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DETERMINING FACTORS OF INTEREST IN THE USE OF TECHNOLOGY READINESS BASED MULTI LANE FREE FLOW (MLFF)

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Abstract: *One of the countries with the most vehicle users in the world is Indonesia. The increasing number of vehicle users causes traffic jams, especially in big cities. Toll roads are a solution to get to your destination quickly and avoid traffic jams. One of the smoothness on the toll road is influenced by the service time at the toll gate when making transactions. However, traffic jams at toll gates cannot be avoided due to the long transaction time at toll gates. The plan to implement Multi Lane Free Flow or multi-lane non-stop toll payments is a system that allows toll road users not to need to stop or slow down their vehicles for transactions at toll gates. Socialization and belief in new technology is the current focus. Therefore it is necessary to carry out an analysis of public interest in the implementation of the electronic transaction system that will be implemented, the response of toll road users and the interest of toll users to use contactless Multi Lane Free Flow (MLFF) technology. The method in this research is descriptive analysis to analyze the characteristics of the user towards the contactless system at toll gates based on Multi Lane Free Flow (MLFF) using the Modified UTAUT Model. This study was then analyzed using Moderate Linear Regression using SEM-PLS to find out the factors that influence the interest in using contactless Multi Lane Free Flow (MLFF) with the analysis of the effect of the variables Performance Expectancy, Effort Expectancy, Social Influence, Habit on the use of the new Multi Lane Free technology Flow (MLFF) by adding Technology Readiness as a moderating variable using Partial Least Square (PLS). The results of the analysis show that the characteristics of the respondents are related to the interest in using MLFF which can be shown in terms of income, occupation, gender, age, frequency of use of toll roads, segments of toll road use and reasons for using toll roads and the UTAUT Model, namely Performance Expatancy and Social Influence, have an effect on interest in using technology. MLFF except for the Effort Expatancy and Habit variables. Technology Readiness also supports the influence of UTAUT (Performance Expectancy, Effort Expectancy, Social Influence, Habit) on Behavior Intention except that the Performance Expaectancy variable does not depend on Technology Readiness and from the analysis results the use of MLFF is more efficient when used in dense cities like Jabodetabek and less efficient when used in the area is not congested because there is no delay at the toll gate.*

Keywords: *Multi Lane Free Flow , Model UTAUT , Technology Readiness , SEM-PLS*

1. Introduction

Indonesia is one of the countries with the most vehicle users in the world. The increasing number of vehicle users causes traffic jams, especially in big cities. People tend to choose toll roads as an alternative for special traffic of four-wheeled vehicles or more to get to their destination quickly because toll roads provide advantages in the form of more smooth traffic compared to ordinary roads. One of the smoothness on the toll road is influenced by the service time at the toll gate when making transactions. However, in reality long queues remain unavoidable at toll gates when vehicles enter or leave, especially during pick hours in big cities because of the length of transaction time (Sofian R, 2018)

The high demand for transport results in huge traffic jams. In terms of the toll road system, congestion at toll plazas is one of the critical locations that will have an impact on the environment and human life due to these emissions. To overcome this kind of problem and make it easier for vehicles to pass through toll booths as quickly as possible, the electronic toll collection system (ETC) is the latest technology that allows toll fees to be collected automatically without human interaction and delays.

Multi Lane Free Flow (MLFF) or multi-lane non-stop toll road payments, is a system used to make transactions at toll gates that allow toll road users not to need to stop their vehicles or slow down their vehicles to transact at toll gates. This study is intended to see the readiness of the government and society, especially in the aspect of technology selection. However, there are still many obstacles to its implementation, socialization and untested comfort for toll road users as well as user safety when passing toll gates with speed limits above the average safe speed limit.

In the Regulation of the Minister of Public Works No. 16/PRT/M/2014 which regulates the Minimum Service Standards (SPM) for toll roads is important to become a guideline. On the other hand, the President asked the Minister of PUPR to eliminate congestion at toll gates immediately, especially in big cities (BPJT, 2018). In following up on these directives, BPJT as the person in charge compiled the concept of the Intelligent Transport System (ITS) roadmap, which includes Non-Cash Toll Transactions, which are regulated in PUPR Ministerial Regulation No. 16/PRT/M/2017.

Therefore it is necessary to carry out research related to the interest or response of toll road users and the willingness of toll users to use Multi Lane Free Flow (MLFF) with several aspects as well as the advantages and disadvantages obtained by toll road operators and toll road users. which can later be used as input for parties involved in implementing the MLFF system that will be implemented later.

2. Literature Review

2.1 Model Unified Theory Of Acceptance And Use Of Technology 2

The UTAUT model is a model for using technology created by (Venkatesh et al., 2003). UTAUT is composed of theories about technology acceptance behavior that incorporate several other research theories and then developed by (Venkatesh et al., 2003) so that it becomes the current model by looking at and researching previous models.Venkatesh and other researchers developed the UTAUT model into UTAUT 2 in 2013. The UTAUT 2 model is a further development by adding several theories for the acceptance and use of technology for users (Venkatesh et al., 2012). The concept of adding 3 additional variables and replacing the relationship from the previous concept and later becoming a new

relationship concept is the goal of the latest UTAUT 2 Model (Venkatesh et al., 2012). Three constructs were added related to habit, hedonic motivation and price to strengthen the previous relationship (Pertiwi et al, 2017).UTAUT was originally a development of the Technology Acceptance Model (TAM in 2003 which had four variables related to the intention to use technology, namely performance expectancy, social influence, effort expectancy and facilitating conditions.In UTAUT 2 there is the addition of the first variable Hedonic Motivation reads consumer behavior towards the use of technology, second is Price Value because consumers who incur costs can be in accordance with the benefits of using technology; and thirdly Habit because it can predict consumer habits in using a technology (Venkatesh et al., 2012).

2.2 Toll Road Service Definition and Standards

Toll roads are one of the public roads that are part of the road network system and are national roads, where toll road users are required to make transactions according to the applicable toll rates (Ministerial Regulation, 2018). The government's goal of building toll roads is mainly to facilitate traffic transportation in developing areas, increase economic growth through increasing the distribution of goods and services, increasing the distribution of development results, and easing the burden on government funds through the participation of road users (Toll Road Regulatory Agency, 2019).Meanwhile, based on Minister of Public Works Regulation No. 16, Minimum Toll Road Service Standards, payment transactions at the entrance gate take a maximum of 5 seconds for each vehicle with a maximum queue length of 10 vehicles under normal conditions (2014). The Multi Lane Free Flow (MLFF) transaction model is a solution for time-based toll schemes (Manzi, 2015) that can reduce the risk of congestion in the toll gate area. Toll roads are regulated by the Toll Road Regulatory Agency (BPJT). BPJT is a body formed to regulate all toll road operations in Indonesia. The toll road itself was built with the intention of realizing equitable development of the transportation system and fair regional development, while the implementation of toll roads is intended to improve the economy of distribution services, especially in areas that are already congested and have high growth rates. In other words, toll roads are development to facilitate traffic in Congested areas and toll roads can also reduce the burden of road maintenance and maintenance funds for the government which are borne by toll road users. The substance of the minimum service standard (SPM) for toll roads is in accordance with Minister of Public Works Regulation No.16/PRT/M/2014 which regulates toll road SPM. There are 2 indicators to improve toll road service standards:

(1) Transaction speed
(2) Total average number of queues.

2.3 Multi Lane Free Flow System

Multi Lane Free Flow is a form of ETC and a new system in multi-lane non-stop transactions at toll gates where vehicles do not need to stop or reduce their vehicle speed at the toll gate. The MLFF system will later identify vehicles for transactions at toll gates. Multi Lane Free Flow has the following functions:

1) To process transaction information from vehicles passing through toll gates
2) So that the system can process transactions forwarded to management as a transaction process
3) To protect data leakage used for transactions at toll gates
4) Supervision of proper functions and activities at toll gates

Multi Lane Free Flow has many advantages, namely shortening travel time and no congestion at toll gates so that it can accelerate logistics mobility in Indonesia

2.4 Electronic Tol Collection Technology

There are alternative tools that can be used as ETC Technology based on Multi Lane Free Flow, including the following (BPJT, 2018):

1. Dedicated Short Range Communication (DSRC); is a tool that uses a 5.8 Ghz radio frequency with the condition that the user must purchase an additional OBU tool with a valid level of 99.5%.
2. Automatic Number Plate Recognition (ANPR); is a tool that detects vehicle number plates and requires vehicle data on ownership, rates used are flat and post paid and are usually supported by other technologies for enforcement,
3. Global Navigation Satellite System (GNSS); requires OBU and can track the user's location and the tariff that will be used according to the user's location. This tool is still constrained in other countries but is very accurate for applying fares based on distance and time
4. Radio Frequency Identification (RFID); devices such as radios with frequencies (860–960) Mhz and users need to buy a sticker as the identity of the vehicle that will pass the toll road with 99.5% accuracy

2.5 Consumer Behaviour

Consumer behavior is behavior that is owned by consumers to use or spend goods, services, ideas or others to meet personal satisfaction and needs. Evaluating and activity in all activities carried out and a person's psychological processes that encourage someone before buying or using an item and service is consumer behavior according to (Hawkins, n.d.). Internal factors and external factors influence consumer behavior. Culture, sub-culture, demographics, social influence, reference groups, family, and marketing activities are some of the external factors.

While perception, learning process, memory, personality, emotions, and attitudes are internal factors (Hawkins, 2010). Based on some of the existing information, it can be interpreted that consumer behavior is the action of consumers to choose, use and spend a product to meet the needs and desires of consumer behavior can be used to make marketing activities and see the potential of consumers.

2.6 Behaviour Intention

Behavioral intention to use technology is defined as the level of desire to use a system that is carried out continuously by someone assuming that someone already has an understanding of information. Users will feel interested in technology if it can make it easier or beneficial for work and performance increases, using technology is believed to be possible. easily if the user gets influence from the surrounding environment on the application of this technology (Venkatest, V, 2003).

According to Kotler (2012) a person's interest is something that arises after receiving interest from the technology seen, then there is a desire to want and own or use it. The Technology Acceptance Model or TAM shows a person's behavior can be used to see interest, therefore the attitude shown will influence demand and can be seen subjectively. According to Haditomo in Eko (2019) there are two factors that affect interest, namely factors from within the individual himself and secondly factors from the

environment around the individual that can influence the individual's interest. For this reason, it can be interpreted that behavior intention is someone's interest in using something related to someone's desire or willingness to be interested in an object or information technology.

2.7 Perfomance Expetancy

Performance Expectancy described as an individual's belief that using the system can help them complete their work and improve their performance. Meanwhile, Venkatesh et al. (2003) define performance expectation as the level at which an individual believes that using the system will help them improve their performance. Indicators: benefits, time-saving, cost-effective, labor-saving. While Al-Gahtani et al., (2007) and; Venkatesh, V., Thong, J.Y.L. and Xu, X.; 2012) interpret performance expectancy as a form of belief in benefits, better usability, more efficient use.

2.8 Effort Expetancy

Effort Expectancy is the ease of use of the system (Venkatesh, Morris, Davis, & Davis, 2003). The easy use of the latest technology can lead to the perception that there is a sense of comfort in using it. However, if the system is felt to be difficult to use in work, the feeling of comfort in using the system will not exist and later the use of the system will be felt to be reduced. The level of ease in using technology can be interpreted as effort expectancy (Venkatesh et al., 2012).Park and Ohm (2014) have shown that the user friendliness of mobile applications has a significant positive influence on the adoption of mobile applications because less effort is required to use the application. .Each individual will believe that convenience will affect interest in the use of technology because it can save energy and time for activities. Venkatesh et al., (2012) and Hew et al., (2015), measure effort expectancy using ease of learning, ease of understanding, simple and easy to use.

2.9 Social Influence

Social influence can be seen from the environment on individuals in the use of the new system (Venkatesh et al., 2003). This means that the more environmental influences in the use of a technology, the greater the desire of these users to demand more to use new technologies due to the influence of the social environment, especially the surrounding environment. Venkatesh et al. (2012) described social influence as the extent to which an individual's concern is about the importance of the perceptions and opinions of other people for that person. Sulaiman et al. (2015) also validated social influence as a driving force for the behavior of using electronic library services. These various theoretical and empirical studies show that individuals tend to meet other people's expectations and have an impact on the individual's behavior.

2.10 Habit

Habit is the last variable of UTAUT. According to Venkatesh et al. (2012), habits are repetitive behaviors that come from the learning process. This requires an initial strategy that helps users understand the use of technology. When such a learning process is successful, users feel that the technology is easy to use. This perception then drives repeated behavior. The more people get used to using technology, the more they can use it continuously.

Habits shown by repetitive behavior make people accustomed to it, so that it has an impact on interest in using e-commerce technology (Liao et al., 2006 and Tak & Panwar, 2017). Habit also affects a person's interest in using financial technology (Raza et al. (2017). Habit is a factor that influences users' interest in adopting technology among students (Handoko, 2020). Habits are likely to influence interest.

2.11 Hypothesis test

Hypothesis testing is needed to see whether a hypothesis that is researched and proposed is rejected or acceptable. A hypothesis is an assumption or statement that may be true or false about a population. By looking at data from the entire population, it can be seen that the hypothesis of a study is true or false.

The goodness of fit test or the UTAUT influence model test and technology readiness on behavior intention. The test was carried out by looking at the Coefficient of Determination (R2), the SRMR, NFI and RMS Theta tests. The greater the value of the termination coefficient, the better the predictive ability of the independent variable. Likewise with other indicators, where SRMR <0.08, NFI > 0.90 and RMS Theta <0.12

The test of the significance of the effect between variables can be seen whether the independent or predictor or independent variable (X) has a significant effect on the dependent variable or response or dependent (Y). Significant meaning is that the influence between variables applies to the entire population. This test can use a t-count test that is greater than t-table or p-value (significance) < 0.05.

The steps in the hypothesis analysis are:

H1: Performance Expectancy significantly influences Behavior Intention
H2: Effort Expectancy significantly influences Behavior Intention
H3: Social Influence significantly influences Behavior Intention
H4: Habit significantly influences Behavior Intention
H5: Optimism strengthens the effect of Performance Expectancy on Behavior Intention
H6 : Insecure weakens the effect of Performance Expectancy on Behavior Intention
H7: Optimism strengthens the influence of Effort Expectancy which significantly influences Behavior Intention
H8: Insecure weakens the effect of Effort Expectancy significantly on Behavior Intention
H9: Optimism strengthens the influence of Social Influence which significantly influences Behavior Intention
H10: Insecure weakens the effect of Social Influence significantly affecting Behavior Intention
H11: Optimism strengthens the effect of Habit significantly affecting Behavior Intention
H12: Insecure weakens the effect of Habit significantly on Behavior Intention

3. Methodology

3.1 Population and sample

This research, sourced from primary and secondary data. Primary data collection was carried out through a survey method of respondents and one of the toll road managers, while secondary data was obtained from a survey of PT. Trans Marga Central Java

corresponds to one of the research locations that I researched, namely at the Ungaran Toll Gate Section of Semarang – Solo. Primary data surveys of interest in using MLFF among the public are used to determine the factors that determine interest in using the technology and secondary data related to the number of vehicles passing through the gate and the time required to provide services, so that the distribution pattern of vehicle arrivals and service time distribution patterns can be identified.

3.2 Research variable and framework

The data analysis method used in the analysis of intention to use based on MLFF is based on the relationship between the variables Performance Expectancy, Effort Expectancy, Social Influence, Habit to the use of the new Multi Line Free Flow (MLFF) technology by adding Technology Readness as a moderating variable. Analysis using the modified UTAUT 2 method is used to determine user interest in contactless use based on the MLFF Gate Toll in Indonesia with the Smart Partial Least Square (PLS) application. Partial Least Square will be used to analyze relatively complex relationships with not too large a sample size. Using PLS can be used to study implications for theory

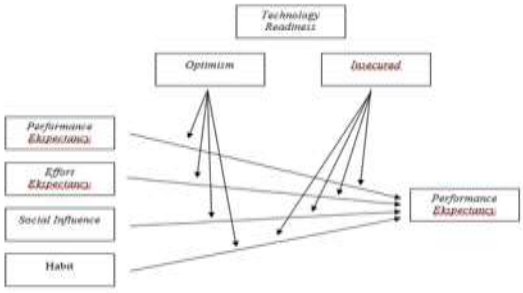

Figure 1 Research Framework

4. Data Analysis Result

The performance expectation variable has 3 indicators developed by Venkatesh, Thong, and Xu, (2012), namely providing benefits (PE1), speeding up travel time (PE.2), reducing queuing time (PE.3). Based on the results of descriptive analysis, the average respondent's perception of the performance expectation variable is 4.04. These results indicate that toll road users feel that implementing the MLFF is sure to provide benefits, speeding up travel time and reducing time at the toll gate.

Effort Expectations

The effort expectation variable has 4 indicators which include; MLFF is easy to learn (EE.1), sure its use will be easy to understand (EE.2) will be simple to operate (EE.3) and easy to use (EE.4). Based on the results of descriptive analysis, the average respondent's perception of the effort expectation variable is 3.94. These results as a whole can be concluded that toll road users have expectations that MLFF technology will be easy to learn, easy to understand, simple to operate and easy to use.

Social Influence

The Social influence variable has 4 indicators which include: depending on the opinions of others (SI.1), recommendations from important people (SI.2), opinions of family and community friends (SI.3), opinions of trusted people (SI.4). From the descriptive analysis,

the average respondent's perception of the social influence variable is 4.00. These results indicate that toll road users have a lot of dependency or a lot of high social influence in the use of new technology.

Habits

The Habit variable has 3 indicators which include; usually use contactless technology (HBT.1), often use contactless technology (HBT.2), enjoy using contactless technology (HBT.3). Based on the results of descriptive analysis, the average perceived response to habit is 4.07. These results indicate that toll road users already have a relatively high habit of using contactless technology.

Optimistic

The optimistic variable is a form of technology readiness, which has 4 indicators. Optimistic indicators include; new technology is easy to use (OPT.1), adaptability to new technology (OPT.2), believes in the benefits of changing technology (OPT.3), and enjoys the presence of new technology (OPT.4). Based on the results of the descriptive analysis, the average moderating variable, namely optimism, is included in the high category with a total average of 3.88. These results mean that toll road users feel they have a high technology readability which is indicated by a high sense of optimism.

Insecure

The Insecure variable has 4 indicators, which include doubt (INC.1), feeling uncomfortable with technological changes (INC.2), having negative perceptions of technological changes (INC.3) and feeling difficult with new technologies (INC4). Based on descriptive analysis, the average moderating variable, namely Insecure, is included in the low category, with a total average of 2.01. These results indicate that toll road users feel they have good technology readiness as indicated by low insecure behavior.

Behavioral Intentions

The behavioral intention variable has 4 indicators, namely the intention of Multi Lane Free Flow (MLFF) (BI.1), interested in using (BI.2), enthusiastic about using (BI.3) and happy to use (BI.4). Based on the results of the descriptive analysis, it shows that the average respondent's perception of the behavior intention variable is 4.00. This result means that the use of toll roads is intentional, interested, enthusiastic and happy to use MLFF technology when it is implemented.

Data Analysis

This research was analyzed using Smart PLS 3.0. This analysis uses two models, namely: the outer model, and the inner model.

Outer Models

This test is carried out to test the validity and reliability of indicators, which include: convergent validity, consistency reliability, and discriminant validity.

Convergent Validity

Convergent validity testing is carried out to find out the correlation between indicators on the research variables. From the results of the analysis of the loading factor measurement model for the performance expectation variable, the loading factor and AVE values were obtained > 0.50. So that all indicators of performance expectancy variables are said to be valid. These results indicate that the indicator will provide benefits, will speed up travel time, will reduce queuing time can be used to measure performance expectancy. The results of the validity analysis, the indicator variable effort expectation is said to be valid. These results indicate that indicators that are easy to learn, easy to understand, simple to apply and easy to use can measure effort expectancy. The results of the validity test of the social

influence variable can be shown by the outer loading value of all indicators > 0.50. These results indicate that the indicators influence people's opinions, recommendations of important people, community opinions and other people's opinions trusted ones can be used to measure social influence. The results of the validity test of the Habit variable can be shown by the outer loading value of all indicators > 0.50. These results indicate that the usual, ever and often used indicators can be used to measure Habit. The results of the validity test of the optimistic variable are said to be valid, which can be shown by the outer loading value > 0.50. These results indicate that the indicators are easy, have the ability, believe in change, enjoy change can be used to measure optimism. The results of the validity test of the insecure variable can be shown by the outer loading value > 0.50. These results indicate that indicators of doubt, unsure, not optimal, the presence of risk can be used to measure insecurity. The results of the validity test of the behavior intention variable are said to be valid, which can be shown by the outer loading value > 0.50. These results indicate that the indicators are trying to find information, want to have, will use, will routinely use can be used to measure behavior intention

Testing the validity of the research variable indicators can also be seen from the Average Varience Extracted (AVE) value. The results of the analysis of the AVE value show that the AVE performance expectancy is 0.783, effort expectancy is 0.666, social influence is 0.592, habit is 0.785; optimistic of 0.748; insecure of 0.661 and behavior intention of 0.763. sThe results show an AVE value > 0.5, meaning that all indicators from the variable performance expectation, effort expectation, social influence, habit, optimism, innovative, insecure and behavioral intention are valid.

Internal Validity

Internal validity analysis was carried out to determine internal consistency reliability by looking at the Cronbach's alpha value and the composite reliability value. The research variable can be declared reliable if it shows a Cronbach's alpha value > 0.70 and a composite reliability value > 0.70. The results of internal consistency analysis calculations show Cronbach's alpha and composite reliability > 0.7. This shows that the variable performance expectancy, effort expectancy, social influence, habit, optimism, innovative, insecure and behavioral intention are in the reliable category. This means that each variable studied in this study has a good correlation between indicators and variables. So it can be concluded that these variables can be used to test the research hypothesis.

Discriminant Validity

Testing discriminant validity can be seen from the correlation of these variables is higher than the correlation with other variables. The results of the analysis show that the discriminant validity value of all research variables is shown by the AVE square value which is greater than the correlation value of this variable with other variables. The performance expectation variable has an AVE square of 0.885, the effort expectation variable has an AVE square value of 0.769, the social influence variable has an AVE square value of 0.876, the habit variable has an AVE square of 0.886, the optimistic variable has an AVE square of 0.865, the insecure variable has an AVE square value square of 0.863, and the Behavior Intention variable has an AVE square value of 0.873.

Structural Model Analysis (Inner Model)

Structural model analysis in this study uses SEM-PLS 3.2. The results of the PLS Algorithm evaluation obtained results as shown in Figure 5.1 Evaluation of the Model as follows:

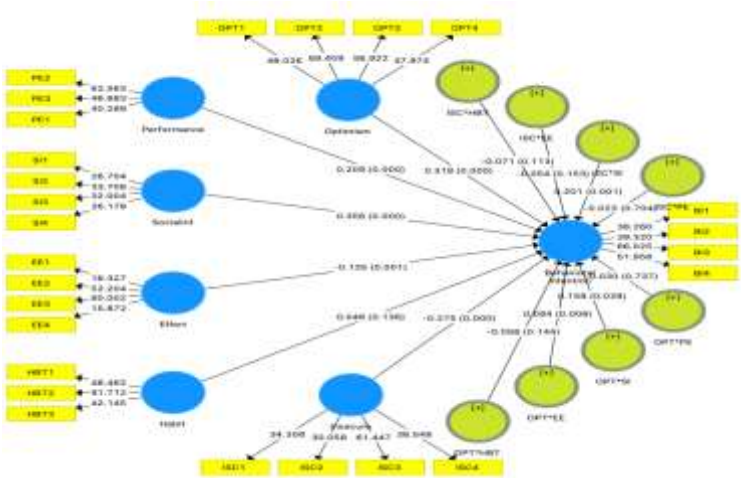

Figure 2 Model Evaluation

Evaluation of the structural model is carried out using the R-aquare test or the coefficient of determination. Evaluation of the structural model or inner model was also carried out by testing the goodness of fit using model testing using 3 parameters: standardized Root Mean Square Residul (SRMR), Normed Fit Idex (NFI) and RMS Theta.

Coefficient of Determination (R-square)

Testing of the structural model can be done by looking at the R^2 value for the dependent (endogenous) variable. The R-square value is 0.965. It can be concluded that the latent endogenous variable behavior intention can be predicted from variations in the variable performance expectation, effort expectation, social influence, habit, optimism, innovative, insecure with strong predictive ability. Meanwhile, 3.5% others are explained by other variables not used in this study.

Structural models before being used in statistical inference testing, need to be tested, whether the model is appropriate, when used for testing. The results of the Goodness of fit test showed the value of the Standardized Root Mean Square Residual (SRMR) <0.08, meaning that the model in this study met the goodness of fit. This means that the model can be used to avoid model misspecification. The Normed Fit Index test shows an NFI value of > 0.9, which indicates an acceptable model fit value

Analysis of the Hypothesis

Testing the hypothesis of the relationship between the variables performance expectation, effort expectation, social influence, habit, optimism, insecure on behavior intention variables. The results of hypothesis testing of performance expectancy, effort expectancy, social influence and habit as well as technology readness support for behavior intention can be shown in the following table .The results of the Hypothesis Test are as follows:

Table 1
Conclusion of Hypothesis Testing Results

Hypothesis	Pathway	Hipotesis	Result	Conclusion
H_1	*Performance Expectancy* → *Behavior Intantion*	Positive Significant	Positive Significant	Accepted
H_2	*Effort Expectancy* →	Positive	Negative	Rejected

	Behavior Intantion	Significant	Significant	
H_3	*Social influence → Behavior Intantion*	Positive Significant	Positive Significant	Accepted
H_4	*Habit → Behavior Intantion*	Positive Significant	Positive Not Significant	Rejected
H_5	*Performance Expectancy*Optimism → Behavior Intantion*	Positive Significant	Negative Not Significant	Rejected
H_6	*Performance Expectancy*Inscure → Behavior Intantion*	Negative Significant	Negative Not Significant	Rejected
H_7	*Effort Expectancy * Optimism→ Behavior Intantion*	Positive Significant	Positive Significant	Accepted
H_8	*Effort Expectancy*Inscure → Behavior Intantion*	Negative Significant	Negative Not Significant	Rejected
H_9	*Social influence*Optimism → Behavior Intantion*	Positive Significant	Positive Significant	Accepted
H_{10}	*Social influence*Inscure → Behavior Intantion*	Negative Significant	Positive Significant	Rejected
H_{11}	*Habit *Optimism → Behavior Intantion*	Positive Significant	Negative Not Significant	Rejected
H_{12}	*Habit *Inscure → Behavior Intantion*	Negative Significant	Negative Significant	Accepted

Effect of Performance Expectancy, Effort Expectancy, social influence and Habit on Behavioral Intention Using Multi Lane Free Flow (MLFF) Technology

The results of the analysis of the effect of Performance Expectation on Behavioral Intention to Use MLFF Technology show a positive influence. This shows that the interest in using MLFF technology for toll road users is influenced by user expectations related to performance. This means that the higher the user's performance expectations as indicated by the benefits of technology, speeding up travel time, reducing queues, it will have an impact on increasing the interest of the toll road user community to use MLFF technology.

The results of this study are in line with research conducted by (Al-Gahtani et al., 2007) related to the use of learning technology which shows that performance expectations play an important role in influencing teachers' behavioral intentions to use digital learning applications, because they are useful in facilitating teacher work assignments and maximize educational effect. Likewise, Chong's (2013) research proves that performance expectancy is the strongest determinant of behavioral intention to use mobile applications; line application (Bogart and Wichadee, 2015); However, cultural behavior and different community readiness can affect the accuracy of the construction because people in different countries have different behaviors (Chong et al., 2012, Valaei et al., 2016). The difference in this study with previous research is related to the object. This research shows the effect of performance

expectation on interest related to the use of Multi Lane Free Flow (MLFF) technology for toll road users. This research also includes the role of technology readiness, in the form of optimistic behavior or insecure behavior.

The results of the analysis of the effect of Effort Expectanty on Behavioral Intention to Use MLFF Technology show that there is a negative influence. This means that expectations for the convenience of this technology to learn, easy to understand, simple and simple to operate and easy to use actually have a negative impact on the interest of the toll road user community to use MLFF technology.The findings of this study contradict the theories and opinions of Venkatesh et al., (2003); Ime l al (2008) and Chiu and Wang, 2008). Regarding the use of e-learning applications which shows that consumers intend to use e-learning applications if the application is easy to use. However, the negative effect of effort expectancy is quite reasonable considering that this research juxtaposes the effect of effort expectancy together with the effect of performance expectancy, so that the effect disappears and is closed due to the large role of performance expectancy. This is in accordance with previous researchers Taylor and Strutton (2010) and Choi et al (2011) who argue that effort expectancy is not as important as performance expectancy in determining bahavior intention, because it has a more significant effect on post-adoption of the use of the technology.

The results of the study show that there is social influence on behavioral intention related to the use of MLFF technology. This means that the higher the social influence of road users from friends, trusted people, important people and communities where activities are useful, it affects the interest of the toll road user community to use MLFF technology.
This finding indicates that the users of new technology, including the use of MLFF technology, depend a lot on other parties. This supports the opinion of Venkatesh et al. (2012); Martin and Herrero (2012); Chong (2013) and Sulaiman et al. (2015) who validated social influence as a driving force for the use of electronic-based services.

The results of this study also show that there is no influence of habit (Habit) on behavioral intention (Behavioral Intention) related to the use of MLFF technology. This means that habits shown by having used, used to use, and frequently used new technology do not affect the interest of the toll road user community to use MLFF technology.

The role of Technology Readiness in supporting Performance expectancy Effort Expectancy, social influence and Habit on Behavioral Intention Using Multi Lane Free Flow (MLFF) Technology

Technology readiness is the tendency of people to invite and use technology to achieve goals in life at home and at work (Parasuraman, 2000). Technology readiness is indicated by positive responses (drivers) and negative responses (inhibitors). The positive view of technology readiness is manifested in the form of optimism and innovativeness. Meanwhile, a negative view (inhibitor) is shown by Discomfort (discomfort) and insecurity (insecurity). Technology readiness (Optimism) is a positive view of technology and the belief that t technology offers people in their lives increased control, flexibility and efficiency.As a form of a positive view of technology readiness, Optimism can influence performance expectancy, effort expectancy, social influence and habit on behavior intention. The results show that technological readiness in the form of a sense of optimism strengthens the effect of performance expectancy on behavior intention to use MLFF technology. This finding means that the more optimistic toll road users are shown by feeling easy, have the ability, believe in change and enjoy new technological changes, will strengthen the effect of expectations on MLFF performance on interest in using MLFF technology. While in the form of a negative view, insecurity can negatively affect the relationship between performance expectancy,

effort expectancy, social influence and habit with behavior intention. The results of this study indicate that low technological readiness in the form of a sense of insecurity weakens the effect of performance expectancy on behavior intention to use MLFF technology. This finding means that the higher the sense of insecurity of toll road users as indicated by feelings of doubt, unsure, not optimal, the presence of risks with new technological changes, will weaken the effect of expectations on MLFF performance (performance expectancy) on interest in using MLFF technology.

The results of this study are in line with the results of the research of Septi and Aries (2021) which state that optimism has a positive effect on perceived usefulness (performance expectancy of QRIS through e-wallet applications. This research also supports research conducted by Rukmana et al (2019) which states that the characteristics consumers who have technological readiness also strengthen the effect of performance expectancy on consumer intentions to use mobile payment technology (Rukmana et al, 2019).Interest in using MLFF technology will increase with confidence in fulfilling expectations for benefits, will speed up travel time, will reduce queuing time. The results of this study are in line with the results of Rukmana's research that technology readiness influences the effect of performance expectancy on consumer intentions to use car payment technology.These results show that there are differences in the effect on sets of consumers who have high insecurity or technology readiness. The low one. However, the results of this study are not in line with the research of Tsourela and Roumeliotis, (2015) which states that the level of technological readiness (insecurity) has an impact on the effect of performance expectancy on interest in using technology-based services.

The results of the research findings show that technological readiness in the form of a sense of optimism has no impact on the effect of effort expectancy on behavior intention to use MLFF technology. This finding means that the effect of effort expectancy shown by the hope that new technology is easy to learn, easy to understand, simple and simple to apply and easy to use cannot increase interest in using MLFF technology, even though it is supported by technology readiness.Likewise, insecurity behavior also has no impact on the effect of effort expectancy on behavior intention to use MLFF technology. This finding means that the effect of effort expectancy is indicated by the hope that new technologies that are easy to learn, easy to understand, simple and simple to apply and easy to use cannot increase interest in using MLFF technology. This impact is increasingly meaningless with technological unpreparedness as indicated by the feeling of insecurity among toll road users. The results of this study contradict the results of the research of Tsourela and Roumeliotis, (2015) which state that technological readiness has an impact on the effect of effort expectancy on interest in using technology-based services. This research also does not support the opinion of Septi and Aris (2021), which states that optimism affects the perceived ease of use (effort expectancy) of QRIS through the ewallet application (Septi and Aries, 2021)

Technology readiness in the form of a sense of optimism has no impact on social influence on behavior intention to use MLFF technology. This finding means that the influence of social influence as indicated by dependence on people's opinions, recommendations of important people, community opinions and opinions of trusted people cannot increase interest in using MLFF technology, even though it is supported by technology readiness. Likewise, technological unpreparedness as indicated by a sense of insecurity does not have a negative impact on the influence of social influence on behavior intention to use MLFF technology. This finding mem has the meaning that the influence of social influence as indicated by dependence on people's opinions, recommendations of

important people, community opinions and opinions of trusted people cannot increase interest in using MLFF technology, with technology unpreparedness (insecurity). The results of this study are in line with the results of Rukmana et al (20159), which states that the characteristics of consumers who have technology readiness also do not support social influence on consumer intentions to use mobile payment technology. This study also supports the opinion of Tsourela and Roumeliotis (2015) who state that technological readiness has no impact on social influence on interest in using technology-based services.

The results of the study show that technological readiness in the form of a sense of optimism strengthens the influence of habit on behavior intention to use MLFF technology. This finding means that the more optimistic toll road users are shown by feeling easy, having the ability, believing in change and enjoying new technological changes, will strengthen the influence of habit of using new technology on interest in using MLFF technology. Meanwhile, technological unpreparedness in the form of a sense of insecurity has a negative impact on the relationship between habit and behavior intention to use MLFF technology. This finding means that the higher the sense of insecurity of toll road users as indicated by feeling easy, having the ability, believing in change and enjoying new technological changes, will have a negative impact on the influence of habit of using new technology on interest in using MLFF technology. The results of this study are in line with the results of Septi and Aries' research (2021) which state that technology readinsess can increase the influence of habits (habit) and the ease of using QRIS technology through ewallet applications.

BUJT Response Analysis

This sub-chapter will discuss the response from road operators/operations regarding the toll collection system that is currently being implemented as well as plans to implement toll collection based on Multi Lane Free Flow. The targets of the respondents were employees of toll road management companies in Indonesia. In the questionnaire that the researchers submitted to the toll road operator/management company, there were 9 questions where 4 questions were about the implementation of the current electronic toll collection system and 5 questions were questions about plans to implement the Multi Lane Free Flow system which will be implemented later.

From BUJT's response to a number of questions, toll road operators have only heard about the implementation of Multi Lane Free Flow and from BUJT's understanding the background to the policy of changing electronic toll collection technology is that it is only for technology updates and is less effective if implemented in areas with conditions without congestion. According to the source, this is more suitable for cities with high demand and density, such as the Jakarta inner city toll road. The constraints experienced from the current implementation are that there are still many users with cards that are no longer sensitive and the lack of balance from the E-Toll card itself which causes long queues and currently efforts are being made from BUJT regarding this, namely by replacing the card and repairing it. systems and SOPs. it is considered sufficient to overcome the obstacles in today's technology
If the question is related to the advantages of the BUJT regarding the implementation of the new system, the picture is still unclear but it might minimize card loss and efficiency from the HR side which is felt to be quite significant, while related to the question of the losses that will be felt, of course the reduction in employees will result in layoffs for employees and investment has not recorded felt from the BUJT side

Analysis of the Advantages and Disadvantages of Toll Road Users

From an analysis of the benefits for toll road users, it seems quite a lot if it is carried out

with a good system and socialization, such as human error, losing a card on the toll road, then not queuing at the toll gate and a good system will make transportation in Indonesia more developed from a technological and the HR

Problems to be faced:

1. Sanctions for implementing MLFF in the form of fines on the system do not have a legal basis because users who do not have funds will be charged with traffic violations or not.
2. There is no coordination between the government and law enforcement regarding vehicle numbers that have not been transferred if there are fines. whether it goes into civil or criminal law, there is no regulation yet
3. Applications can later use the OBU tool which is estimated to be quite expensive, secondly using the Cantas application on a cellphone which risks not being able to use it if the foundation battery runs out, thirdly using a sticker on the front of the car which has a risk if it is erased or the cents are not visible bang cannot be controlled and can endanger the driver

5. The risk of implementing new technology from time to time is the reduction of existing human resources, especially at BUJTs even though the application of MLFF

6. Conclusion *and Discussion*

6.1 Conclusions

Government policies related to plans to implement Multi Lane Free Flow (MLLF) Technology have gone through several studies. In this study, the extent to which public perceptions are related to MLFF technology and the extent of public interest in using MLFF technology. Sharing factors analyzed their impact on interest which includes performance expectancy, effort expectancy, social influence and habit in influencing interest in using the technology. This research also looks at the extent of the readiness of community technology (remedial technology) in supporting the target market for implementing the MLFF technology. The results of the research can be concluded as follows:

1. The results of the descriptive analysis of the characteristics of the respondents regarding the interest in using Multi Lane Free Flow are as follows:

a. Regarding interest in using MLFF based on income, it can be concluded that income level is related to interest in using MLFF technology. This can be shown by respondents who have income levels above 10 million have an interest in using MLFF technology which is very high at 62.1%, relatively greater than respondents with lower income
b. Regarding the interest in using MLFF based on the respondent's work, it can be concluded that interest does not depend on work. This can be shown by the highest percentage of toll road users who are private employees at 52%, but the highest percentage of interest in using MLFF is BUMN employees at 77.8%.
c. Regarding the relationship between gender and interest in MLFF, it can be concluded that men are more likely to be interested in using MLFF because the dominance of toll road users is male compared to female. with an interest of 35.8% women predominate regarding interest in using MLFF
d. Regarding the interest in using MLFF based on age, it can be concluded that the age of 26-30 dominates the interest in using MLFF with 37.6% and is quite a productive age using toll roads.
e. Regarding the interest in using MLFF based on the frequency of use of toll roads, it can be concluded that the high frequency of passing toll roads in fact greatly influences interest in using Multi Lane Free Flow (MLFF) technology. Respondents with a high

frequency of using toll roads as indicated by a frequency of using toll roads > 15 times, who have a very high interest in using MLFF technology are 58 respondents or 61.7% of respondents with that frequency of use. While respondents at a low frequency of use or below 5 times per month, only 3 (12%) of the respondents had very high interest at that frequency of use.

f. Regarding the interest in using MLFF based on the use of the toll road section, it can be concluded that the Jabodetabek section has a very high interest in implementing MLFF compared to other sections with a percentage of 69.5% of the Jabodetabek section having a very high interest in implementing Multi Lane Free Flow (MLFF) technology. Meanwhile, the Sumatra Toll Road Section has relatively low interest, because of the 5 respondents only have moderate and low interest.

g. Regarding the relationship between the reasons for using the toll road and the intention to use the MLFF, it can be concluded that people have various reasons for passing the toll road but from the results of the relationship between the reasons and the interest in using the MLFF. respondents prefer to avoid the risk of accidents with motorbikes and easier accessibility and mobility if the MLFF implementation is applied with a percentage of 75% and 61.1%

2. The following is the conclusion of the analysis regarding the variables that influence interest in using Multi Lane Free Flow technology:

a. The community's performance expectancy is relatively high, so it is possible that the public's interest in using MLFF technology will also be high, especially for toll road users in urban areas with high density, such as Jabodetabek

b. Performance Expectancy affects behavior intention. This means that expectations for the performance of Multi Lane Free Flow (MLFF) in the form of benefits in overcoming congestion, queues and time efficiency will encourage user interest in finding related information, MLFF.

c. Effort Expectancy has a negative effect on behavior intention. This means that new technology is easy to learn, easy to understand, simple and simple to apply and easy to use has a negative impact on interest in using it to find related information, MLFF.

d. Social influence has a positive effect on behavior intention. This means that reliance on people's opinions, recommendations of important people, community opinions and opinions of trusted people will encourage user interest in seeking information related to MLFF.

e. Habit does not affect behavior intention. This means that being accustomed to using contactless technology, frequently using contactless technology and feeling happy with contactless technology cannot increase user interest. guan to find related information, MLFF.

3. Following are the conclusions from the analysis of the role of Readiness technology readiness in supporting the influence of variables on the interest in using Multi Lane Free Flow technology

    a. Optimistic behavior has a negative impact on the effect of performance expectancy on interest in using MLFF technology and inscurity behavior also has a negative effect on interest in using MLFF technology. So it can be concluded that technological readiness does not strengthen the effect of performance expectancy on interest in using MLFF technology.

    b. Optimistic behavior has a positive impact on the effect of effort expectancy on interest in using MLFF technology, while inscurity behavior has a negative effect

on interest in using MLFF technology. So it can be concluded that technology readiness strengthens the effect of effort expectancy on interest in using MLFF technology

c. Optimistic behavior has a positive impact on social influence on interest in using MLFF technology, while inscurity behavior has no effect on interest in using MLFF technology. So it can be concluded that technology readiness strengthens social influence on interest in using MLFF technology
d. Optimistic behavior has no impact on the influence of habit on interest in using MLFF technology, while inscurity behavior has a negative effect on interest in using MLFF technology. So it can be concluded that technology readiness strengthens the effect of effort expectancy on interest in using MLFF technology.

4. From the results obtained from the analysis of the benefits for the community, namely the community will be greatly assisted by the existence of the MLFF if the readiness and confidence of the community is there because it can break down congestion in dense areas such as Jabodetabek and the disadvantages obtained are the lack of efficiency in implementing it in non-dense areas because Unequal socialization in each region and from the results of the analysis regarding the advantages and disadvantages for BUJT, namely that it will be easier to control and minimize queues at toll gates and human errors such as lost cards, but the disadvantage will be that a lot of human resources will be reduced for BUJT because of this technology and the inefficiency applied in the area because the level of density is almost non-existent

6.2 Results and Discussion

The recommendations for follow-up to this research are the benefits of the researchers' findings which can be used by related parties in optimizing the policy of implementing Multi Lane Free Flow at toll gates. This study shows several findings related to the readiness and interest in using Multi Lane Free Flow (MLFF) technology for toll road users. This research was conducted in an effort to determine the readiness and interest of the community regarding government policies regarding plans to implement Multi Lane Free Flow (MLFF) technology, on all toll roads in Indonesia. Various factors have been analyzed both descriptively and causally, the various factors that influence the acceptance of this policy, as well as to what extent the urgency of this policy is applied to all toll roads in Indonesia. These findings are expected to be the basis for policy making from various related parties, such as the government (BPJT), toll road operational managers (BUJT) and toll road users, as objects that will be affected positively or negatively by the policy of implementing the MLFF technology.Based on the conclusions obtained, the suggestions from researchers are as follows:

1. UTAUT in the form of effort expectancy has no positive effect on behavior intention to use MLFF technology, so it is necessary to evaluate the relationship pattern of this variable with the performance expectancy variable. This is based on previous research, where the roles of effort expectancy and performance expectancy are always in conflict
2. This research is only limited to the interest in using it, not yet on the decision to use it, bearing in mind that the MLFF technology has not been implemented and has only been tested on some toll roads in Jabodetabek, so it needs to be re-confirmed through further research when the technology has been implemented
3. Technological readiness in this study is measured using 2 dimensions (optimistic and

insecure), further research needs to develop other dimensions such as innovative and discomfort so that it can be seen which dimensions are effective in supporting the influence of UTAUT on interest

4. For further research, it needs to be done at contactless substations or MLFF, preferably when there is a lot of demand and the application has been carried out evenly, so that in the future it can also be modeled with the Greenshield, Greenburg, Underwood models or other modeling applications and get results close to actual conditions in field because currently researchers are only researching interest in using MLFF technology from several factors and respondent characteristic.

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