Factors that Affecting Continuance Intention to use E-ticketing on KRL JABODETABEK

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Abstract

Mass transportation modes in Jakarta and surrounding areas (JABODETABEK) are growing. One of the most used public transportation in JABODETABEK for daily basis is electric railway (KRL) to avoid traffic in the city. Along with increased the number of KRL passengers, PT KCI improve facilities of KRL. Therefore, KCJ also provide e -ticketing eager to support government program (GNNT) which is KMT. The objective of this research is to analyze factors inside modified UTAUT 2 model that influence the users on using KMT as e-ticketing on KRL JABODETABEK and to analyzed age and gender affecting the influence inside UTAUT 2 model in the context of using KMT. This research used data from 400 respondents who have been using KMT chosen by Purposive Non-Probability Sampling technique. To test the hypotheses, this research use Structural Equation Modelling (SEM) with SmartPLS 3.0 as statistic software. The result revealed that there are five factors in the UTAUT2 Model which significantly influence the continuance intention of KMT usage, namely Habit, Hedonic Motivation, Social Influence, Performance Expectancy, and Price Value. In terms of moderating factors, age does not affect any factors and gender only affect Habit. The model can predict moderate the continuance intention of KMT usage since the R^2 is 70.9%.

Keywords: *KMT, e-ticketing, e-money, Continuance Intention, UTAUT 2*

1. Introduction

Mass transportation modes in Jakarta and surrounding areas (JABODETABEK) are growing. Today, for example, people can use JABODETABEK Electric Railway (KRL) service operated by PT KAI Commuter Indonesia (KCI) and Trans Jakarta buses. In the future, in line with government programs, more mass transit types will be available in JABODETABEK, such as Mass Rapid Transit (MRT), Light Rapid Transit (LRT), and airport train. One of the most used public transportation in JABODETABEK for daily basis is electric railway (KRL) to avoid traffic in the city. Along with increased the number of KRL passengers, PT KCI improve facilities of KRL. [1]

Since August 2014, Bank Indonesia is eager to campaign National Movement of Non-Cash (GNNT) in the whole territory of Indonesia, non-cash stimulate growth target of 10% to follow the countries that had already launched cashless society. Cash remains the preferred of payment instrument for small-value transactions in Indonesia. [2] PT. KCI support government by provide e-ticketing for KRL's passengers which is KMT. Until now, PT KCI provide 3 types of tickets for the passengers, which are THB, KMT FeliCa, and KMT e-money from several banks. According to Rosmayanti (2016), PT KCJ has managed to sell more than 92,451 KMTs throughout the Jabodetabek Station in 2016. [3]

According to Supriyanto (2017), until the first semester of 2017, the number of electronic transactions of KMT users amounted to 72,552,054, THB of 73,982,645, and KMT of electronic bank card users of 29,408,103 banks. The transactions using THB are still greater rather than using KMT. [4]

2. Theoretical background

2.1 Behavior Intention
In this study, the behavioral intention variable adapts with Continuance Intention variable, continuance intention definition is adapted from behavior intention definition. Therefore, continuance intention definition is defined as the degree to which a person has formulated plans to continuously perform some specified KMT future behavior. Putri *et al.*, (2017) [5]

2.2 Performance Expectancy
In this research performance expectancy based on Venkatesh *et al.* (2003) [6] was defined as the degree to which using technology will provide benefits to consumers in using KMT.

2.3 Effort Expectancy

In this study, According to Venkatesh *et al*. (2012) [7] described effort expectancy as the degree of ease associated with consumers' use of KMT.

2.4 Social Influence

In this research, SI was defined by Venkatesh *et al*. (2012) [7] as the extent to which consumers perceive that important others (e.g. family and friends) believe they should use KMT.

2.5 Facilitating Condition

Based on Venkatesh *et al*. (2003) [6] stated that FC in this study is defined as consumers' perceptions of the resources and support available to perform a behavior to use KMT.

2.6 Hedonic Motivation

According to Venkatesh *et al*. (2003) [6], in this study HM means the fun or pleasure derived from using KMT.

2.7 Price Value

PV has been defined as consumers' cognitive trade-offs between the perceived benefits of the applications and the monetary cost for using technology based on Venkatesh *et al*. (2003).[6] When the perceived benefits are greater than the costs that come out then the price value can be said positive. Therefore, PV on this research means perceived benefits that users get from cost that users have to pay when using KMT.

2.8 Habit

HA is defined as "the extent to which people tend to perform behaviors automatically because of learning", and it can also be viewed as a "perceptual construct that reflects the results of prior experiences" (Venkatesh *et al.,* 2012, p. 161).[7] Therefore, in this research habit is defined as the extent to which people tend to perform behavior automatically because of learning on using KMT.
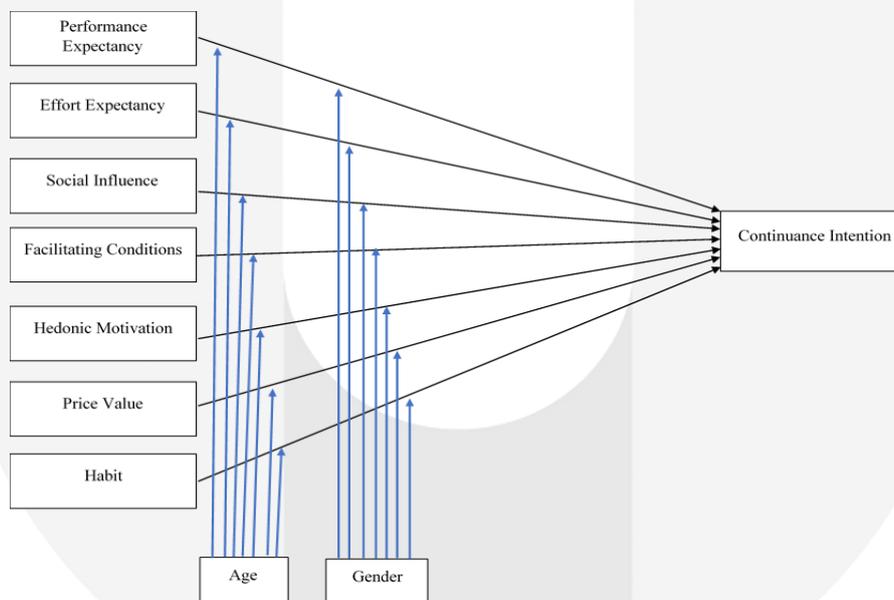
2.9 Research Framework

Figure 2.1 Research Framework

2.10 Research Hypotheses

H1   *Performance Expectancy* has positive and significant effect on *Continuance Intention*
H1a   *Performance Expectancy's* influence on *Continuance Intention* is moderated by *Age*
H1b   *Performance Expectancy's* influence on *Continuance Intention* is moderated by *Gender*
H2   *Effort Expectancy* has positive and significant effect on *Continuance Intention*
H2a   *Effort Expectancy's* influence on *Continuance Intention* is moderated by *Age*
H2b   *Effort Expectancy's* influence on *Continuance Intention* is moderated by *Gender*
H3   *Social Influence* has positive and significant effect on *Continuance Intention*

H3a	*Social Influence's* influence on *Continuance Intention* is moderated by *Age*
H3b	*Social Influence's* influence on *Continuance Intention* is moderated by *Gender*
H4	*Facilitating Conditions* has positive and significant effect on *Continuance Intention*
H4a	*Facilitating Condition's* influence on *Continuance Intention* is moderated by *Age*
H4b	*Facilitating Condition's* influence on *Continuance Intention* is moderated by *Gender*
H5	*Hedonic Motivation* has positive and significant effect on *Continuance Intention*
H5a	*Hedonic Motivation's* influence on *Continuance Intention* is moderated by *Age*
H5b	*Hedonic Motivation's* influence on *Continuance Intention* is moderated by *Gender*
H6	*Price Value* has positive and significant effect on *Continuance Intention*
H6a	*Price Value's* influence on *Continuance Intention* is moderated by *Age*
H6b	*Price Value's* influence on *Continuance Intention* is moderated by *Gender*
H7	*Habit* has positive and significant effect on *Continuance Intention*
H7a	*Habit's* influence on *Continuance Intention* is moderated by *Age*
H7b	*Habit's* influence on *Continuance Intention* is moderated by *Gender*

3. Methodology

3.1 Research Characteristic

In this research, author use quantitative method. According to Zikmund *et al.* (2010) [8] quantitative research is a research that use numerical measurement and analysis approach to express research objective. The purpose of this research is causal research. According to Indrawati (2015) [9], the objective of causal research is to understand which variables the causes and which variables the effects are.

3.2 Measurement Scale

The Likert scale is a useful psychological measurement tool for measuring attitudes, values, and opinions. This research uses systematic differential with 5 levels of measurement, ranging from "Strongly Disagree" to "Strongly Agree".

3.3 Population and Sample

According to Hair *et al.,* (2010:661) [10] suggested sample size for SEM in the range of 100 to 400. The population in this study is the passenger of KRL transportation service who have used the KMT.

3.4 Data Testing Technique

This study uses SEM methodology that uses Smart PLS due to its structure and complexity. Partial least squares regression is a variance-based statistical method. The analytical software used in this study is smart PLS 3.

3.5 Validity Test

The pilot test conducted on SPSS to test the reliability and validity due to the number of samples gathered are below 100. The pilot test gathered from 30 respondents that have all the variables valid Due to the 5% of sampling error allowance and the Pearson's R table for 0.05.

3.6 Reliability Test

The data reliability of this research is to see the adequateness of Alpha Cronbach and Composite of the variables' Reliabilitiness using SPSS software. For reliability value limits refer to the criteria of Sekaran (2010:325) [11] where the Cronbach's Alpha coefficient $\geq$ 0.60 is considered reliable. In general, reliabilities less than 0.60 are considered to be poor. The result reveals that all the variables are valid.

4. Research Result

4.1 analysis of structural equation model

a. outer model

The data is gathered from 400 respondents and then processed and tested for discriminant validity.

4.1 outer model
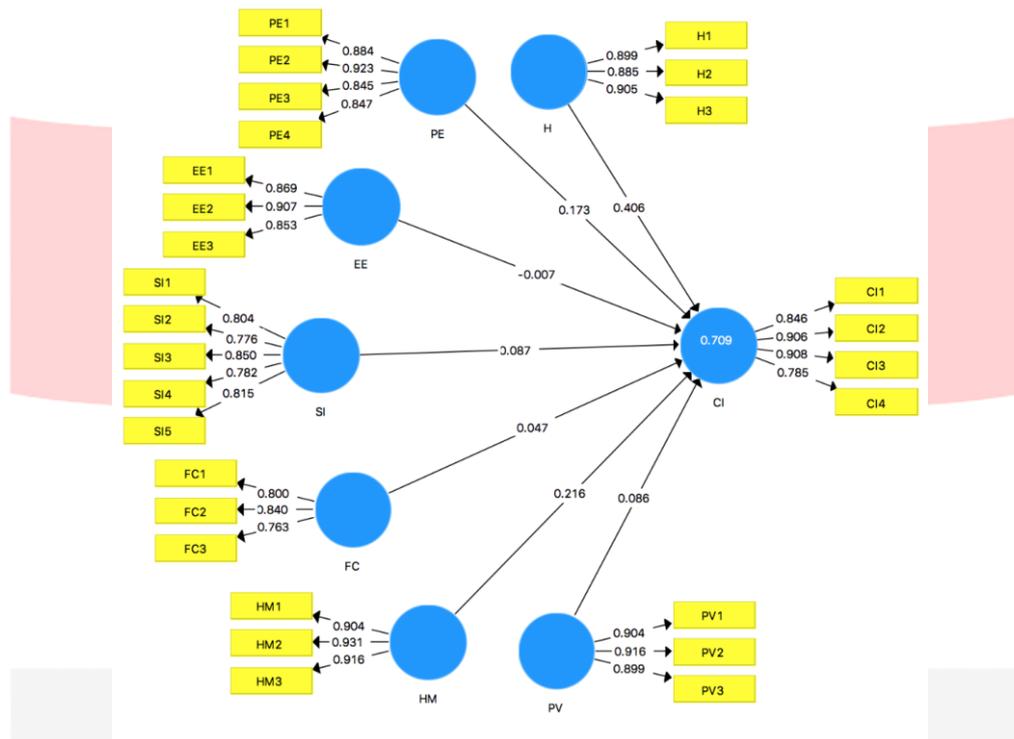
1. Convergent validity

Convergent validity is conducted to test the accurate level of items inside a variable to measure the research object. The indicator used in this test is using Factor Loading (FL). According to the Hair *et al*. (2010) in Indrawati (2015) [9] the item can be said to have a convergent validity if the FL score is ≥0.5. The result of the FL scores of this research can be seen in Table 4.1.

4.1 Factor Loading Score

Latent Variable	Indicator	Factor Loading	Conclusion	Latent Variable	Indicator	Factor Loading	Conclusion
Continuance Intention (CI)	CI1<- CI	0.84	Valid	Facilitating Conditions (FC)	FC2<- FC	0.84	Valid
	CI2<- CI	0.90	Valid		FC3<- FC	0.76	Valid
	CI3<- CI	0.90	Valid	Habit (H)	H1<- H	0.89	Valid
	CI4<- CI	0.78	Valid		H2<- H	0.88	Valid
Effort Expectancy (EE)	EE1<- EE	0.87	Valid		H3<- H	0.90	Valid
	EE2<- EE	0.90	Valid	Hedonic Motivation (HM)	HM1<- HM	0.90	Valid
	EE3<- EE	0.85	Valid				
	FC1<- FC	0.80	Valid		HM2<- HM	0.93	Valid

Latent Variable	Indicator	Factor Loading	Conclusion
	HM3<-HM	0.91	Valid
Performance Expectancy (PE)	PE1< PE	0.88	Valid
	PE2< PE	0.92	Valid
	PE3< PE	0.84	Valid
	PE4< PE	0.84	Valid
	PV1<- PV	0.90	Valid

Latent Variable	Indicator	Factor Loading	Conclusion
Price Value (PV)	PV2<- PV	0.91	Valid
	PV3<- PV	0.89	Valid
Social Influence (SI)	SI1<- SI	0.80	Valid
	SI2<- SI	0.77	Valid
	SI3<- SI	0.85	Valid
	SI4<- SI	0.78	Valid
	SI5<- SI	0.81	Valid

Source: SmartPLS 3 Result Processed by the Author

As shown on the table 4.1, all the indicators/items on this study are valid. Every indicator revealed that the factor loading is ≥0.5. The next test is the AVE score which is more than 0.50 shows that the items of a variable has an enough convergent validity. (Hair et. al 2010; Ghozali, 2008) in Indrawati (2015) [9].

4.2 AVE score

Variable	Average Variance Extracted (AVE)
Continuance Intention	0.744
Effort Expectancy	0.769
Facilitating Conditions	0.642
Habit	0.804
Hedonic Motivation	0.841
Performance Expectancy	0.766
Price Value	0.821
Social Influence	0.650

Source: SmartPLS 3 Result Processed by the Author

From the calculation using Smart PLS 3.0, the AVE scores of each variable is more than 0.50. Therefore, the questionnaire fulfills the criteria of convergent validity.

2. Discriminant Validity

Along with convergent validity, according to the Liu and Li (2011) in Indrawati (2017) [12], an indicator can be said as valid if the indicator of a construct has a higher correlation score compared to the score with another construct.

3. Composite Reliability

According to the Indrawati (2015) [9], the reliability relates with a consistency and also a stability of a measurement result.

4.3 Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability
CI	0.884	0.921
EE	0.849	0.909
FC	0.722	0.843
H	0.878	0.925
HM	0.905	0.941
PE	0.898	0.929
PV	0.892	0.932
SI	0.865	0.903

Source: SmartPLS 3 Result Processed by the Author

Table 4.4 shows that all the variables of this research have fulfill the criteria of Cronbach Alpha and Composite Reliability because the values are more than 0.6.

4.2 Inner Model

According to Indrawati (2017) [12], the second test of PLS is Assessment of the structural model or Inner model Test. This test is conducted to know the influence of the latent variables towards another latent variable. The test is conducted by looking at the path value to see whether the influence is significant or not. This test required bootstrapping procedure to get the t-value. Besides the t-value, the variance percentage need to be concerned, which is R^2 for dependent latent variable. The R^2 result 0.67; 0.33; and 0.19 indicate that the model is "Good", "Moderate", and "Weak". (Indrawati, 2017:71) [12]. On this research R^2 for *Continuance Intention* is 70.9% which is categorized as good model.
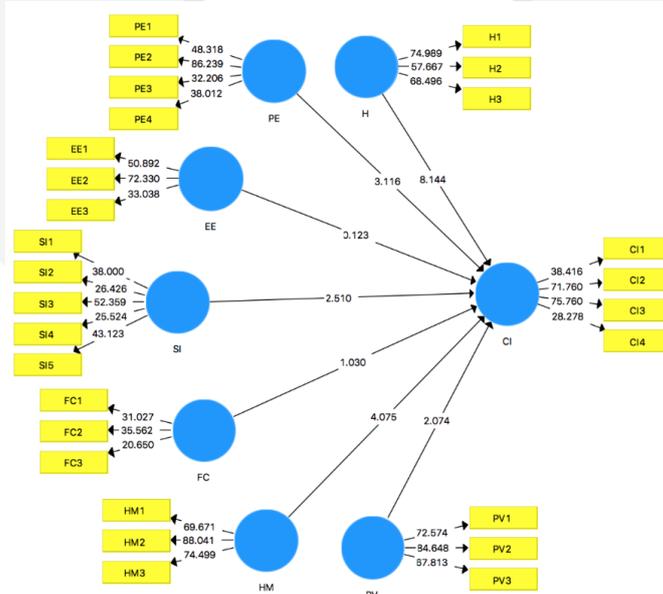
4.2 Inner Model Path

4.4 Path Coefficient and T-Value

No.	Path diagram	Path coefficient	T-value	Conclusion
1	EE -> CI	-0.007	0.123	H_1 rejected
2	FC -> CI	0.047	1.030	H_1 rejected
3	H -> CI	0.406	8.144	H_1 accepted
4	HM -> CI	0.216	4.075	H_1 accepted
5	PE -> CI	0.173	3.116	H_1 accepted
6	PV -> CI	0.086	2.074	H_1 accepted
7	SI -> CI	0.087	2.510	H_1 accepted

Source: SmartPLS 3 Result Processed by the Author

In this research, the significance level that author used is 5%. By using significance level of 5%, if the t-value result is greater than 1.65 means that there is a significant influence between independent variable and dependent variable, then, H_0 rejected.

5. Conclusion and suggestion

5.1 Conclusion

According to processed data result, there are 5 factors that influencing the *Continuance Intention* on the use of KMT which are *Habit* (8.144), *Hedonic Motivation* (4.075), *Performance Expectancy* (3.116), *Social Influence* (2.510), and *Price Value* (2.074). The influence on *Continuance Intention* is 70.9%. According to moderating variable aspect, *gender* only moderating the influence of *Habits* on *Continuance Intention.* While *Age* is not moderating any influence on *Continuance Intention*.

5.2 Suggestion

5.2.1 Suggestion for Company

Based on 5 factors that influence the continuance intention to use KMT. These are the suggestions: the most significant factor is *Habit.* The KCI needs to make their customer habitual to use KMT on their daily life. Socialization about the importance and benefits of KMT can be one of the solution to make people habitual to use the services by putting interesting banners surround stations, or digitally on twitter and website of KRL JABODETABEK. The second factors that affecting continuance intention to use KMT is *Hedonic Motivation*. In order to satisfy the users, PT KCI need to consider about the features that they deliver. PT KCI could offers special limited edition KMT card in special day, like Kartini day, Eid-fitr edition, Pancasila day, etc. The third factors that influence users to continue using KMT is *Performance Expectancy*. By increasing passenger's awareness the about KMT and the rules could help improve performance expectancy. Also, PT KCI could make sure the passengers can effectively pass the gate by providing the staff around electronic gate and also easily top-up the balance using vending machine. The forth is social influence. PT KCI would be better to have more interactions with some communities or with the one who are important or key player inside the communities for example twitter's KRL community. The lowest is price value. PT KCI could give special offer for those who have bought THB (daily ticket) could exchange their ticket KMT for free.

5.2.2 Suggestion For Future Research

Since this modified UTAUT2 Model can be used for predicting the Continuance intention of using KMT as e-ticketing on KRL JABODETABEK since it has a moderate explanatory power which is 70.9% and categorized as a good model, and since the age and gender as moderating do not really affect the factors, further research is expected to add the moderating variable that might affect the factors.

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