

## Perspective from E-Service Quality Barriers: Important Factors to Avoid to Increase Actual Usage of Transportation Apps in Indonesia



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**ABSTRACT:** In the midst of the Covid 19 pandemic in Indonesia, forcing everyone to do everything from home. This has become easier due to rapid advances in technology and information. Recently, developments in technology and information have encouraged the development of payment instruments into e-money. The development of e-money in Indonesia itself can be said to be growing rapidly. It has an impact on the competition in the e-money industry which is getting tougher every year. Therefore, it is important for the e-money industry to continue to increase actual usage, in order to remain competitive in the midst of fierce competition in the e-money industry. In this study, respondents collected were 150 users of Go-Pay in Surabaya according to the characteristics of respondents using snowball technique. Based on data analysis is that from six proposed hypotheses, all hypotheses are supported

**KEYWORDS:** Usage Barrier, Value Barrier, Risk Barrier, Traditional Barrier, Image Barrier, Actual Usage, and Innovation Resistance.

### I. INTRODUCTION

In the midst of the Covid 19 pandemic in Indonesia, forcing everyone to do everything from home. This has become easier due to rapid advances in technology and information. Recently, developments in technology and information have encouraged the development of payment instruments into e-money. The development of e-money in Indonesia itself can be said to be growing rapidly. It has an impact on the competition in the e-money industry which is getting tougher every year. Therefore, it is important for the e-money industry to continue to increase actual usage, in order to remain competitive in the midst of fierce competition in the e-money industry.

Indonesian Fintech Association (AFTECH) in January 2020 shows that the use of e-money via digital wallet reached 300 million transactions. It doesn't stop there, the number of transactions continues to increase even up to 50% in April 2020, occurred 450 million transactions. The amount of money involved in the transaction can also be spelled out quite fantastic. In March 2020, e-money transactions reached 15.04 trillion and in the following month increased to 17.55 trillion. Otherwise, transactions at ATMs and debit cards decreased from January which was there were 600 million transactions to 500 million transactions in April 2020.

Based on the description above, this research will discuss factors that affect the actual usage of the Go-Pay application in Surabaya. To see any factors that affect the actual usage, will be used innovation resistance as variables intervention. In this study, it will be investigated whether usage barrier, value barrier, risk barrier, traditional barrier and image barrier has a positive effect on the actual usage of the Go-Pay application in Surabaya.

### II. LITERATURE REVIEW

#### 2.1. Usage Barrier

Usage barriers are mostly related to the usability of an innovation and changes required from consumers. Barriers come when a innovation is not compatible with existing workflows, practices and habits (Ram & Sheth in Laukkanen et al., 2007). According to Mani and Chouk's research (2018) usage barrier is defined as consumer's perception of change needed to adapt to new innovations. Similar thing expressed by Ram and Sheth (1989) where the usage barrier is a consumer resistance to innovation when there is a new innovation because it exists non-conformance of current systems, customs and practices. From

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these statements, we can make hypotheses that:

- A. H<sub>1</sub>: Usage barriers has a positive significant effect on innovation resistance

### **2.2 Value Barriers**

Value barrier is the monetary value of an innovation which at the time innovation does not offer a good comparison between performance and price substitute, then there is no benefit for the consumer to change the way of working them (Ram & Sheth in Laukkanen et al., 2007). Besides, Mani and Chouk (2018) revealed that the value barrier is the consumer's perception of innovation performance against the value paid in terms of price compared with the alternative. In addition, Morar (2013) revealed that the value Barriers are barriers that result from deviations from innovation from the existing value system. The same thing was expressed by Moorthy et al., (2017), where the value Barriers are barriers to the use of products or services if they are not meet the user's perception of the value of performance to price, different with other substitutions. From these statements, we can make hypotheses that:

- H<sub>2</sub>: Value barriers has a positive significant effect on innovation resistance

### **2.3. Risk Barriers**

The risk barrier is the level of risk of an innovation where the level of Perceived risk is the result of the uncertainty of an innovation (Ram & Sheth in Laukkanen et al., 2007). Besides, Mani and Chouk (2018) revealed that the risk barrier is the consumer's perception of the innovation that have risks compared to the alternatives. Not only that Antioco & Kleijnen (2009) revealed that the risk barrier is a risk that occurs in almost all innovations, which has the potential for serious side effects cannot be anticipated. (almost all innovations, to some extent, is a risk and has the potential for unanticipated side effects). From these statements, we can conclude hypotheses as follows:

- H<sub>3</sub>: Risk barriers has a positive significant effect on innovation resistance

### **2.4. Traditional Barriers**

Traditional barriers can be explained as behaviors that conflict with values and norms that can cause obstacles to a tradition (Ram & Sheth in Laukkanen et al., 2007). Besides the tradition barrier is the implication of an innovation that can cause changes in the daily routines of consumers (Ram & Sheth in Laukkanen et al., 2007). Tradition barrier can also be explained as an important routine for consumers where these consumers have value social, family and social norms. (Ram & Sheth in Laukkanen et al., 2007). Traditional barrier is consumer perception that adopting innovation will change their habits and lifestyle compared to use of existing alternative products (Mani and Chouk, 2018). Thus, the following hypothesis is proposed:

- H<sub>4</sub>: Traditional barriers has a positive significant effect on innovation resistance

### **2.5. Image Barriers**

Image barrier is an image of an innovation that is obtained through the origin of the innovation (Ram & Sheth in Laukkanen et al., 2007). According to Mani and Chouk (2018) the image barrier is defined as the perception of consumers to new innovations about how difficult or easy it is to adopt. In addition, according to (Moorthy et al., 2017) the definition of image barrier is an individual's negative thinking about technological tools and complications their perceived use. Parasuraman expressed the same thing in (Laukkanen, 2016) where the image barrier is the relationship between readiness technology with the individual's overall mental state regarding technology as a whole general (related to technological readiness which refers to the mental state individuals about technology in general). From these statements, we can conclude hypotheses as follows:

- H<sub>5</sub>: Image barriers has a positive significant effect on innovation resistance

### **2.6. Innovation Resistance**

According to Ram and Sheth (1989) Innovation resistance is defined as: rejection by consumers due to a change in the current satisfactory state or differences from their innovative ideas. Innovation resistance is resistance or resistance offered by consumers to changes that forced by innovation (Heider, 1958). In addition, according to Heider (1958), innovation resistance is a special version of resistance to change, to the extent that consumers can experience changes in the way they obtain information about buying, using or disposing of a new product. Hew et al. (2017) also explains that innovation resistance is the result of consumer behavior that results from rational thinking and judgment new innovations that can bring about a change to the status quo and exists, deviating from their current belief system. Thus, the following hypothesis is proposed:

- H<sub>6</sub>: Innovation resistance has a positive significant effect on Actual Usage

### **2.7. Actual Usage**

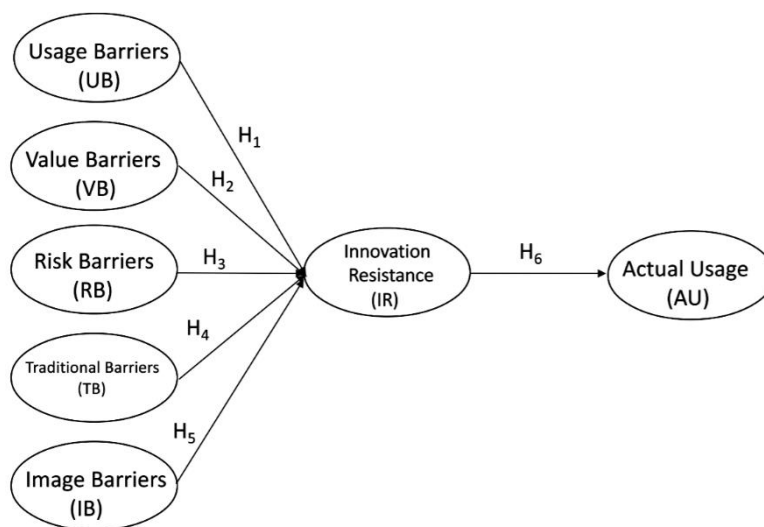
According to Wibowo (2006) actual usage is the real condition of use system which is conceptualized in the form of

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measurement of frequency and duration technology usage time. Fatmawati (2015) also revealed that actual usage can be defined as the use of the product by individuals who actually happened, where this usage must be proven over time usage and frequency of use. In addition, Sykes et al. (2009) revealing actual usage is the result of objective behavior that is measured as the amount of time an employee engages in direct interaction with a computer-based system. According to Igbaria et al., (1997), defining actual usage as the level of individual usage where the system is used not through coercion / voluntarily.

### III. RESEARCH ISSUE AND METHODOLOGY

The type of approach used in this study is a quantitative approach. The population used is users of Go-Pay in Surabaya. The sampling technique used is non-probability sampling using a questionnaire as a tool major in data collection. In this study, researchers will use snowball sampling techniques, where researchers choose respondents who will help researchers to distribute and fill out questionnaires. In this study respondents collected were 150 users of Go-Pay in Surabaya according to the characteristics of respondents. Research model can be seen below.



**Figure 1. Research Model**

Source: Analysis, 2021

### IV. FINDING AND DISCUSSION

#### 4.1. Findings

This study used Multiple Regression in testing between the variables. Statistical analysis tool used to answer the problem formulation of this research is SPSS 22.0. Once the questionnaires were returned, the next step that must be conducted is descriptive statistic-analysis.

In Table 1, it shows that respondents who fill out questionnaires are mostly done by women, this can be seen from 150 respondents (62%) of respondents who using Go-Pay while 90 respondents (38%) are men. This indicates that users of Go-Pay in Surabaya mostly is female.

**Table 1. Respondents Characteristic by Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	93	62.0	62.0	63.0
	Male	57	38.0	38.0	100.0
	Total	150	100.0	100.0	

Source: own calculation

From the results in Table 2, it can be seen that the characteristics of respondents based on age are dominated by age group 18-35 which is 144 respondents (96%), followed by 36-50 age group which is 6 respondents (4%). This shows that the majority of respondents are in the age subgroup of generation X and Y.

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**Table 2. Respondents Characteristic by Age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 35	144	96.0	96.0	96.0
	35 - 50	6	4.0	4.0	100.0
	Total	150	100.0	100.0	

Source: own calculation

**Table 3. Descriptive Statistics**

	N	Mean	Std. Deviation
UB1	150	4.213	.7385
UB2	150	4.325	.7475
UB3	150	4.213	.8546
UB4	150	4.324	.7879
UB5	150	4.121	.7859
UB6	150	4.216	.8559
UB	150	4.23533	.64287
VB1	150	4.210	.5844
VB2	150	4.295	.5142
VB3	150	4.580	.6472
VB	150	4.36167	.40238
RB1	150	4.135	.6925
RB2	150	4.245	.7450
RB3	150	3.854	.6856
RB4	150	4.335	.6541
RB5	150	4.145	.7879
RB	150	4.1428	.55677
TB1	150	4.298	.7155
TB2	150	4.699	.7113
TB3	150	4.305	.7545
TB4	150	4.384	.8548
TB5	150	4.658	.8471
TB6	150	4.575	.8547
TB	150	4.48650	.64680
IB1	150	4.247	.7145
IB2	150	4.025	.7194
IB3	150	4.124	.6545
IB	150	4.13200	.65748
IR1	150	3.987	.8487
IR2	150	4.218	.8459
IR3	150	4.358	.8354
IR	150	4.18767	.73543
AU1	150	4.166	.7374
AU2	150	3.879	.8219
AU3	150	4.126	.7426
AU4	150	4.421	.7454
AU	150	4.14800	.74753
Valid N (listwise)	150		

Source: own calculation

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Based on the results from data processing in table 3, it shows that all average score of the mean for overall indicator is above 3.61 means that all indicators of variables can be perceived agree by all respondents. Also, the standard deviation is under 2.0 means that the answers given by respondents are homogeneous. The highest mean average is traditional barriers is 4.48650. This may indicate that respondents are agree with indicators of traditional barriers than other variables. Actual Usage has the highest score for standard deviation, that is 0.74753. This may indicate that the respondents give answers for Actual usage least homogeneous compared with other variables.

### 4.1.1 Validity Test

The criteria is if the value of the factor loading is higher than 0.160, then the statement is considered valid. Based on the test of the data validity, all indicators used to estimate each variable are valid, because the factor loading for every indicators are more than 0.160.

**Table 4. Validity Test**

Indicator	FL	Indicator	FL	Indicator	FL	Indicator	FL	Indicator	FL	Indicator	FL	Indicator	FL
Usage Barriers		Usage Barriers		Usage Barriers		Usage Barriers		Usage Barriers		Usage Barriers		Usage Barriers	
UB1	.502	VB1	.237	RS1	.681	TB1	.704	IB1	.748	IR1	.421	AU1	.651
UB2	.474	VB2	.365	RS2	.714	TB2	.593	IB2	.635	IR2	.629	AU2	.598
UE3	.523	VB3	.472	RS3	.715	TB3	.687	IB3	.778	IRL3	.757	AU3	.654
UE4	.451			RB4	.654	TB4	.421					AU4	.354
UE5	.395			RB5	.751	TB5	.235						
UE6	.541					TB6	.546						

Source: own calculation

### 4.1.2 Reliability Test

Reliability test is do by comparing cronbach's alpha value, if the value is higher than 0.6, then the statement is considered reliable.

**Table 5. Reliability Test**

Variable	Cronbach's Alpha Based on Standardized Items
Usage Barriers	.815
Value Barriers	.785
Risk Barriers	.828
Traditional Barriers	.757
Image Barriers	.826
Innovation Resistance	.847
Actual Usage	.789

Source: own calculation

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From the table 5, it is proven that the variable of Usage Barrier, Value Barrier, Risk Barrier, Traditional Barrier, Image Barrier, Actual Usage, and Innovation Resistance having the Cronbach alpha value higher than 0.60. So, it can be concluded that the statements develop the variables can be said to be consistent/reliable and can be used for further analysis.

### 4.1.3. Results of Multiple Regression

Result of multiple regression can be shown as follows:

#### 1. Usage Barrier, Value Barrier, Risk Barrier, Traditional Barrier, Image Barrier to innovation Resistance

The results of multiple regression are as follows:

**Table 6. Coefisien Regression Model 1**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.245	.127		.376	.708
	UB	.388	.063	.286	4.720	.000
	VB	.220	.072	.074	2.547	.000
	RB	.480	.068	.508	6.352	.000
	TB	.542	.054	.546	4.354	.000
	IB	.356	.645	.324	5.231	.000
a. Dependent Variable: IR						

Source: own calculation

From table 6, the regression equation can be written as follows:

$$IR = b_1UB + b_2VB + b_3RB + b_4TB + b_5IB$$

$$IR = 0.388UB + 0.220VB + 0.480RB + .0542TB + 0.356IB$$

Based on table 6, all the independent variables have positively influence towards innovation resistance. Traditional barriers have the greatest regression coefficient compare to other variables, that is 0.542. Therefore, traditional barriers is the most influence to innovation resistance. In the other side, value barriers have the smallest effect on innovation resistance that is 0.220.

#### 2. Innovation Resistance to Actual Usage

The results of multiple regression are as follows:

**Table 7. Coefisien Regression Model 3**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.120	.312		-1.047	.272
	IR	.636	.072	.485	5.158	.000
a. Dependent Variable: AU						

Source: own calculation

Based on table 7, independent variables have positively influence towards Actual Usage. Innovation Resistance has regression coefficient is 0.636.

From table 8, the regression equation can be written as follows:

$$AU = b_8 IR$$

$$AU = 0.636 IR$$

### 4.1.4 F-test

Based on the calculation of SPSS, the significance of F test value in the model 1 and model 2 are 0.000, so it can be concluded two model's independent variables together influencing dependent variable significantly.

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**Table 8. Result of F-test 1**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.082	5	17.027	79.150	.000 <sup>b</sup>
	Residual	48.172	196	.195		
	Total	88.253	199			
a. Dependent Variable: IR						
b. Predictors: (Constant), UB,VB,RB,TB,IB						
<b>Source:</b> own calculation						

**Table 9. Result of F-test 2**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.664	1	39.332	229.172	.000 <sup>b</sup>
	Residual	43.554	197	.170		
	Total	118.217	199			
a. Dependent Variable: AU						
b. Predictors: (Constant), IR						
<b>Source:</b> own calculation						

### 4.1.5. t-test

Below is the result of t-test:

#### 1. Usage Barrier, Value Barrier, Risk Barrier, Traditional Barrier, and Image Barrier to Innovation Resistance

The t test used to determine whether the independent variables of usage barrier, value barrier, risk barrier, traditional barrier, and image barrier (independently) have significant influence on innovation resistance. If the value of t test is below 0.05, then it can be stated that the variable is significantly influenced by partially. From table 6, it can be seen that in all independent variables have significant influence on innovation resistance.

#### 2. Innovation Resistance to Actual Usage

The t test used to determine whether the independent variables innovation resistance partially (independently) have significant influence on actual usage. If the value of t test is below 0.05, then it can be stated that the variable is significantly influenced partially. From table 7, it can be seen that innovation resistance has significant influence on actual usage.

## V. DISCUSSION

The results of this study shows that the variables which usage barrier, value barrier, risk barrier, traditional barrier, and image barrier have positive and significant effects on innovation resistance. Also, innovation resistance have positive and significant effect on actual usage. So, the conclusion is that from six proposed hypotheses, all of hypotheses are supported.

The first hypothesis indicate that usage barriers has a positive significant effect on innovation resistance is supported. The first hypothesis stating that usage barriers has a positive effect on innovation resistance is supported because the t test value is 0.000, below 0.05. This shows the consistency results of this study with Ram and Shethe (1989) that states that usage barrier have a significant positive effect on innovation resistance.

The second hypothesis stating that value barriers has a positive significant effect on innovation resistance is supported. The second hypothesis indicate that value barriers has a positive effect on innovation resistance is supported because the t test value is 0.000, below 0.05. This shows the consistency results of this study with Davis et al (1989) that states that value barriers have a significant positive effect on innovation resistance.

The third hypothesis stating that risk barriers has a positive significant effect on innovation resistance is supported. The third hypothesis indicate that risk barriers has a positive effect on innovation resistance is supported because the t test value is 0.000, below 0.05. This shows the consistency results of this study with Forsythe and Shi (2003) that states that risk barrier have a significant positive effect on innovation resistance.

The fourth hypothesis indicate that traditional barriers has a positive significant effect on innovation resistance is supported. The fourth hypothesis stating that traditional barriers has a positive effect on innovation resistance is supported because the t



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test value is 0.000, below 0.05. This shows the consistency results of this study with Herbig and Day (1992) that states that traditional barriers have a significant positive effect on innovation resistance.

The fifth hypothesis indicate that image barriers has a positive significant effect on innovation resistance is supported. The fifth hypothesis stating that image barriers has a positive effect on innovation resistance is supported because the t test value is 0.000, below 0.05. This shows the consistency results of this study with Fortin and Renton (2003) that states that image barrier have a significant positive effect on innovation resistance.

The sixth hypothesis indicate that innovation resistance has a positive significant effect on actual usage is supported. The sixth hypothesis stating that usage innovation resistance has a positive effect on actual usage is supported because the t test value is 0.000, below 0.05. This shows the consistency results of this study with Rogers (2003) that states that innovation resistance have a significant positive effect on actual usage.

### **VI. CONCLUSION**

This model was developed in order to research Actual Usage for Go-Pay users in Surabaya. This research model formed an influence relationship between usage barrier, value barrier, risk barrier, traditional barrier, and image barrier have positive and significant effects on innovation resistance. Also, innovation resistance has positive and significant effect on actual usage. So, the conclusion is that from six proposed hypotheses, all hypotheses are supported.

As derived from the research outcomes, variables such as usage barrier, value barrier, risk barrier, traditional barrier, and image barrier have been the factors that are important to note as those variables have critical influence toward actual usage on users of Go-Pay in Surabaya. Therefore, the managerial implication must be concentrated upon those variables.

The managerial implications of these findings can be based on the theories that have been developed as follows. First, innovation resistance is one of the important variables that affects the level of actual usage. Go-Pay is a breakthrough innovation in payments, where not all Indonesians, especially Surabaya, are familiar with this breakthrough. Therefore, in order for Go-Pay to be well received for use, Go-Pay users need to adjust and adapt Go-Pay application. When users Go-Pay can use the application well and feel the efficiency that Go-Pay offer, they will feel Go-Pay is new lifestyle. With the easiness that Go-Pay has, can make users happy and will use it to help their life.

Second, usage barriers is the second influential variable to increase actual usage and the first variable that is most influential to increase innovation resistance Go-Pay users. Usage barrier can be used to overcome obstacles caused by the possible changes presented by innovation and measure the resistance that comes from the effort from users to learn and use that innovation. From the research results that has been carried out, the results obtained those difficulties in using the Go-Pay include payment, use of features, top-ups, upgrades Go-Pay Premium, bank transfers and changing the PIN, it will increase Innovation Resistance. Because of that, Go-Pay can make users have barriers to use their payment in daily transactions.

Third, value barrier is the variable that influence innovation resistance variables. Users feel by using the Go-Pay can increasingly wasteful, users feel that using digital payment applications is not suitable for their financial transactions compared to other methods. Users feel that digital payment applications cannot improve its ability to manage users' own financial transactions. Also, users feel with the hassle of top-up from digital payment applications in the Go-Pay. Users find it difficult to accept the new technology the app uses digital payments, users are afraid to use payment applications digital data with a PIN code. Users feel that PIN Code have possibility to be access by third parties.

Fourth, risk barriers also influence innovation resistance variable. From the results of research, the results showed that the worry about the accuracy of the information that might lead to errors. Users have fear of losing the internet connection and cause transaction errors, also fear of misinformation bills, insecurity regarding the loss of a PIN code that may be in in the wrong hands. In the other hand, users have fear of a possible third party being access the user account, when using the Go-Pay application. This cause will increase innovation resistance. This causes obstacles innovation due to the obstacles caused by the possible risks involved happened to users of the Go-Pay application.

Fifth, traditional barriers are the third variable that influences the innovation resistance variable. In addition, Go-Pay tends to be the same as competitors of e-money where users tend to be unfamiliar using e-money. All this time, people usually use real money not e-money, This habit make users not that trust to use e-money because they afraid their money will lost and e-money can't show the form of money that can be seen by eyes like real money. This reason causes the traditional barrier have effect to innovation resistance

Sixth, image barriers are the fourth variable that influences the innovation resistance variable. the image of the Go-Pay application have good image because of Go-Jek. But, top-up often have many obstacles (balance does not come in, balance



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comes in long), and technology which are often too complex to use, will improve Innovation Resistance, namely the emergence of obstacles to using the application Go-Pay is due to the obstacles caused by the negative image emerge.

### VII. RESEARCH LIMITATION

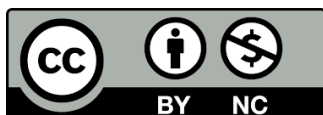
This study has limitation which is only examining in Indonesia. Future study can conduct on other countries where there are geographical differences that can be additional research attractiveness. Specifically, we take respondents residing in Surabaya only. Future research can develop for other areas. Also, this research only uses Go-Pay as research object, using other object can produce different results.

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