International Journal of Engineering Business and Social Science
Vol. 1 No. 05, June 2023, pages: 439-466
e-ISSN: 2980-4108, p-ISSN: 2980-4272
https://ijebss.ph/index.php/ijebss

Technology of Acceptance Systems of Toll Roads Payment: Comparison of E-Toll Payment System and MLFF Technology of Trans Sumatera Toll Road

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Keywords
Toll Road, Toll Road Payment System, Multi-Lane Free Flow, Technology Acceptance Model

Abstract
Infrastructure development is one of the drivers of maintaining positive economic growth. Many of the developing countries in the world tend to build toll roads, including Indonesia. Indonesia is a country with a land area of 1.9 million square kilometers, making Indonesia the 15th largest country in the world. Indonesia has been developing toll roads and one of them is Trans Sumatera which is located in Sumatera Island. Hutama Karya as Trans Sumatera toll road authority has responsibility to provide and maintain the toll road quality and service. Replacing the toll payment system from electronic touch payment to non-touch payment with Multi-Lane Free Flow (MLFF) is proposed to meet the Minimum Service Standards on toll roads. This study used the Technology Acceptance Model (TAM) to determine public acceptance perceptions and compare the two payment systems, especially for Trans Sumatra toll road. The study on community intention was conducted using a survey method in three major cities in Sumatra, i.e. Aceh with 104 samples, Pekanbaru with 128 samples, and Palembang with 168 samples, which counts 400 samples in total. The survey results using video stimuli found that both touch and non-touch payment methods were perceived to positively affect perceived ease of use and perceived usefulness and attitude towards service. Attitude towards use positively impacted behavioral Intention, while cost and perceived risk had a negative effect on behavioral Intention. The acceptance of payment technology systems among the Sumatran community for touch payment significantly differs from non-touch payment.

1. Introduction

Infrastructure development, particularly road infrastructure, positively impacts sustainable economic growth. The development of road infrastructure would increase export growth, contributing to economic growth. This is because the road infrastructure could provide mobiity for efficient movements of people and goods, as well as providing accessibility to wide variety of commercial and social activities (Ng et al., 2019). Thus, the low – income countries and also the developing countries tend to build more road infrastructure to strengthen growth (Zhang & Klyuev, 2017) including Indonesia.

Indonesia is a country located in Southeast Asia. It is the 15th largest country in the world, with a 1.9 million square kilometers land area. With 62% of its area covered by seas and waters, Indonesia is known as a maritime country (Indonesia Baik, 2019). It is the world's largest archipelago, with 17,508 islands (KBRI Canberra, 2023). Sumatra Island is one of Indonesia's largest islands and contributes significantly to the country's economy with abundant natural resources and plantation products. Therefore, providing connectivity along the island by constructing The Trans Sumatera toll road is good for citizens in Sumatera and Indonesian.

Through the Presidential Regulation No. 131 of 2022 second amendment to Presidential Regulation No. 100 of 2014, The Trans Sumatra Toll Road is planned to be spanned along the Sumatera Island for more than 2,800 kilometers and will be fully operated in 2024. The Trans Sumatra Toll Road is still relatively new, especially in the sections located in Aceh, Riau, and South Sumatra provinces. Overall, ten toll road sections are divided into 35 segments being built and operated. As of December 2022, only seven segments have been in operation (BPJT, 2022). In other words, the Trans Sumatra Toll Road has not been fully operational, which makes the people in Sumatra, especially in Aceh, Riau, and South Sumatra, still not fully accustomed to using toll roads.

The payment system used in toll roads in Indonesia has undergone significant changes since the opening of the Jagorawi Toll Road in 1978. Initially, cash payment was the only option, which resulted in potential errors and obstacles, such as incorrect payments and slow transaction times. To address this, the government introduced the Automatic Toll Gates (GTO) system in 2017, which enables non-cash payments through electronic money or e-Toll cards. Although the GTO system has reduced transaction time significantly, drivers sometimes forget to top up their e-Toll card balance, causing delays (Sukmana, 2017). In 2022, the government announced a new payment system based on the Global Navigation Satellite System (GNSS) called Multi-Lane Free Flow (MLFF). Users can download the Cantas app, which integrates with satellites to automatically detect and calculate fares, eliminating the need to stop at toll booths. PT Hutama Karya is currently testing the MLFF technology, which is expected to make toll road transactions much more convenient. The transformation will increase the accessibility parameter in order to meet the Minimum Service Standards. However, the transition to this cnncnew system may take time to be accepted by the public (Hutama Karya, 2022).

Figure 1 Toll Payment Transformation
Source: (Fauzi, 2017; Prioutomo, 2022; Sukmana, 2017)

PT Hutama Karya must provide the appropriate toll payment methods that align with the local community's acceptance so that the usage of the Trans Sumatra Toll Road can be increased and function properly in the future. Therefore, researchers feel it is necessary to research the community's acceptance of the payment technology to serve as a reference for managers in developing payment methods strategies in the future. In addition, early adoption of technology is also an important driving force that influences the initial Intention to use technology, potentially resulting in sustainable use (Kwon & Zmud, 1987). The researcher used the Technology Acceptance Model (TAM) as a research model to strengthen the theoretical foundation of these technology adoption factors.

The Technology Acceptance Model (TAM) is a research model commonly used to examine the public acceptance of new technology in various fields of study (Chen et al., 2007; Liao et al., 2018; Phonthanukitithaworn et al., 2015). This research model was first introduced by Davis (1989) and adapted from other theories of information technology acceptance, namely the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) by Icek Ajzen and Martin Fishben. TAM has been widely used in research on technology and information systems because it is considered to have excellent measuring variables.

LITERATURE REVIEW

Toll Road Development in Indonesia

The proposed construction of toll roads in Indonesia began in 1955 when the Mayor of Jakarta, Soediro, suggested it generates revenue for the city government (Joga et al., 2019). However, the first proposal was rejected by

the Regional People's Representative Council because it was seen as a return to colonial-era taxation, with tariffs applied to those using the toll roads. It was also believed that the construction would disrupt daily traffic. As traffic increased in Jakarta, the need for toll roads became more pressing (Semesta, 2022). In 1975, the first toll road construction in Indonesia began, funded by the government and PT Jasa Marga from the private sector as a shareholder for foreign loans (Triwibowo et al., 2020). The first toll road, known as the Jagorawi toll road, connects Jakarta, Bogor, and Ciawi, was completed in 1978. Despite initial opposition, the success of the Jagorawi toll road led to increased government support for toll road development in the 1990s. However, the 1997 financial crisis delayed further progress until 2005, when the government again started to focus on toll road development, and a new regulation was introduced in 2015 to construct the Trans Sumatra Toll Road, which will connect regions from Lampung to Aceh through 24 toll road sections, totaling 2,704 km, with a target completion date of 2024 (Hutama Karya, 2021)

Infrastructure development is an effort to increase a country's productivity and support economic growth. Building toll roads can improve mobility and accessibility for goods and people, resulting in the faster distribution of goods and services. Previous studies have shown that toll road development is linked to the local economy. The studies have found that toll roads play a vital role in developing sectors and generating employment because they have a derived demand nature (Pradono & Pradhitasari, 2011). The existence of toll roads can also facilitate the distribution of goods and create new job opportunities, as evidenced by the emergence of new shops and culinary businesses in areas traversed by toll roads (Sari et al., 2021).

In operating the Toll Road in Indonesia, Toll Road Enterprise must comply with Minimum Service Standard set by the Government through Minister Regulation No. 16 PRT/ M/ 2014. The Indonesian government established the Minimum Service Standards (SPM) to provide the best possible service to the public through toll road management or Toll Road Enterprises (BUJT). Therefore, all indicators specified in the SPM must be adhered to by the responsible BUJT. The Ministry of Public Works and Housing's Toll Road Regulatory Agency (BPJT) regularly monitors and evaluates BUJT compliance with the SPM (Makmur & Rajagukguk, 2015). However, some toll roads in Indonesia have not yet met the SPM. Road users often complain about poor road quality, potholes in the middle of the road, inadequate lighting, and traffic congestion at toll gates. These conditions are still far from ideal, and therefore the government is expected to take steps to address these issues in the future.

To tackle those problems, particularly traffic congestion at toll gates, MLFF technology which consists of Electronic Toll Collection (ETC) technology, allows the toll road user to keep driving without stopping their vehicle for toll payment (Kementerian Keuangan, 2022). MLFF technology is a new adoption of toll road services in Indonesia. Because of that issue, early technology adoption is one of the essential things to influence sustainable technology implementation (Kwon & Zmud, 1987)

As there are many theories have been proposed by scientists regarding the acceptance of information technology by the community. The first theory of information technology acceptance was initiated by Icek Ajzen and Martin Fishben in 1977, who assumed an approach to human behavior through their idea called the Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Motivational Model (MM), and Technology Acceptance Model (TAM), Those theories are the fundamental theories that have influenced the development of human behavior theory.

Previous Research Review

Table 1 Previous Research

Title	Author (Year)	Method	Result
Predicting Electronic Toll Collection Service Adoption: An Integration of The Technology Acceptance Model and The Theory of Planned Behavior	Chen et al., (2007)	*Structural Equation Modelling* (SEM)	Variabel *perceived usefulness* and *perceived ease of use* have a significant role in forming the toll road user's attitude toward adopting ETC technology. The perceived usefulness indirectly affects the driver's Intention to adopt ETC technology through attitude variables.

Title	Author (Year)	Method	Result
Assessing Customer Acceptance Toward Intention to Use e-Toll *Card Using Technology Acceptance Model* (TAM)	Gunawan & Aprianingsih, (2017)	*Multi Linear Regression* dan *Path Analysis*	Perceived usefulness and perceived ease of use variables are significantly related to attitude towards using, while perceived usefulness and attitude towards using variables are significantly related to Intention to use. It means that if someone perceives technology as valuable and easy to use, they will have a positive attitude toward using it and a higher intention to use it.
Adoption of Electronic Toll Application Analysis	Irawan et al., (2016)	*Simple Linear Regression*	The perceived behavioral control variable has a positive influence on Intention to use, the perceived ease of use variable has a positive impact on perceived usefulness, and perceived usefulness has a positive effect on Intention to use.
The Effects of Product-Related, Personal-Related Factors and Attractiveness of Alternatives on Consumer Adoption of NFC-Based Mobile Payments	Pham & Ho, (2015)	*Exploratory Factor Analysis (EFA)* dan *Confirmatory Factor Analysis (CFA)*	The variables of perceived usefulness, perceived ease of use, and perceived cost positively influence the Intention to adopt NFC mobile payments. Meanwhile, the perceived risk variable negatively influences the Intention to adopt NFC mobile payments.
Analysis of Factors That Affect Intention to Use e-Wallet through the Technology Acceptance Model Approach (Case Study: GO-PAY)	Taufan & Yuwono, (2019)	*Structural Equation Modeling* (SEM)	The variable of perceived ease of use has a positive effect on the variable of perceived usefulness, the variable of perceived usefulness has a positive impact on the variable of Intention to use, and the variable of perceived ease of use has a negative impact on the variable of Intention to use.

Research Hypothesis

When a new technology is introduced, it has the potential to offer ease of use. Perceived ease of use is the level of user confidence in a technology/system that requires little effort or is easy to use (Chen et al., 2007). The application of technology considered more straightforward to use than other options is more likely to be accepted by

users (Davis, 1989). The ease of use of technology is more likely to make someone believe that using it can improve their performance, which is called perceived usefulness (Chen et al., 2007). This is in line with previous studies conducted by Chen et al. (2007), Irawan et al. (2016), and Taufan & Yuwono (2019). Thus researchers propose the following hypothesis:
Hypothesis 1a: Perceived ease of use has a positive and significant influence on perceived usefulness in using e-Toll.
Hypothesis 1b: Perceived ease of use has a positive and significant influence on perceived usefulness in using MLFF.

Attitude toward using is a positive or negative attitude shown by a person towards using this technology. If users have the belief that technology is easy to use (perceived ease of use), it is more likely for users to have a positive attitude towards using the technology as shown in research (Chen et al., 2007; Irawan et al., 2016; Taufan & Yuwono, 2019). The researchers propose the following hypothesis:
Hypothesis 2a: Perceived ease of use has a positive and significant influence on attitude toward using e-Tolls.
Hypothesis 2b: Perceived ease of use has a positive and significant influence on attitude toward using in using MLFF.

When someone already has their own opinion about technology, it is believed that this could impact on one's attitude towards the technology (Chen et al., 2007; Irawan et al., 2016; Taufan & Yuwono, 2019), thus researchers propose the following hypothesis:
Hypothesis 3a: Perceived usefulness has a positive and significant influence on attitude toward using e-Tolls.
Hypothesis 3b: Perceived usefulness has a positive and significant influence on attitude toward using in using MLFF.

Perceived usefulness is defined as the extent to which a person feels that using technology could improve their performance (Chen et al., 2007). When a person feels that technology is useful, the likelihood of that person intending to use the technology will increase. This is supported by research on technology adoption in various fields that have been conducted previously (Chen et al., 2007; Suki & Suki, 2011; Wang et al., 2006). In one of the studies on the adoption of mobile payment service technology (M-banking, online shopping, online ticket booking, etc.) it is known that perceived usefulness is one of the variables that has a significant and positive effect on intention to use (Wang et al., 2006). Based on this fact, the researcher proposes the following hypothesis:
Hypothesis 4a: Perceived usefulness has a positive and significant influence on behavioral intention in using e-Toll.
Hypothesis 4b: Perceived usefulness has a positive and significant influence on behavioral intention in using MLFF.

In early studies on technology acceptance, the attitude towards using variables was known to be excluded from technology acceptance theory because it was considered to have no direct influence on behavioral intention (Venkatesh et al., 2003). However, recent studies have revealed that the attitude towards using variable is one of the important variables in determining the behavioral intention of an individual (Bashir & Madhavaiah, 2015; Cao et al., 2021; Tao & Fan, 2017). In their research on the acceptance of AI technology in an organization, Cao et al., (2021) found that attitude towards using has a significant positive influence on behavioral intention. Another study on the adoption of toll payment technology in the form of Electronic Toll Collection (ETC) also concluded that attitude variables have a positive and significant effect on a person's intention to adopt the ETC technology. Based on this, the researcher proposes the following hypothesis:
Hypothesis 5a: Attitude toward using has a positive and significant influence on behavioral intention in using e-Toll.
Hypothesis 5b: Attitude toward using has a positive and significant influence on behavioral intention in using MLFF

Cost is one of the variables that influence an individual's intention to use technology. Cost is defined as the extent to which a person believes that using a technology costs money. In previous studies, the cost variable is known to have a negative influence on a person's intention to use an item, or in the context of this study, technology (Sripalawat et al., 2011; Wang et al., 2006). Therefore, the researcher proposes the following hypothesis:
Hypothesis 6a: Cost has a negative and significant influence on behavioral intention in using e-Toll.
Hypothesis 6b: Cost has a negative and significant influence on behavioral intention in using MLFF

Perceived risk is formed by unexpected things or uncertainties that occur in a purchasing process. In the context of this study, perceived risk is defined as the user's perception of the possible risks that will be obtained when using toll payment technology in the form of e-Toll and MLFF. Previous studies have proven that perceived risk has a negative influence on a person's intention to adopt a technology (Jou et al., 2011; Yang et al., 2015). Based on research related to the adoption of ETC technology as a toll payment method conducted by (Jou et al. (2011), it is known that a

toll road user tends not to want to use ETC if the risk that will be obtained by them is high. Therefore, the researcher proposes the following hypothesis:
Hypothesis 7a: Perceived risk has a negative and significant influence on behavioral intention in using e-Toll.
Hypothesis 7b: Perceived risk has a negative and significant influence on Behavioral intention in using MLFF
Hypothesis 8: Behavioral intention of e-Toll and MLFF has a significant difference

2. Materials and Methods

This research was a quantitative research study that would be analyzed descriptively and comparatively. Quantitative research uses questionnaires to collect data, while descriptive comparative analysis compares and describes the relationship between two or more variables (Cooper & Schindler, 2014). The researcher would use questionnaires in this study to analyze the public's perception of e-Toll and MLFF technologies. The researcher would compare the two technologies using statistical calculations to determine whether there was a significant difference in acceptance. Since the Trans Sumatra toll road was still under construction, the researcher would use videos to simulate the experience of using e-Toll and MLFF technologies. Respondents would watch the videos before answering short questions to ensure they understood the information and that the data obtained was valid.

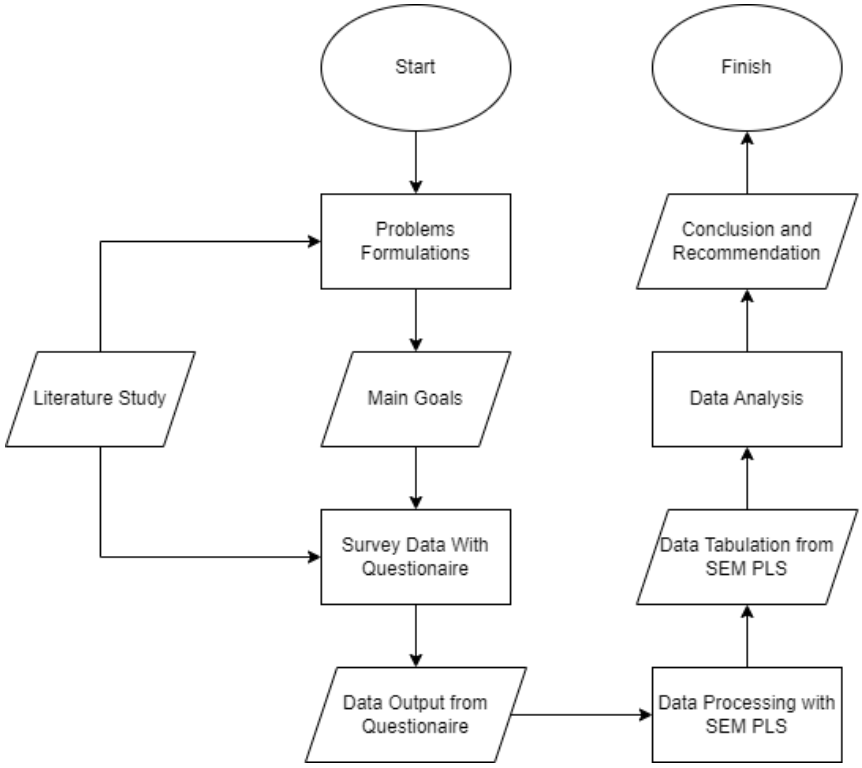

Figure 2 Pipeline Figure

2.2 Research Model

This study uses the Technology Acceptance Model (TAM) to predict the acceptance of new technology in society. TAM has four primary constructs: Perceived Usefulness, Perceived Ease of Use, Attitude Towards Using, and Behavioral Intention to Use. This study would use these constructs along with two additional constructs, cost, and Perceived Risk. The researcher aims to identify the influence of each construct on e-Toll and MLFF technology and the differences in the impact of each construct between the two technologies, specifically on behavioral Intention.

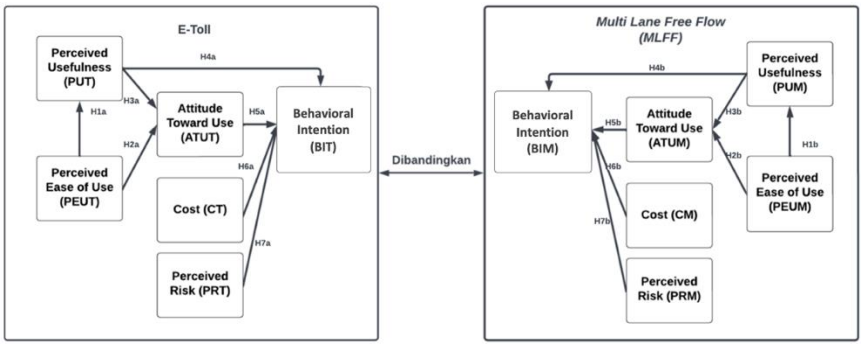

Figure 3 Model Framework

2.3 Variable Operationalization

Providing the research's variables, such as Perceived Usefulness, Perceived Ease of Use, Attitude toward using, Cost, Perceived Risk, and Behavioral Intention to Use, those variables are provided in the form of a table to describe their definition and function below.

Table 2 Variable Operationalization

Variable	Variable Definition	e-Toll	MLFF	Indicator
Perceived Usefulness	To what extent do people believe that technology can improve their performance	PUT1	PUM1	Work much Faster (Davis, 1989)
		PUT2	PUM2	Usefulness (Davis, 1989)
		PUT3	PUM3	Improve trip performance (Davis, 1989)
		PUT4	PUM4	Productivity improvement (Davis, 1989)
		PUT5	PUM5	Improving Effectivity (Davis, 1989)
		PUT6	PUM6	The ease of trip (Davis, 1989)
Perceived Ease of Use	To what extent do people believe that technology can relieve the effort they should make	PEUT1	PEUM1	Easier to learn (Davis, 1989)
		PEUT2	PEUM2	Controllable (Davis, 1989)
		PEUT3	PEUM3	Clear and Concise (Davis, 1989)
		PEUT4	PEUM4	Flexible (Davis, 1989)
		PEUT5	PEUM5	Easier to master it (Davis, 1989)
		PEUT6	PEUM6	Ease of use (Davis, 1989)
		ATUT1	ATUM1	Good Idea (Jou et al., 2011)

Variable	Variable Definition	e-Toll	MLFF	Indicator
Attitude toward Using	Positive or Negative manner shown by someone toward the technology	ATUT2	ATUM2	Wise Idea (Renny et al., 2013)
		ATUT3	ATUM3	Exciting Idea (Renny et al., 2013)
		ATUT4	ATUM4	Positive Idea (Jou et al., 2011)
		ATUT5	ATUM5	Interesting Idea (Renny et al., 2013)
Cost	To what extent do people feel that technology can spend money	CT1	CM1	Higher Cost (Sripalawat et al., 2011)
		CT2	CM2	Spending much money (Pham & Ho, 2015)
		CT3	CM3	Spending additional cost (Sripalawat et al., 2011)
Perceived Risk	People's perception of risk which could be achieved while using technology	PRT1	PRM1	Duration of learning the old system (Yang et al., 2015)
		PRT2	PRM2	Problematic payment system (Yang et al., 2015)
		PRT3	PRM3	Personal data may be exposed (Jou et al., 2011)
		PRT4	PRM4	Toll payment information could be traced (Jou et al., 2011; Yang et al., 2015)
		PRT5	PRM5	Anxiety in the payment process (Yang et al., 2015)
Behavioral Intention to Use	People intend to implement technology	BIT1	BIM1	Intention to implement in the future (Venkatesh et al., 2012)
		BIT2	BIM2	Intention to implement in daily life (Venkatesh et al., 2012)
		BIT3	BIM3	Often to use (Venkatesh et al., 2012)

2.4 Population and Sample

The researcher determines that the population in this study were all people who were residents of Aceh, Riau and South Sumatra Provinces. The Toll Road area covers the provinces of Aceh, Riau and South Sumatra.

In determining the research sample, it is necessary to use a certain method based on consideration for the sample and the sample as part of the population and its characteristics. This study uses non-probability sampling techniques with purposive sampling because this study uses samples that must have certain characteristics, such as :

- Male and female
- Residents of the Province of Aceh, Riau, or South Sumatra
- Above the age of 18 years old and above to obtain a four-wheeled vehicle or more driving license
- Can drive a four-wheeled vehicle or more
- Have never used a toll road and intend to use Trans Sumatra Toll Road

Determining the number of samples in this study refers to Hair et al. (2010) which says that the number of research samples should be one hundred or greater and sample determination can also be done by multiplying the number of question indicators times five to ten. In this study, there are 23 question indicators so that the sample size is needed using the highest multiplier value with a value of ten, the minimum number of samples needed in this study is 230 samples. However, this study will collect data on a minimum of 400 samples. The planned sample distribution is 26% of the sample is the people of Aceh Province with 104 samples, 32% of the sample is the people of Riau Province with 128 samples, and 42% of the sample is the people of South Sumatra Province with 168 samples.

2.5 Data Collection Method

This research technique is carried out by collecting primary data through distributing questionnaires where the questions are based on the operationalization of this research variable to at least 400 sample respondents with predetermined criteria. In its implementation, respondents will be directed to watch a video containing an explanation of the use of e-Toll and MLFF first before filling out the questionnaire.

Literature study research techniques are carried out to strengthen the theoretical basis tailored to factual conditions with references derived from journals, previous research, reports, books, media coverage, and articles related to the research topic being studied.

2.6 Data Analysis Method Using SEM-PLS

The data analysis method in this study uses Structural Equation Modeling with the Partial Least Square (SEM-PLS) approach. SEM-PLS is a non-parametric multivariate data analysis method that can analyze factors and regression so that it can analyze the relationship between indicator variables on latent variables and study the relationship between latent variables (Cheah et al., 2020) The data analysis stages with the SEM-PLS method include measurement model evaluation and structural model evaluation.

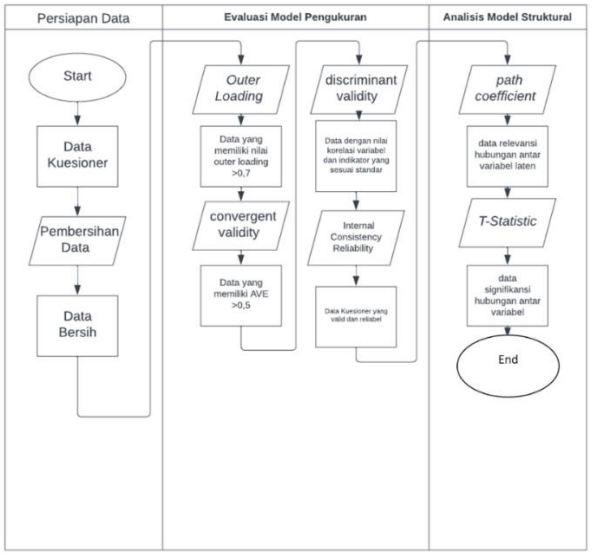

Figure 4 Stages of SEM-PLS Data Analysis

2.7 Measurement Model Evaluation

The data analysis process with the SEM-PLS method begins with an evaluation of the measurement model or outer model evaluation. This evaluation consists of four stages carried out to determine the validity and reliability of indicators with latent variables (J. F. Hair et al., 2015). The measurement model evaluation stages are as follows:

The outer loading value> 0.7 indicates that the construct can explain more than 50% of the indicator variance and means that the indicator can be said to be valid.

Convergent validity is assessed by average variance extracted (AVE). The acceptable threshold is when the AVE value is> 0.5.

Discriminant validity analysis is carried out to reveal the extent to which a variable is empirically different from other variables and to analyze how clearly the indicators of each variable can explain or represent the variable. Discriminant validity analysis is carried out with two approaches, namely:

- Fornell Larcker

This approach is carried out to see the correlation value of variables with the variable itself and variables with other variables. The correlation value of the variable with the variable itself must be greater than the correlation value of the variable with other variables.

- Cross Loading

This approach is used to see the correlation value of variables with their indicators. The correlation value of an indicator that measures a variable must be greater than the correlation value of the indicator with other variables.

Internal consistency reliability is assessed with composite reliability. The acceptable threshold is when the composite reliability value is> 0.7.

2.8 Structural Model Analysis

At this stage, the relationship between latent variables will be analyzed which is described in the relationship between independent and dependent variables. In the SEM-PLS method, the term independent variable is referred to as exogenous and the dependent variable is referred to as endogenous variable (J. F. Hair et al., 2015) The structural model assessment in this study was carried out using several methods, namely:

The calculation of path coefficients in this study was carried out to determine the relevance of the relationship. The range of path coefficients values is described as between -1 to 1. A value closer to 1 indicates a positive relationship between latent variables and a coefficient value closer to -1 indicates a negative relationship between latent variables.

Unlike regression analysis, the SEM-PLS method does not require data distribution assumptions such as normally distributed data or not. Instead, the SEM-PLS method will be bootstrapping to determine the significance of the relationship between latent variables through t values (J. F. Hair et al., 2015).

3. Results and Discussions

3.1 Respondent Profile

In this study, researchers obtained data by distributing questionnaires through Google Form. In the process of filling out the questionnaire, respondents will be asked to watch a video containing a complete explanation related to e-Toll and MLFF. After watching the video, respondents will be asked to fill out a manipulation check containing true or false statements to ensure that respondents really understand the context of the differences between e-Toll and MLFF that have been presented through the video.

Researchers managed to obtain 420 respondent data, but there were 20 respondent data that could not be used in this study because they did not pass the manipulation check stage so that there were only 400 valid data which could then be analyzed in this study. The questionnaire included questions related to personal data to determine the demographic characteristics of the respondents. The researcher collected data related to gender, age, and province of origin.

Table 3 Respondent Demographic Data based on Gender

No	Gender	Total	Percentage
1	Woman	52	13%
2	Man	348	87%

	TOTAL	**400**	**100%**

Table 4 Respondent Demographic Data based on Age

No	Age	Total	Percentage
1	19 – 24	62	15,5%
2	25 – 29	98	24,5%
3	30 – 34	116	29%
4	35 – 39	63	15,8%
5	40 – 44	23	5,8%
6	45 – 49	17	4,3%
7	50 – 54	12	3%
8	55 – 60	9	2,3%
TOTAL		**400**	**100%**

Table 5 Respondent Demographic Data based on Province

No	Province	Total	Percentage
1	Aceh	104	26%
2	Riau	128	32%
3	Sumatera Selatan (Sumsel)	168	42%
TOTAL		**400**	**400**

3.2 Descriptive Statistical Analysis of Research Data

Descriptive statistical analysis of research data is used to provide an overview of the answers given by respondents to the statements previously given in the questionnaire. As explained in the previous chapters, in this study there were a total of 6 independent and dependent variables studied.

Respondents were asked to rate six statements representing six indicators from each variable for the e-Toll and MLFF payment systems. Ratings were measured using a Likert scale from one to five which means "Strongly Disagree", "Disagree", "Neutral", "Agree", and "Strongly Agree" respectively. After that the indicator going through the outer loadings calculation stage, if there was invalid indicator it must be eliminated.

3.2.1 Perceived Usefulness

After going through the outer loadings calculation stage, there is one indicator of perceived usefulness that is invalid so that it must be eliminated, therefore from previously there were six indicators to five indicators of perceived usefulness.

A. E-Toll

Based on the total respondents' answers, by adding up the respondents' answers with points "three" and "four", 35.4% of respondents stated "Agree" and "strongly agree" to the six indicators of perceived usefulness. So it can be concluded that the majority of respondents agree with the benefits of the e-Toll payment system.

Table 6 Distribution of Perceived Usefulness E-Toll Variable Answers

Indicator	Distribution					Total
	SD	D	N	A	SA	

PUT1	29	45	56	47	23	200
PUT2	13	31	80	51	25	200
PUT3	14	38	83	48	17	200
PUT4	20	36	83	42	19	200
PUT5	21	32	79	43	25	200
PUT6	17	32	66	46	39	200
Total	114	214	447	277	148	1200
Percentage	9.5%	17.8%	37.3%	23.1%	12.3%	100%

B. MLFF

Based on the total respondents' answers, 59.6% of respondents gave five points or in other words stated "Strongly Agree" to the six indicators of perceived usefulness. So it can be concluded that the majority of respondents strongly agree with the benefits of the MLFF payment system.

Table 7 Distribution of Perceived Usefulness MLFF Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
PUM1	0	1	4	66	129	200
PUM2	0	1	5	76	118	200
PUM3	0	1	11	84	104	200
PUM4	0	2	9	84	105	200
PUM5	1	2	11	63	123	200
PUM6	0	1	7	56	136	200
Total	1	8	47	429	715	1.200
Percentage	0,1%	0,7%	3,9%	35,8%	59,6%	100%

3.2.2 Perceived Ease of Use

A. E-Toll

Based on the total respondents' answers, 27.2% of respondents gave four points or in other words stated "Agree" to the six indicators of perceived ease of use. So it can be concluded that the majority of respondents agree with the convenience of the e-Toll payment system.

Table 8 Distribution of Perceived Ease of Use E-Toll Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
PEUT1	14	28	33	75	50	200
PEUT2	18	41	67	39	35	200
PEUT3	13	28	36	75	48	200
PEUT4	10	35	72	40	43	200
PEUT5	10	39	67	36	48	200
PEUT6	16	28	36	61	59	200

Total	81	199	311	326	283	1.200
Percentage	6,8%	16,6%	25,9%	27,2%	23,6%	100%

B. MLFF

Based on the total respondents' answers, 60.6% of respondents gave five points or in other words stated "Strongly Agree" to the five indicators of perceived ease of use. So it can be concluded that the majority of respondents strongly agree with the ease of the MLFF payment system.

Table 9 Distribution of Perceived Ease of Use MLFF Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
PEUM1	2	5	9	47	137	200
PEUM2	0	4	23	65	108	200
PEUM3	2	1	10	53	134	200
PEUM4	0	6	34	69	91	200
PEUM5	0	1	13	83	103	200
PEUM6	1	2	7	36	154	200
Total	5	19	96	353	727	1200
Percentage	0,4%	1,6%	8,0%	29,4%	60,6%	100%

3.2.3 Attitude Towards Using

A. E-Toll

Based on the total respondents' answers, by adding up the statements with points three and four, 47.9% of respondents stated "Agree" and "Strongly Agree" to the five indicators of attitude towards using. So it can be concluded that the majority of respondents show a positive attitude towards the e-Toll payment system.

Table 10 Distribution of Attitude Towards Using E-Toll Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
ATUT1	8	30	57	66	39	200
ATUT2	8	23	78	57	34	200
ATUT3	9	23	85	46	37	200
ATUT4	19	20	47	79	35	200
ATUT5	17	18	79	46	40	200
Total	61	114	346	294	185	1000
Percentage	6.1%	11.4%	34.6%	29.4%	18.5%	100%

B. MLFF

Based on the total respondents' answers, 58.4% of respondents gave five points or in other words stated "Strongly Agree" to the five indicators of attitude towards using. So it can be concluded that the majority of respondents show a very positive attitude towards the MLFF payment system.

Table 11 Distribution of Attitude Towards Using MLFF Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
ATUM1	0	1	8	82	109	200
ATUM2	0	2	15	86	97	200

ATUM3	0	1	13	82	104	200
ATUM4	0	2	6	50	142	200
ATUM5	0	1	5	62	132	200
Total	0	7	47	362	584	1.000
Percentage	0%	0,7%	4,7%	36,2%	58,4%	100%

3.2.4 Cost

A. E-Toll

Based on the total respondents' answers, by adding up the statements with points one and two, 38.7% of respondents gave three points or in other words stated "Neutral" to the three indicators of the cost variable. So it can be concluded that the majority of respondents feel the cost of using e-Toll is neither large nor small.

Table 12 Distribution of Cost E-Toll Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
CT1	7	47	81	47	18	200
CT2	8	44	78	51	19	200
CT3	7	39	73	60	21	200
Total	22	130	232	158	58	600
Percentage	3,7%	21,7%	38,7%	26,3%	9,7%	100%

B. MLFF

Based on the total respondents' answers, 65.8% of respondents gave point one or in other words stated "Strongly Disagree" to the three indicators of cost. So it can be concluded that the majority of respondents strongly disagree with the large costs of using the MLFF payment system.

Table 13 Distribution of Cost MLFF Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
CM1	135	18	44	0	3	200
CM2	143	33	18	4	2	200
CM3	117	65	13	3	2	200
Total	395	116	75	7	7	600
Percentage	65,8%	19,3%	12,5%	1,2%	1,2%	100%

3.2.5 Perceived Risk

A. E-Toll

Based on the total respondents' answers, by adding up the statements with points one and two, there were 48.4% of respondents who stated "Strongly Disagree" and "Disagree" with the five indicators of the perceived risk variable. So it can be concluded that the majority of respondents show a positive attitude towards the e-Toll payment system. So it can be concluded that the majority of respondents do not agree that there is a big risk when using e-Toll.

Table 14 Distribution of Perceived Risk E-Toll Variable Answers

Indicator	**Distribution**					**Total**
	SD	**D**	**N**	**A**	**SA**	
PRT1	38	42	43	73	4	200

Indicator	Distribution					Total
	SD	D	N	A	SA	
PRT2	34	74	27	58	7	200
PRT3	107	17	11	59	6	200
PRT4	107	22	12	54	5	200
PRT5	21	22	35	88	34	200
Total	307	177	128	332	56	1000
Percentage	30.7%	17.7%	12.8%	33.2%	5.6%	100%

B. MLFF

Based on the total respondents' answers, 56.7% of respondents gave point one or in other words stated "Strongly Disagree" to the five indicators of perceived risk. So it can be concluded that the majority of respondents strongly disagree with the existence of a large risk from using the MLFF payment system.

Table 15 Distribution of Perceived Risk MLFF Variable Answers

Indicator	Distribution					Total
	SD	D	N	A	SA	
PRM1	106	66	12	7	9	200
PRM2	85	84	15	14	2	200
PRM3	151	34	7	6	2	200
PRM4	150	31	12	5	2	200
PRM5	75	78	27	15	5	200
Total	567	293	73	47	20	1.000
Percentage	56,7%	29,3%	7,3%	4,7%	2,0%	100%

3.2. Behavioral Intention to Use

A. E-Toll

Based on the total respondents' answers, 36.7% of respondents gave three points or in other words stated "Neutral" to the three indicators of the behavioural intention to use variable and there were 23.5% of respondents who gave five points or in other words stated "Strongly Agree" with the three indicators. So it can be concluded that the majority of respondents have a neutral opinion and tend to agree to use the e-Toll payment system.

Table 16 Distribution of Behavioral Intention to Use E-Toll Variable Answers

Indicator	Distribution					Total
	SD	D	N	A	SA	
BIT1	14	34	61	42	49	200
BIT2	14	24	79	35	48	200
BIT3	15	29	80	32	44	200
Total	43	87	220	109	141	600
Percentage	7,2%	14,5%	36,7%	18,2%	23,5%	100%

B. MLFF

Based on the total respondents' answers, 65.0% of respondents gave five points or in other words stated "Strongly Agree" to the three indicators of behavioural intention to use. So it can be concluded that the majority of respondents have a very big intention to use the MLFF payment system.

Table 17 Distribution of Behavioral Intention to Use MLFF Variable Answers

Indicator	Distribution					Total
	SD	D	N	A	SA	
BIM1	1	3	9	48	139	200
BIM2	1	2	10	64	123	200
BIM3	0	3	13	56	128	200
Total	2	8	32	168	390	600
Percentage	0,3%	1,3%	5,3%	28,0%	65,0%	100%

4.3 Inferential Statistical Analysis (Measurement Model Evaluation)

Evaluation of the measurement model in this study aims to see whether the indicators of the items of questions asked on the questionnaire can represent the variables contained in this research model. Each indicator relationship to the variable must be declared valid and reliable so that the data can be analyzed further to see the relationship between variables.

4.3.1 Outer Loadings

Outer loadings analysis is done by looking at the loading factor value of each indicator. This is done to see whether the indicators in this study successfully measure each variable. Indicators that have a loading factor value> 0.6 are declared valid

Table 18 E-Toll Outer Loadings

Indicator	*Outer Loadings*	Description
ATUT1	0,951	Valid
ATUT2	0,957	Valid
ATUT3	0,952	Valid
ATUT4	0,946	Valid
ATUT5	0,947	Valid
BIT1	0,968	Valid
BIT2	0,977	Valid
BIT3	0,972	Valid
CT1	0,940	Valid
CT2	0,953	Valid
CT3	0,967	Valid
PEUT1	0,937	Valid
PEUT2	0,924	Valid
PEUT3	0,953	Valid

Indicator	*Outer Loadings*	Description
PEUT4	0,924	Valid
PEUT5	0,942	Valid
PEUT6	0,934	Valid
PRT1	0,741	Valid
PRT2	0,735	Valid
PRT3	0,918	Valid
PRT4	0,916	Valid
PRT5	0,647	Valid
PUT1	0,855	Valid
PUT2	0,924	Valid
PUT3	0,941	Valid
PUT4	0,922	Valid
PUT5	0,956	Valid
PUT6	0,926	Valid

Table 19 MLFF Outer Loadings

Indicator	*Outer Loadings*	Description
ATUT1	0,951	Valid
ATUT2	0,957	Valid
ATUT3	0,952	Valid
ATUT4	0,946	Valid
ATUT5	0,947	Valid
BIT1	0,968	Valid
BIT2	0,977	Valid
BIT3	0,972	Valid
CT1	0,940	Valid
CT2	0,953	Valid
CT3	0,967	Valid
PEUT1	0,937	Valid
PEUT2	0,924	Valid
PEUT3	0,953	Valid
PEUT4	0,924	Valid
PEUT5	0,942	Valid

Indicator	*Outer Loadings*	Description
PEUT6	0,934	Valid
PRT1	0,741	Valid
PRT2	0,735	Valid
PRT3	0,918	Valid
PRT4	0,916	Valid
PRT5	0,647	Valid
PUT1	0,855	Valid
PUT2	0,924	Valid
PUT3	0,941	Valid
PUT4	0,922	Valid
PUT5	0,956	Valid
PUT6	0,926	Valid

3.3.2 Convergent Validity

The convergent validity test is carried out by looking at the AVE value of each construct or variable used. The AVE value itself can be interpreted as the communality value of a construct. The minimum acceptable AVE value is 0.5. If the AVE value is higher than 0.5, it means that a construct can explain more than 50 percent of the variance of the indicators that build the construct. All variable from E-Toll and MLFF have value higher than 0.5.

Table 20 AVE Value of E-Toll Variable

Variable	AVE	Description
ATUT	0,904	Valid
BIT	0,946	Valid
CT	0,909	Valid
PEUT	0,875	Valid
PRT	0,638	Valid
PUT	0,849	Valid

Table 21 AVE Value of E-Toll Variable

Variable	AVE	Description
ATUM	0,628	Valid
BIM	0,849	Valid
CM	0,810	Valid
PEUM	0,574	Valid

Variable	AVE	Description
PRM	0,619	Valid
PUM	0,597	Valid

3.3.3 Discriminant Validity

The discriminant validity test is carried out to see the extent to which a variable is different from other variables. In this study, there are two methods or approaches used to assess discriminant validity, namely the Fornell-Larcker method and cross loading. In the Fornell-Larcker method, a variable can be said to be valid if the correlation value between a variable and itself is greater than the correlation value between that variable and other variables. Meanwhile, in the cross loading method, what will be compared is the correlation between a variable and an indicator. The correlation value between indicators that measure their variables must be greater than the correlation value between indicators and other variables.

Based on the correlation values that have been calculated using the SmartPLS application, it can be seen that the value located on the diagonal line in the middle or the correlation value between a variable and itself is higher than the correlation value between that variable and other variables. Reviewing this fact, it can be said that the variables in this study have met the standards based on the Fornell-Larcker approach or in other words, the variables used in e-Toll and MLFF payment system research are empirically different from one another.

Table 22 Fornell-Larcker Value of E-Toll Variable

	ATUT	BIT	CT	PEUT	PRT	PUT
ATUT	**0,951**					
BIT	0,815	**0,973**				
CT	0,141	0,064	**0,953**			
PEUT	0,871	0,829	0,062	**0,936**		
PRT	-0,047	-0,135	0,004	-0,085	**0,799**	
PUT	0,836	0,796	0,075	0,855	-0,097	**0,921**

Table 23 Fornell-Larcker Value of MLFF Variable

	ATUM	BIM	CM	PEUM	PRM	PUM
ATUM	**0,793**					
BIM	0,677	**0,921**				
CM	-0,236	-0,269	**0,900**			
PEUM	0,801	0,689	-0,244	**0,785**		
PRM	-0,303	-0,266	0,231	-0,252	**0,787**	
PUM	0,764	0,655	-0,178	0,763	-0,227	**0,772**

Furthermore, based on the cross-loading value that has been generated, it can be seen that the correlation value between the building indicators and the variables is higher than the correlation value between these indicators and

other variables so it can be said that the indicators used to build variables in e-Toll and MLFF payment system research have a valid cross-loading value.

Table 24 Cross-Loading Value of E-Toll Indicator

	ATUT	BIT	CT	PEUT	PRT	PUT
ATUT1	**0,951**	0,815	0,140	0,868	-0,067	0,829
ATUT2	**0,957**	0,761	0,186	0,814	-0,039	0,776
ATUT3	**0,952**	0,761	0,138	0,811	-0,017	0,782
ATUT4	**0,946**	0,758	0,029	0,830	-0,049	0,810
ATUT5	**0,947**	0,776	0,179	0,816	-0,052	0,772
BIT1	0,822	**0,968**	0,081	0,850	-0,107	0,801
BIT2	0,783	**0,977**	0,059	0,787	-0,150	0,767
BIT3	0,771	**0,972**	0,045	0,780	-0,138	0,752
CT1	0,107	0,046	**0,940**	0,043	0,028	0,066
CT2	0,059	0,040	**0,953**	0,006	0,008	0,039
CT3	0,188	0,080	**0,967**	0,095	-0,012	0,091
PEUT1	0,833	0,770	0,001	**0,937**	-0,038	0,789
PEUT2	0,784	0,789	0,093	**0,924**	-0,070	0,805
PEUT3	0,829	0,753	-0,002	**0,953**	-0,067	0,794
PEUT4	0,791	0,769	0,111	**0,924**	-0,086	0,788
PEUT5	0,809	0,776	0,116	**0,942**	-0,095	0,827
PEUT6	0,843	0,798	0,032	**0,934**	-0,122	0,796
PRT1	0,030	-0,074	-0,000	-0,041	**0,741**	-0,078
PRT2	-0,048	-0,103	-0,011	-0,023	**0,735**	-0,057
PRT5	-0,068	-0,127	-0,016	-0,103	**0,918**	-0,088
PUT2	-0,066	-0,141	-0,004	-0,101	**0,916**	-0,100
PUT3	0,012	-0,068	0,081	-0,045	**0,647**	-0,058
PUT4	0,652	0,645	-0,014	0,696	-0,113	**0,855**
PUT5	0,781	0,754	0,104	0,810	-0,085	**0,924**
PUT6	0,756	0,698	0,070	0,757	-0,092	**0,941**

3.3.4 Internal Consistency Reliability

This stage is carried out to see whether the indicators that measure the same variable or construct are related to one another. In this study, the measurement method used is composite reliability by looking at the rhoa and rhoc values.

The minimum rho value to be considered reliable is 0.7 while the maximum value is 0.95. The greater the rho value, the higher the reliability of the research variables and indicators. Based on the calculation rho value of E-Toll and MLFF is between 0,7 – 0,95 that means both payment method is reliable

Table 26 Composite Reliability Value of e-Toll Variables

Variable	Rho_A	Rho_C	Description
ATUT	0,973	0,979	Reliable
BIT	0,972	0,981	Reliable
CT	1,137	0,968	Reliable
PEUT	0,972	0,977	Reliable
PRT	0,911	0,896	Reliable
PUT	0,968	0,971	Reliable

Table 27 Composite Reliability Value of e-Toll Variables

Variable	Rho_A	Rho_C	Description
ATUM	0,856	0,894	Reliable
BIM	0,915	0,944	Reliable
CM	0,914	0,928	Reliable
PEUM	0,856	0,890	Reliable
PRM	0,952	0,890	Reliable
PUM	0,867	0,899	Reliable

3.4 Inferential Statistical Analysis (Structural Model Evaluation)

The structural model analysis in this study aims to see the direction of the relationship between variables and also to see the significance of the influence of exogenous variables on endogenous variables. To see the direction of the variable relationship, researchers analyzed the path coefficient value. Meanwhile, to see the significance of the influence of variables, researchers analyzed the T-Statistic value.

3.4.1 Path Coefficient

The path coefficient is used to see the relevance and direction of the relationship between exogenous variables and endogenous variables. The path coefficient value is usually in the range -1 to +1 with a coefficient value close to -1 representing a strong negative relationship and a coefficient value close to +1 representing a strong positive relationship. Based on both calculations The strongest relationship is shown by the perceived ease of use and perceived usefulness variables. Meanwhile, the weakest relationship is shown by the variable cost and behavioral intention to use

Table 27 Path Coefficient Value of E-Toll Model

	Path Coefficients
ATUT -> BIT	0,515
CT -> BIT	-0,036
PEUT -> ATUT	0,583

	Path Coefficients
PEUT -> PUT	0,855
PRT -> BIT	-0,075
PUT -> ATUT	0,337
PUT -> BIT	0,360

.

Table 28 Path Coefficient Value of MLFF Model

	Path Coefficients
ATUM -> BIM	0,384
CM -> BIM	-0,108
PEUM -> ATUM	0,522
PEUM -> PUM	0,763
PRM -> BIM	-0,049
PUM -> ATUM	0,366
PUM -> BIM	0,331

3.4.2 T-Statistic (Bootstrapping)

The bootstrapping analysis stage is carried out with the aim of seeing the significance of the influence of exogenous variables on endogenous variables. In this stage of analysis, the influence of variables can be said to be significant if it has t-values> 1.96. Likewise, if the t-values < 1.96, then the variable relationship can be stated to have no significant effect.

Based on the tables below, it can be seen that almost all of the t-count values obtained have a value greater than the t-table whose value is 1.96. The only relationship that does not have a t-count value above 1.96 is the relationship between the cost variable and the behavioral intention to use variable, which means that the relationship between the two variables is not significant.

Table 29 T-Statistic Value of e-Toll Model

	T-Values	**Description**
ATUT-> BIT	8,144	Significant
CT -> BIT	**0,876**	**Insignificant**
PEUT -> ATUT	7,991	Significant
PEUT -> PUT	44,338	Significant
PRT -> BIT	**1,784**	**Insignificant**
PUT -> ATUT	4,473	Significant
PUT -> BIT	4,576	Significant

Table 30 T-Statistic Value of MLFF Model

	T-Values	Description
ATUM -> BIM	3,894	Significant
CM -> BIM	**1,948**	**Insignificant**
PEUM -> ATUM	8,996	Significant
PEUM -> PUM	16,311	Significant
PRM -> BIM	**0,900**	**Insignificant**
PUM -> ATUM	5,785	Significant
PUM -> BIM	3,971	Significant

3.5 Hypothesis Testing Results

The hypothesis in this study is related to the direction of the relationship between variables, the significance of the influence relationship, and the significance of variable differences. This study uses a significance level α of 5%. Hypothesis testing related to the significance of the influence relationship is carried out with the following analysis criteria:

1. If T-Value > 1.96 then there is a significant effect and the hypothesis is accepted.
2. If T-Value < 1.96 then there is no significant effect and the hypothesis is rejected.

Hypothesis testing related to the significance of variable differences is carried out with the following analysis criteria:

1. If the Asymp.Sig (2-tailed) value <0.05, then there is a significant difference, or the hypothesis is accepted
2. If the Asym.Sig (2-tailed) value> 0.05, then there is no significant difference, or the hypothesis is rejected

3.5.1 Research Model Hypothesis of e-Toll Payment System

Table 33 Research Model Hypothesis Decision e-Toll Payment System

Hypothesis	Model	*T-Values*	ttabel	Decision	Conclusion
H1a	PEUT -> PUT	44,931	1,96	H1a accepted	Significant
H2a	PEUT -> ATUT	7,933	1,96	H2a accepted	Significant
H3a	PUT -> ATUT	4,355	1,96	H3a accepted	Significant
H4a	PUT -> BIT	4,811	1,96	H4a accepted	Significant
H5a	ATUT -> BIT	6,518	1,96	H5a accepted	Significant
H6a	CT -> BIT	0,969	1,96	**H6a rejected**	**Insignificant**
H7a	PRT -> BIT	1,724	1,96	**H7a rejected**	**Insignificant**

Based on the table above, it can be concluded as follows:

1. **H1a is accepted**, meaning that perceived ease of use has a positive and significant effect on perceived usefulness in using e-Toll, where the easier it is to use e-Toll, the stronger the public's perception of the usefulness of e-Toll.
2. **H2a is accepted**, meaning that perceived ease of use has a positive and significant effect on attitude towards using e-Toll, where the easier it is to use e-Toll, the more people will show a positive attitude towards using e-Toll.

3. **H3a is accepted**, meaning that perceived usefulness has a positive and significant effect on attitude towards using in using e-Toll, where the more people have the perception that the e-Toll payment system is useful, the public will have a positive attitude towards using e-Toll.
4. **H4a is accepted**, meaning that perceived usefulness has a positive and significant influence on behavioral intention in using e-Toll, where the more people have the perception that the e-Toll payment system is useful, the more people will have the intention to use the e-Toll payment system.
5. **H5a is accepted**, meaning that attitude towards using has a positive and significant influence on behavioral intention in using e-Toll, where when people have a positive attitude towards using the e-Toll payment system, people will have the intention to use the e-Toll payment system.
6. **H6a is rejected**, meaning that cost has a negative influence but insignificant on behavioral intention in using e-Toll.
7. **H7a is rejected**, meaning that perceived risk has a negative influence but insignificant on behavioral intention in using e-Toll.

3.5.2 Research Model Hypothesis of MLFF Payment System

Table 34 Research Model Hypothesis Decision e-Toll Payment System

Hypothesis	Model	*T-Values*	table	Decision	Conclusion
H1b	PEUM -> PUM	16,395	1,96	H1a accepted	Significant
H2b	PEUM -> ATUM	9,397	1,96	H2a accepted	Significant
H3b	PUM -> ATUM	5,838	1,96	H3a accepted	Significant
H4b	PUM -> BIM	3,548	1,96	H4a accepted	Significant
H5b	ATUM -> BIM	3,514	1,96	H5a accepted	Significant
H6b	CM -> BIM	1,782	1,96	**H6a rejected**	**Insignificant**
H7b	PRM -> BIM	0,892	1,96	**H7a rejected**	**Insignificant**

Based on the table above, the conclusions can be drawn as follows:

1. **H1b is accepted,** meaning that perceived ease of use has a positive and significant influence on perceived usefulness in using MLFF, where the easier it is to use MLFF, the stronger the public's perception of the usefulness of MLFF.
2. **H2b is accepted**, meaning that perceived ease of use has a positive and significant effect on attitude towards using MLFF, where the easier it is to use MLFF, the more people will show a positive attitude towards using MLFF.
3. **H3b is accepted**, meaning that perceived usefulness has a positive and significant effect on attitude towards using MLFF, where the more the public has the perception that the MLFF payment system is useful, the public will have a positive attitude towards using MLFF.
4. **H4b is accepted**, meaning that perceived usefulness has a positive and significant influence on behavioral intention in using MLFF where the more people have the perception that the MLFF payment system is useful, the more people will have the intention to use the MLFF payment system.
5. **H5b is accepted**, meaning that attitude towards using has a positive and significant influence on behavioral intention in using MLFF where when the public has a positive attitude towards using the MLFF payment system, the public will have the intention to use the MLFF payment system.
6. **H6b is rejected**, meaning that cost has a negative influence but insignificant on behavioral intention in using MLFF.
7. **H7b is rejected**, meaning that perceived risk has a negative influence but insignificant on behavioral intention in using MLFF.

3.5.3 Research Model Hypothesis of MLFF Payment System

Table 35 Hypothesis Decision Variable Difference

Hypothesis	Model	Asymp.Sig (2-tailed)	Decisision	Conclusion
H8	BIT ≠ BIM	0,000	H8 accepted	Significant

Based on the table above, the conclusions that can be drawn are as follows:

1. **H8 is accepted**, meaning that people's intention to use the e-Toll and MLFF payment systems is significantly different.

Then based on the mean ranks obtained as presented in table 4.35, the value possessed by the MLFF behavioral intention variable (259.25) is higher than that of e-Toll (141.75) so it can also be concluded that respondents have a higher intention to use MLFF as a toll payment system

4. Conclusion

Based on the research conducted, the following conclusions can be drawn below :

1. In the e-Toll payment system, perceived ease of use has a positive and significant impact on perceived usefulness. Perceived ease of use and perceived usefulness have a positive and significant effect on attitude toward use. Perceived usefulness and attitude toward use have a positive and significant influence on behavioral intention. Perceived risk has a negative and insignificant effect on behavioral intention. Meanwhile, cost and perceived risk do not have a significant effect on behavioral intention.
2. In the MLFF payment system, perceived ease of use has a positive and significant effect on perceived usefulness. Perceived ease of use and perceived usefulness have a positive and significant effect on attitude toward use. Perceived usefulness and attitude toward use have a positive and significant influence on behavioral intention. Meanwhile, cost and perceived risk do not have a significant effect on behavioral intention.
3. There is a significant difference between people's intention to use the e-Toll and MLFF payment systems. People are more likely to use the MLFF payment system than e-Toll if it is later implemented on toll roads in the area. This community decision is influenced by the benefits and convenience of the MLFF payment system.

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