables. The results indicate that perceived ease of use, service features, and trust, both individually and simultaneously, have a significant influence on the behavior of using e-toll. This study concludes that enhancing the ease of use, completeness of features, and trust in the e-toll system can increase the usage of this service. Therefore, e-toll service providers need to continuously improve these three factors to encourage wider adoption.

Keywords: Perceived Ease of Use; Service Features; Trust; Usage Behavior; and E-toll

1. INTRODUCTION

The development of the times with increasingly rapid technological advances has caused many changes to occur in several countries in the world, one of which is Indonesia, where these changes occur in payment patterns and systems in economic transactions. Instruments or tools for payment have undergone changes, starting from payment tools in the form of cash in the form of conventional metal and paper, now they have developed into a more practical form, namely electronic payment tools. In general, people are more familiar with paper money as a tool for making payments which has become a basic need in almost every community activity (Qulub, 2019). PT. Jasa Marga (Persero) Tbk is a company that manages toll roads in Indonesia with 25 operating concessions. Revenue from toll operations is also the main source of income for this company, especially from E-tolls. Based on the annual report, PT. The following Jasa Marga is an increase in Toll revenue in 2019 – 2023.

Table 1. Total Toll Revenue in Indonesia 2019 - 2023

Year	Total income
2019	10.131
2020	8.763
2021	10.786
2022	12.444
2023	13.948

Source: (PT. Jasa Marga Indonesia Tbk, 2023)

Based on the **Table 1**, it shows the total toll revenue in Indonesia for the last five years, from 2019 to 2023. In 2019, total revenue was recorded at 10,131 billion rupiah. However, in 2020, revenue decreased to 8,763 billion rupiah, which was caused by the impact of the COVID-19 pandemic which reduced people's mobility. Nevertheless, revenue increased again in 2021 to 10,786 billion rupiah, and continued to experience significant growth in the following years. In 2022, total revenue will reach 12,444 billion rupiah, and in 2023, revenue will increase again to 13,948 billion rupiah.

This trend of increasing income shows that the use of toll roads and electronic payment systems such as E-toll is increasingly accepted by the public. This reflects changes in user behavior who prefer practical and efficient payment methods, as well as increasing trust in digital payment systems. Thus, based on total revenue, it reflects positive

developments in the adoption of payment technology in the transportation sector in Indonesia. The development of information technology has brought changes to payment systems in various sectors, including transportation. One of these innovations is the use of e-tolls, which aims to increase the efficiency and comfort of toll road users. However, adoption of this technology does not always run smoothly and is influenced by various factors.

Perception of ease is one of the key factors in the adoption of new technology. Users tend to be more accepting of technology that is considered easy to understand and use. In the context of e-tolls, ease of registration, topping up balances, and using devices are important aspects that can influence user decisions. Apart from convenience, the service features offered also play an important role. Diverse and functional features, such as balance notifications or integration with other applications, can increase added value for users. The quality of this service is often the main differentiator in determining user satisfaction and loyalty towards e-tolls. Trust in the system is also a crucial element. Users should feel confident that their transactions are secure and their personal data is protected. This trust is not only formed from personal experience but is also influenced by the reputation of the e-toll service provider. Providers known to be reliable are more likely to earn the public's trust. On the other hand, user behavior in using e-tolls is influenced by a combination of these three factors. The decision to switch completely to e-tolling often depends on how well perceived convenience, service features and level of trust can meet user expectations. This behavior is important to understand in order to optimize marketing and product development strategies.

Previous research conducted by (Artin et al., 2020) and (Kurnianingsih et al., 2020) shows that perceptions of convenience, trust and service features have a positive influence on usage behavior. Apart from that, this is also supported by research conducted by (Nafisah et al., 2023) showing that user trust has a positive and significant influence on the decision to use mobile banking services. This means that the higher the user's level of trust, the lower the level of risk they perceive when using the mobile banking application. In this research, the main focus is how perceived convenience, service features, and trust influence user behavior in using e-tolls. Perceived ease is defined as how easy users feel when using the e-toll application, including how quickly they can make transactions and how clear the available features are. Service features cover various aspects offered by the application, such as transaction speed, security, and customer support that is ready to help if there are problems.

Apart from that, trust is an important factor because users need to feel confident that the e-toll application is safe and reliable. When users feel that an application is easy to use, has useful features, and they trust its security, they are more likely to use e-tolls regularly, especially in situations that require a fast and practical way to pay tolls. However, there are various obstacles and barriers that users still face in utilizing e-tolls. From technical issues to data security concerns, all these need to be addressed to increase adoption rates. An in-depth study of the influence of perceived convenience, service features, and trust can provide useful insights to address these challenges. By understanding the relationship between these factors and user behavior, service providers can design more effective strategies to increase e-toll adoption. This is ultimately expected to support efforts to increase transportation efficiency and user comfort in this digital era. This is the basis for this research. This research was conducted with the aim of finding out "The Influence of Perceptions of Convenience, Service Features and Trust on Behavior Using E-Toll."

2. RESEARCH METHOD

This research uses a quantitative approach to measure the influence of independent variables, namely perceived convenience, service features, and trust, on the dependent variable, namely behavior using E-Toll. The research location was carried out along the North Sumatra toll road, which was chosen because it is a route frequently used by E-Toll users, thus providing relevant information for this research. The population in this study is all users who pass on the toll road, including various groups such as private car users, public transportation and commercial vehicles. The sample used was 100 people, taken using a simple random sampling technique. According to (Sugiyono, 2017), in this way, every individual in the population has the same opportunity to be selected as a respondent, and selecting a sample of 100 people is considered sufficient to provide a good representation of the population and meet the needs of statistical analysis.

The data used in this research consists of primary data and secondary data. Primary data was obtained from respondents' answers through a questionnaire containing questions regarding perceived convenience, service features, trust and behavior in using E-Toll. Meanwhile, secondary data was taken from research journals and literature studies related to this research topic to support the analysis. Data analysis was carried out in this research using multiple linear regression analysis using the SPSS Version 26 application. Data collection was carried out through direct observation and distributing questionnaires to respondents at the research location. Statements in the questionnaire are measured using a Likert scale where respondents will provide an assessment of each statement. This statement was made based on several indicators, while the operational definition in this research is as follows.

Types of Variabel	Variabel	Definisi Variabel	Research Indicators
Variabel Dependen (Y)	Behavior Using E-Toll (Y)	Using behavior is a person's actions or habits in utilizing or using a product, service or technology (Fensi et al., 2018).	<ol style="list-style-type: none"> The degree to which users are happy to use. Users carry out buying and selling transactions online. Choose to use E-Toll rather than make manual transactions.
	Perception of Ease (X1)	Perceived ease is a person's belief or view of how easy a system or technology can be used (Nyimas Artin, 2020).	<ol style="list-style-type: none"> (easy to learn). (controllable). (clea and understandable) (flexible). (easy to use).
Variabel Independen (X)	Service Features (X2)	Service features are various conveniences or facilities provided by a product or system to make it easier for users to carry out an activity (Meilenyet al., 2020).	<ol style="list-style-type: none"> Ease of access to information. Diversity of transaction services Diversity of features Product innovation.
	Trust (X3)	Trust is the result of consumers' experiences with a brand or company, which includes aspects such as service quality, transaction security, and the reputation of the service provider (Shaw, 2014).	<ol style="list-style-type: none"> Ability Kindness Integrity.

3. RESULTS AND DISCUSSION

1. Characteristics of respondents

Table 1. Characteristics of Respondents Based on Gender

Gender	Total
Male	57
Female	43
Total	100

Based on data obtained from research, the characteristics of respondents based on gender show that out of a total of 100 respondents, 57 of them were men and 43 were women. This shows that the majority of respondents in this study were men. However, in fact the use of e-tolls does not depend on gender, but is more influenced by factors such as perceived convenience, service features and trust.

Table 2. Characteristics of Respondents Based on Age

Based on age (Year)	Total
20 – 25	62
26 – 30	18
30 – 35	9
> 40	11
Total	100

Based on the data obtained, the characteristics of respondents based on age show that the largest age group is respondents aged between 20 and 25 years, with a percentage of 62 people. Furthermore, there were 18 respondents aged 26 to 30 years, followed by the age group 31 to 35 years, numbering 9 people. Meanwhile, the age group over 40 years is 11 people. The 20-25 year age group dominates (62%), and the research results show that age has a significant effect on behavior using e-tolls. Younger respondents tend to be quicker to adopt new technology such as e-tolls because they are more familiar with digital technology. However, it is important to note that all age groups show use of e-tolls, only the adoption rate is higher in younger age groups.

Table 3. Characteristics of Respondents Based on Respondent's Occupation

Occupation	Total
PNS (Sivil Servan)	10
Private employees	21
Self-employed	16
Student	29
Other	24
Total	100

Based on the data obtained, the characteristics of respondents based on work show that the majority of respondents are students, with 29% of the total respondents. Another significant group is private sector employees at 21%, followed by the self-employed at 16%, and civil servants at 10%. In addition, there were 24% of respondents who were in other job categories. Most respondents were students (29%), followed by private sector employees and entrepreneurs. Research finds that work

influences behavior in using e-tolls, with students and private workers using e-tolls more often than civil servants or other groups. This can be attributed to higher mobility and the need for more practical and efficient payment methods in daily activities.

Table 4. Characteristics of Respondents Based on Total Income/Month

Income/month	Total
< Rp. 5.000.000	67
Rp. 5.000.000 – Rp. 10.000.000	25
Rp. 10.000.000 > Rp. 15.000.000	4
< Rp. 20.000.000	4
Total	100

Based on total monthly income, the majority of respondents, namely 67 people, had incomes below IDR 5,000,000. Furthermore, 25 respondents had incomes between IDR 5,000,000 and IDR 10,000,000, while 4 respondents had incomes between IDR 10,000,000 and IDR 15,000,000, and 4 others had incomes of more than IDR 20,000,000. From these results, it can be seen that the majority of respondents are in the lower income group, below IDR 5,000,000 per month. Most respondents had incomes below IDR 5,000,000 (67%). The analysis results show that income has a significant effect on e-toll use. Respondents with lower incomes tend to use e-tolls more often to avoid additional costs that may arise from manual payments. Higher incomes may provide more flexibility in choosing payment methods, but there is still a positive trend towards using e-tolls due to their convenience.

1. Test validity and reliability

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X1.1	58.07	67.844	.696	.940
X1.2	58.07	69.217	.690	.940
X1.3	58.08	67.812	.842	.937
X1.4	58.06	69.370	.743	.939
X1.5	58.08	66.620	.827	.937
X2.1	58.08	67.266	.803	.937
X2.2	58.15	68.775	.764	.939
X2.3	58.20	66.788	.801	.937
X2.4	58.17	69.779	.716	.940
X3.1	58.18	70.028	.679	.940
X3.2	58.20	71.232	.589	.942
X3.3	58.08	70.822	.609	.942
Y.1	58.20	66.545	.807	.937
Y.2	58.90	65.626	.599	.945
Y.3	58.66	62.853	.703	.943

In this study, the r table value with 100 respondents = 0.196. The results of the validity test of this research are as follows. Based on the validity test results in the table above, it shows that all statement items have a calculated r-value that is greater than the r-table value of 0.196. This indicates that all statement items used in the questionnaire are declared valid. Thus, all of these items can be relied upon to be used in measuring research variables, both for the variables of perceived convenience, service features, trust, and behavior using e-tolls. This validity shows that each statement item is able to measure the aspect in question well and is consistent with the research conceptual framework. Therefore, the data obtained from this questionnaire is suitable for use in further statistical analysis. Based on the reliability test results in the table above, it shows that the Cronbach's Alpha value for each variable is above 0.70. This indicates that the research

instrument has a good level of reliability and is consistent in measuring the variables studied. Thus, the questionnaire used in this research is reliable and will provide consistent results if used again.

2. Classic Assumption Test

a. Multicollinearity test

Coefficients^a

Model		95,0% Confidence Interval for B		Collinearity Statistics	
		Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-7.191	-1.063		
	Persepsi Kemudahan	-.067	.351	.315	3.173
	Fitur Layanan	.236	.830	.258	3.879
	Kepercayaan	-.040	.581	.530	1.888

a. Dependent Variable: Perilaku Menggunakan

Based on the results of the multicollinearity test in the table above, it shows that the Variance Inflation Factor (VIF) value for each independent variable is below 10 and the Tolerance value is greater than 0.1. This shows that there are no symptoms of multicollinearity among the independent variables in the regression model. Thus, the variables of perceived convenience, service features, and trust can be used simultaneously in regression analysis without unduly influencing each other.

3. Hypothesis test

a. T test

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.127	1.543		-2.674	.009
	Persepsi Kemudahan	.142	.105	.164	1.352	.001
	Fitur Layanan	.533	.150	.480	3.564	.001
	Kepercayaan	.270	.156	.162	1.728	.004

a. Dependent Variable: Perilaku Menggunakan

Based on the results of the T test in the table above, it shows that the variables of perceived convenience, service features and trust have a significant value (p) smaller than 0.05. This means that each independent variable individually has a significant effect on the dependent variable, namely the behavior of using e-tolls. Therefore, perceived convenience, service features, and trust have an important influence in influencing e-toll user behavior. The behavior variable using e-tolls shows that it is in line with previous research conducted by et (Rossa et al., 2022) and (Sitinjak, 2019) which shows that perceived convenience has a positive and significant effect on usage behavior. Their research confirms that ease of use of technology is one of the main factors influencing the adoption of new technology. In this research, this is a factor because users feel ease at every stage of use, from registration to transactions. Efficient processes, clear navigation, and easily accessible technical support make users feel comfortable and confident in continuing to use e-toll as a payment method. Then, the service feature variable shows that it is in line with research conducted by (Ferdryawan et al., 2024) and (Muthiah et al., 2024), which shows that the service features offered by applications or digital payment systems have a positive and significant effect on behavior. user. The more features a system offers, the higher the rate of adoption and continued use by

consumers. Users will be more likely to use e-tolls regularly if these features make the transaction process easier and reduce the complexity that usually occurs with manual systems. The trust variable shows that the results of this research are also in line with research conducted by (Nizar et al., 2022) and (Pringgadini et al., 2022) which shows that trust plays an important role in influencing users' decisions to continue using digital payment systems. When users feel confident that their transactions are safe and the service is reliable, they are more likely to continue using the service in the long term.

b. F test

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	412.099	3	137.366	39.406	.000 ^b
	Residual	334.651	96	3.486		
	Total	746.750	99			

a. Dependent Variable: Perilaku Menggunakan

b. Predictors: (Constant), Kepercayaan, Persepsi Kemudahan, Fitur Layanan

Based on the F test results in the table above, it shows that the F-calculated value is greater than the F-table, and the significant value (p) is smaller than 0.05. This means that the variables of perceived convenience, service features, and trust simultaneously or together have a significant influence on behavior using e-tolls. Thus, the regression model used in this research is valid to explain the relationship between these variables. The research results of this test are also in line with research conducted by (Romadloniyah et al., 2018) which shows that perceived convenience, service features and trust simultaneously have a significant impact on users' decisions to use digital payment services. When these three factors are met, users are more likely to adopt and maintain use of the system in the long term.

c. Determination coefficient test (R^2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843 ^a	.755	.754	1.867

a. Predictors: (Constant), Kepercayaan, Persepsi Kemudahan, Fitur Layanan

Based on the test results in the table above, it shows that the R value is 0.843, indicating that there is a strong correlation between the independent variables, namely trust, perceived convenience, and service features, with the dependent variable, namely behavior using e-tolls. Meanwhile, the R Square (R^2) value of 0.755 indicates that 75.5% of the variation in behavior using e-tolls can be explained by these three variables. The remainder, namely 24.5%, is explained by other factors not included in this research model. In addition, the Adjusted R Square value of 0.754 takes into account the number of independent variables in the model, thus providing more accurate results regarding how well this model can explain data variability. These values indicate that the regression model used has a very good ability to explain the influence of trust variables, perceived convenience, and service features on e-toll usage behavior.

4. CONCLUSION

The conclusion of this research shows that perceived convenience, service features, and trust have a significant influence on behavior using e-tolls. First, the perception of ease has a positive and significant effect, where the easier the e-toll system is to use, the greater the user's tendency to continue to adopt and use this service. Second, complete service features, such

as real-time balance notifications, easy top-ups, and transaction security, also significantly influence user behavior, making them feel more comfortable and efficient in using e-tolls. Third, trust in the security and reliability of the e-toll system has proven to play an important role in encouraging users to continue using the service. Apart from that, this research also shows that perceived convenience, service features, and trust simultaneously have a significant influence on behavior using e-tolls. These three variables work together to create a positive and optimal user experience, which ultimately encourages users to use e-tolls regularly and sustainably. Improvements in aspects of convenience, completeness of features, and confidence in system security are expected to further encourage e-toll adoption in the community.

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