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*Research/Review*

# Efforts to Increase Reuse Intention with the TAM Model for Multi-Service Application Users

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**Abstract.** As time advances, humans need technology as a tool to help and facilitate all their activities in daily life, one of which is in the fields of transportation or food. In Indonesia, technological developments in the transportation sector can be seen from the rapid development of the Grab application. Through the Grab application, initially OVO was only used by the public as a payment method for Grab's transportation services. But now consumers can carry out various activities ranging from transportation to ordering food. This phenomenon illustrates how the Grab application with a payment system via OVO can be massively accepted by the Indonesian people. Acceptance of this technology can be analyzed using the Technology Acceptance Model (TAM). When using technology, people do not always receive the benefits, accept the convenience, and fully accept the risks, but often there is resistance or mistakes often occur. Therefore, this research aims to analyze the influence of the Technology Acceptance Model (TAM) with the variables perceived usefulness, perceived ease of use, and Perceived Risk in Grab application users on Reuse Intention. The population of this study were all Grab application users in Pangkalpinang City, with purposive sampling involving 112 respondents whose characteristics of application users ranged from 18-50 years and had also used the OVO feature for at least 1 year. The analytical method that will be used to analyze the data is SPSS 26.0. The results of this research explain that the variables perceived usefulness, perceived ease of use, and Perceived Risk have an influence on Reuse Intention.

**Keywords :** Perceived Usefulness, Perceived Ease Of Use, Perceived Risk, Reuse Intention, Technology Acceptance Model

## 1. Introduction

In the current era, the needs of global society are increasing day by day, this is due to increasingly advanced technology and information. In Indonesia, technological developments in the transportation sector can be seen from the very fast development of the Grab application. Grab is an online-based mode of transportation. Grab started as a transportation service, the company now has other services such as food delivery and payments which can be accessed via a mobile application.

The market share on the Grab platform is also very wide, where several applications are available on the Grab application. In Indonesia, Grab serves vehicle orders such as GrabBike, GrabCar, GrabTaksi, GrabExpress, GrabFood, and GrabHitch Car. Currently Grab is available in 125 cities throughout Indonesia, from Banda Aceh - Aceh to Jayapura - Papua (www.wikipedia.com).

Based on Indonesia's ride-sharing market share remained stable throughout 2021, with Grab controlling 57% of the market by sales. However, starting in 2022, Grab's advantage shrank slightly, and in July 2022. During August to December 2021, Grab's sales increased.

The next impact of technological developments is where the Grab company provides Mobile Payment. Through the Grab application, initially OVO was only used by the public as a payment method for transportation services owned by Grab. But now consumers can carry out various activities, from transportation to ordering food. However, over time the OVO payment method has transformed to be used for transactions for various needs. Using OVO not only provides benefits to consumers but also to merchants. This phenomenon illustrates how the Grab application with a payment system via OVO can be massively accepted by the Indonesian people. Acceptance of this technology can be analyzed using the Technology Acceptance Model (TAM). In the use of technology, society does not always

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accept the benefits, accept the convenience, and fully accept the risks, but there is also often rejection or frequent errors. Several problems faced by Grab should receive special attention because the high acceptance of the Grab application, including convenience, benefits and risks, is considered very important. This is because acceptance of technology can influence the interest in reusing it. Based on the explanation related to the importance of technology acceptance and its influence on interest in reusing it, acceptance of technology, including benefit acceptance, convenience acceptance, and risk acceptance should be of special attention and must continue to be improved by Grab. For this reason, researchers feel it is important to conduct research related to the Technology Acceptance Model (TAM) on reuse intention in the Grab application that uses OVO.

## 2. Literature Review

### Technology Acceptance Model (TAM)

TAM is an information systems theory that creates a model of the user's process of accepting and using technology. TAM is a theory used to predict and explain how technology users accept and use this technology in everyday life (Agustini, 2014: 57).

### Perceived Usefulness

According to Yani et al. (2018) in Wahyuni and Brady (2019), perceived usefulness is the extent to which someone believes that using a technology will improve their work performance.

### Perceived Ease of Use

Davis (1989) in Andre and Desi (2020) defines perceived ease of use as the level at which a person believes that using a particular system can reduce a person's effort in doing something.

### Perceived Risk

According to Kim et al., (2018: 23), Perceived Risk is defined as consumers' beliefs about the potential for uncertain negative results from using a technology. Furthermore, Jogiyanto (2012:64) defines risk as a customer's perceptions about uncertainty and undesirable consequences in carrying out an activity.

### Reuse intention

According to Santoso and Aprianingsih (2017) Reuse intention is the Reuse Intention a product or service. Reuse Intention is the intention to use the same product two or more times. In application usage, the interest in reusing the application is considered a major component of application loyalty

### Hypothesis Development

#### The influence of *perceived usefulness* on *reuse intention*

Research conducted by (Muttaqin, 2017) states that *perceived usefulness* has no effect on *reuse intention* , meaning that there is no significant influence of *perceived usefulness* on *reuse intention* . However, research conducted by (Kahar, 2019) states that *perceived usefulness* has a significant positive influence on the dependent variable, namely customer satisfaction.

H1= Perceived usefulness *has* a positive and significant influence on *reuse intention* .

#### The influence of *perceived ease of use* on *reuse intention*

Research conducted by (Yanico and Keny, 2021) states that perceived ease of use plays a significant role in predicting repurchase intentions. However, research conducted by (Oroh and Farlane, 2015) states that *perceived ease of use* does not have a significant positive influence on the dependent variable, namely *reuse intention.*

H2 = *Perceived ease of use* has a positive and significant influence on *reuse intention*

#### The influence of *perceived risk* on *reuse intention*

Research conducted (Heriyana et al., 2019) states that *Perceived Risk* influences reuse intention, meaning that there is a significant influence of *Perceived Risk* on *reuse intention* . However, research conducted by (Ashghar and Hanny, 2020) states that *Perceived Risk* does not have a significant relationship with *Online Repurchase Intention.*

H3 = Perceived risk *has* a positive and significant influence on *reuse intention* .

#### The influence of *perceived usefulness* , *perceived ease of use* and *perceived risk* on *reuse intention*

Research conducted (Heriyana et al., 2019) shows that *Perceived Risk* has a positive and significant influence on *repurchase intention* and research (Wilson et al., 2021) shows that

perceived ease of use and perceived security have a positive and significant impact on reuse intention.

H4 = *perceived usefulness* , *perceived ease of use* and *perceived risk* have a positive and significant influence simultaneously on *reuse intention.*

## 3. Methods

This research is a quantitative study which aims to assess the causal relationship or direct impact of each variable, in this case regarding the relationship between the independent variable and the dependent variable, then processed using a statistical analysis tool in the form of SPSS version 26.0. This research was conducted on Grab users in Pangkalpinang City and the research was conducted in 2023. In this study, the population used was all Grab users in the city of Pangkalpinang. The characteristics of the sample in this study are Grab users with an age range of 18-50 years and using OVO as their payment system. Apart from that, the sample characteristics are users who have used Grab with the OVO payment system for > 1 year. In addition, the characteristic of use > 1 year is applied to this research sample.

## 4. Results

### Variable Description

Based on the results of the descriptive analysis of the Perceived Usefulnesss variable are categorized as high , Perceived Ease Of Use is categorized as high , Perceived Risk is categorized as high and *Reuse intention* is categorized as high.

### Validity Test

Based on Valididity Test with SPPS 26.0, where testing the validity of the research instrument (questionnaire) with each question, the calculated r value is greater than the r table, namely 0.1857. So the entire research questionnaire is said to be valid.

### Reliability Test

Based on Reliability Test with SPPS 26.0the results of the reliability test show that all variables have a fairly large alpha coefficient, namely above 0.60, so it can be said that all measuring concepts for each variable from the questionnaire are reliable, which means that the questionnaire used in this research is a reliable questionnaire. or reliable.

### Normality Test

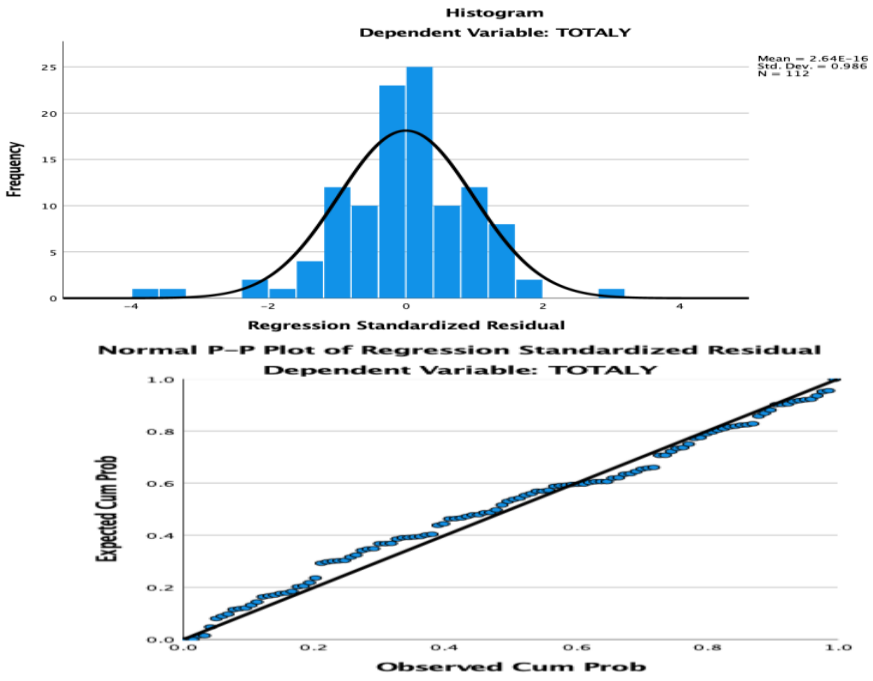


**Fig. 1. Normality Test Results**

Source: SPSS data processed by researchers, 2023

Based on the normal graph display of the plot presented, it can be concluded that the histogram graph provides a normal distribution pattern. Meanwhile, in the normal PP plot of regression standardized residual graph, you can see the dots spreading around the diagonal

line, and the distribution follows the direction of the diagonal line. These two graphs show that the regression model is suitable for use because it meets the normality assumption

**Heteroskedaticity Test**

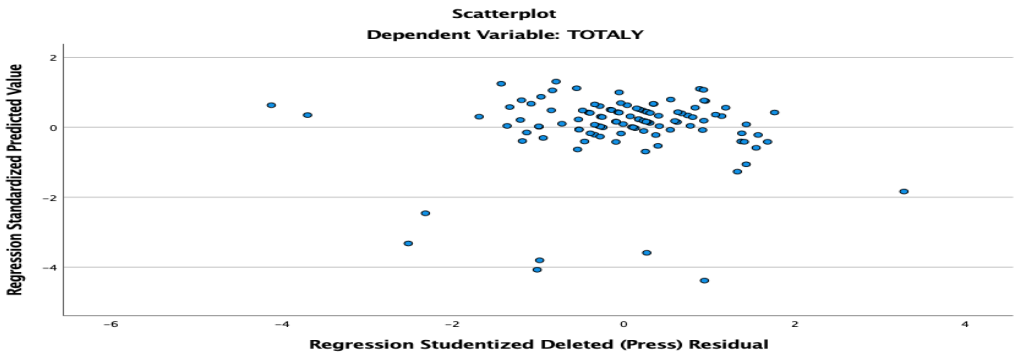


**Fig. 2. Heteroscedasticity Test Results**

Source: SPSS data processed by researchers, 2023

The graphic results presented above show that the points are spread randomly and are spread above and below the number 0 on the y-axis, and do not have a clear pattern or do not form a pattern. For this reason, it can be concluded that heteroscedasticity does not occur in the regression model, so the regression model is suitable for use as a prediction

**Multicollinearity Test**

Based on Multicollinearity Test of the results of the multicollinearity test, the tolerance value calculation shows that there are no variables that have a tolerance value <0.10, which means that in this study there were no problems in the multicollinearity test. Likewise, with the results of calculating the VIF value, of the three independent variables tested there was no VIF value > 10, so it can be concluded that there is no multicollinearity between the independent variables in the regression model.

**Multiple Regression Analysis**

**Table 1. Multiple Regression Analysis Results**

***Coefficients***

| Model | Unstandardized Coefficients | | Standardized Coefficients |
|---|---|---|---|
| | B | Std. Error | Beta |
| 1 (Constant) | 1,232 | 1,811 | |
| Perceived Usefulness | ,280 | ,088 | ,277 |
| Perception of Ease | ,450 | ,088 | ,409 |
| Perceived Risk | ,247 | ,096 | ,212 |

Source: SPSS data processed by researchers, 2023

Based on the data in table 1, the results of the regression analysis show the following regression equation:

$$Y = 1.232 + 0.280\ X_1 + 0.450\ X_2 + 0.247\ X_3$$

**F Test**

**Table 2. F Test Analysis Results**

**ANOVA [a]**

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| 1 Regression | 1323 . 264 | 3 | 441,088 | 54,231 | ,000 [b] |
| Residual | 878,415 | 108 | 8.133 | | |
| Total | 2201,679 | 111 | | | |

Source: SPSS data processed by researchers, 2023

Based on table 2, the results of the F test calculation, it can be seen that the calculated F value is 54.231 and the F table with df1 = number degree, namely 3 and df 2 = denominator degree 108 with a level of 5%, then we get an F table of 2.69, meaning calculated F > f table. The result is ϱ = 0.000 < 0.05, then Ho is rejected and H4 is accepted.

**T test**

**Table 3. Results of t test analysis**

| Model | t | Sig. |
|---|---|---|
| 1 (Constant) | ,680 | ,498 |
| Perceived Usefulness | 3,183 | ,002 |
| Perception of Ease | 5.112 | ,000 |
| Perceived Risk | 2,579 | .011 |

Source: SPSS data processed by researchers, 2023

The coefficient results are carried out through hypothesis testing and then compared with t table, namely n = sample size 112 with α = 0.05 and K = 4, so we get t table 1.98217. So from the results of each variable it can be seen which variable has an influence on Reuse intention as follows :

- Perceived Usefulness positive and significant effect on *Reuse intention* . From the research results obtained, the $t_{count}$ for $X_1$ is 3.183 , which is greater than the $t_{table}$ 1.98217 with a significance of 0.0 02 smaller than the significance level of 0.05.
- Perception of convenience has a positive and significant effect on *reuse intention* . From the research results obtained $t_{count}$ for $X_2$ of 5.112 is greater than the $t_{table}$ 1.98217 with a significance of 0.0 00 which is smaller than the significance level of 0.05.
- Perceived Risk has a positive and significant effect on *reuse intention* . From the calculation results obtained $t_{is\ calculated}$ for $X_3$ amounting to 2.579 is greater than the $t_{table}$ 1.98217 with a significance of 0.011 which is smaller than the significance level of 0.05.

**Analysis of the Coefficient of Determination (R2)**

Based on the coefficient of determination (R2) shows 0.601 or 60.1%, which means that the variation in the Reuse intention variable can be explained by the variables Perceived Usefulness, Perception of Convenience and Perception of Risk. The remaining 39.9% can be explained by other variables outside of the research variables.

**Discussion**

**Influence of Perceived Benefits on Reuse Intention**

According to Noviarni (2014) Perceived Usefulnessare the subjective abilities of users for the future where using a specific application system will improve performance in the organizational context. Meanwhile, according to Othman et al., (2013 *) reuse intention* is the extent to which users are willing to reuse the application after initial use. Based on the first hypothesis test, namely whether the perceived benefit variable has an effect on the *reuse intention variable* . From the research results obtained tcount for This means that it can be concluded that H1 is accepted and Ho is rejected, so this shows that the Perceived Usefulness variable has a positive and significant effect on *Reuse intention* . This explains that the higher the perceived benefit value, the higher *the reuse intention* . The results of this research are also supported by research conducted by Saraswati and I Ketut (2021) which states that Perceived Usefulnesshas a significant positive effect on *repurchase intention* .

**Influence of Perceived Ease of Use on Reuse Intention**

According to Setiawan (2017), Perception of Ease is also used to see the extent to which potential users want easy system implementation. In other words, potential users do not want high levels of difficulty in learning and applying the use of this technology. Based on the second hypothesis test, namely whether the Perception of Convenience variable has an effect on the *reuse intention variable* . From the research results obtained tcount for This means that it can be concluded that H2 is accepted and Ho is rejected, so this shows that the Perceived Convenience variable has a positive and significant effect on *Reuse intention.* This explains that the higher the value of perceived convenience, the higher *the reuse intention will be.* The results of this research are also supported by research conducted by Nelwan et al., (2021) which states that *reuse intention* is directly and significantly influenced by Perception of Convenience.

The perception of ease in this research is whether the Grab application with the OVO payment system is easy to learn and easy to use for all groups. Ease of operation is important because if it is easier, it will make consumers feel happy to use it because they will not be confused about operating the application. In this research, the perception of convenience in the Grab application with the OVO payment system is one of the factors that makes users carry out transactions on Grab continuously and continuously, meaning that the better the perception of convenience towards Grab, the greater the intention of Grab users to continue making transactions on Grab. more increasing.

**Influence of Perceived Risk on Reuse Intention**

Perceived Risk can also be interpreted as a person's subjective assessment of the possibility of an accident and how worried the individual is about the consequences or impacts of using a technology. Meanwhile, *Reuse intention* is the behavioral Reuse Intention so that it can be explained to what extent the user intends to reuse (Schaupp and Belanger, 2010). Based on the third hypothesis test, namely whether the Perceived Risk variable has an effect on the reuse intention variable. From the calculation results obtained, the tcount for This means that it can be concluded that H3 is accepted and Ho is rejected, so this shows that the Perceived Risk variable has a positive and significant effect on *Reuse intention* . This explains that the better the Perceived Risk , the higher *the Reuse intention* . The results of this research are also supported by research conducted by Rachman et al., (2021) which states that Perceived Risk has a positive and significant influence on Reuse Intention. The Perceived Risk in question is whether consumers are aware that using the Grab application with the OVO payment system has financial risks such as the balance suddenly decreasing or even running out. Consumers must also be prepared when sometimes using Grab takes quite a long time due to the unstable application network. . For this reason, the Grab application always provides provisions in the Grab application so that users can feel safer when using Grab.

## 5. Conclusion

- Based on the results of the descriptive analysis of the Perceived Usefulnesss variable are categorized as high *,* Perception of Convenience is categorized as high *,* Perceived Risk is categorized as high and *Reuse intention* is categorized as high.
- Perceived Usefulnesss positive and significant effect on *Reuse intention* . From the research results obtained, the $t_{count}$ for $X_1$ is 3.183 , which is greater than the $t_{table}$ 1.98217 with a significance of 0.0 02 smaller than the significance level of 0.05.
- Perception of convenience has a positive and significant effect on *reuse intention* . From the research results obtained $t_{count}$ for $X_2$ of 5.112 is greater than the $t_{table}$ 1.98217 with a significance of 0.0 00 which is smaller than the significance level of 0.05.
- Perceived Risk has a positive and significant effect on *reuse intention* . From the calculation results obtained $t_{is\ calculated}$ for $X_3$ amounting to 2.579 is greater than the $t_{table}$ 1.98217 with a significance of 0.011 which is smaller than the significance level of 0.05.
- Perceived Usefulnesss , Perception of Convenience and Perception of Risk simultaneously has a positive and significant effect on *reuse intention*

## 6. Limitation

The study may have limitations in terms of sample representation. If the sample size is not large enough or not diverse enough, the results may not be generalizable to a broader population. For instance, the study might have been conducted in a specific geographic location or among a specific demographic group, which could limit the applicability of the findings to other contexts.

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