Factors Affecting Consumers' Decision Toward Kios Tiket Mandiri Adoption in Purchasing Train Tickets in Indonesia

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Abstract. *Recently, the information communication technology has been developed very fast. It has been implemented in many area of business including in business transaction such as e-payment. One of the e-payment which has been developed is Kios Tiket Mandiri or KTM. KTM is a self-service electronic payment machine provided by PT Finnet Indonesia for train ticket sales service at several stations in Indonesia. In providing this KTM service, PT Finnet Indonesia has spent quite high investment, but adoption of KTM service by customers is still low. Therefore, this study tries to identify and test the factors considered by train passengers during adopting KTM service. Identified factors can be used to motivate the customers and prospective customers to use the KTM once they need a train ticket. This study uses a modified unified theory of acceptance and use of technology 2 (UTAUT2) model [1] approach in which the independent variables are Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Price Value, Habit and Trust, while Behavior Intention is intervening variable, and Behavior to Use is a dependent variable. The study also examines the variables of Age and Gender as moderating variables. The main data were collected by using valid and reliable questionnaire distributed purposively in 3 train stations, namely station Bandung, Pasar Senen and Gambir Jakarta. This study was able to collect data from 400 valid respondents which were analyzed by using partial least square (PLS). This study found that Performance Expectancy was the most influential variable to Behavioral Intention with the path coefficient value of 0.48, second variable was Social Influence with the path coefficient value of 0.22, Effort expectancy with the path coefficient value of 0.14, Price Value with the path coefficient value of 0.13, Habit with the path coefficient value of 0.13, Facilitating Condition with the path coefficient value of 0.08, and Trust with the path coefficient value of 0.08. Based on the findings, this study suggests PT. Finnet to make the customers and prospective customers find that KTM is useful by make them easy to get train ticket, does not let them queuing. Making the customers want to motivate people around them want to use KTM is another effort to do since Social Influence is the second biggest influential factor after Performance Expectancy.*

Keywords. *KTM; Train Station; Ticket; Modified; UTAUT2; Indonesia.*

I. INTRODUCTION

Advances in technology have an impact on social change in community. Consumers that have been facilitated by the technology become communities who want to try something new by following the technology trends growing continually. The technological advance in the payment system is in line with the needs of consumers, in which technological developments in the field of information and communication have an impact on non-cash payments with the emergence of new innovations. Competition in the payment industry is forcing companies to constantly innovate with services, solutions or new products in order to always survive in the competition and hope to grow sustainably.

In a constantly evolving business environment, the only thing that remains is change itself. Companies must be able to manage change effectively, continuously adjust the bureaucracy, strategy, systems, products and culture, in order to withstand the shocks and to grow due to the strength that is able to cut the competition.

The company's strategy to increase revenues can be done in various ways, one of which is innovating products. The consequence of innovation is the increased cost. This way is carried out in order that the company can continue to keep up with technology, and can significantly increase the company's revenue.

One of the lines of business that currently becomes a trend and grows continuely is train ticket sales business, where the trend of train passengers continues to increase from year to year as showed by the Train Annual Report 2014 [2] in Table 1.

Table 1: Volume of Passenger Transportation

Description	Unit	2012	2013	2014
Passenger	Million Passengers	202.88	221.73	279.52
Jabodetabek Passenger	Million Passengers	134.09	158.34	208.49
Non-Jabodetabek Passenger	Million Passengers	68.79	63.38	71.03

Thiscertainly becomes a business opportunity for e-payment company, in which until now no e-payment has touched passengers in stations directly, the development of ticket sales which is currently carried out by various companiesonly focuses on outside of the train station, so that passengers who buy tickets through the station seem to be neglected and are only serviced by the Indonesian Railways Corporation as indicated byTrain ticket sales report through the countersin the stations in April 2015 [3], in Table 2 below.

Table. 2 The number of ticket sales transactions through the counters of KAI stations

No	Station	Station Counter Transaction in April 2015		
		Daily Transaction	Weekly Transaction	Monthly
1	Pasar Senen	1.014	7.101	30.420
2	Bandung	940	6.583	28.200
3	Gambir	913	6.392	27.390
4	Surabaya Gubeng	603	4.218	18.090
5	Yogyakarta	565	3.954	16.950
6	Solo Balapan	413	2.894	12.390
7	Cirebon	304	2.130	9.120
8	Semarang Tawang	275	1.926	8.250
9	Surabaya Pasar Turi	271	1.895	8.130
10	Purwokerto	245	1.713	7.350
11	Madiun	157	1.102	4.710
12	Jember	152	1.062	4.560

This report shows that there are still many Train passengers who choose to buy tickets directly through the Train Station. This is a great opportunity for e-payment business. PT Finnet Indonesia in cooperation with Kereta Api Indonesia (KAI) conducts payment business development in the Train Station by launching a product that can serve ticket purchases directly and independently without any help of the train officers. This product is named *Kios Tiket Mandiri* or shortened to KTM. By using KTM, the passengers do not have to wait for the counter to be opened, because it can serve 24 hours. KTM accepts payments in cash and alsoaccepts payment through debit cardsof all banks. KTM can serve tickets purchase at one hour before the train departs, in whichsuch a service was previously only done through the countersof Train Station.

KTM is a new technological breakthrough in e-payment, especially in Indonesia, but this has notbeen accepted fully yet by consumers, especially train passengers. Some adjustments may need to be made and consumers should familiarize themserlves with its use, in which they were always served and now they have to serve themselves. From this background, the researcherstry to find out some factors that may influence behavioral intention and Behavior to Use among passengers in using KTM in Train tickets purchase. Based on the Unified Theory of Acceptance and Use of Technology (UTAUT) 2 from Venkatesh [1], a new modified UTAUT 2 models proposed on KTM adoption. The purpose of this study is to propose a model to predict behavior of customers toward KTM in Indonesia.

II. MODIFIED UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT) 2

Based on the phenomena alreadydescribed above, the researchers have conducted a review of several theories about the adoption of technology. Technology adoption theory is divided into nine theories and each theory is interconnected to one another. One theory often emerges due to the existence of previous theories, or the development of the previous theory [4]. Approach methods to understand the adoption of a technology by user are: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model(TAM), Motivational Model (MM), Combined TAM – TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Difution Theory (IDT), Social Cognitive Theory (SCT), Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT hasthe highestpredictive power with R2 = 70% compared with eight previous theories that only have R2 between 17-53% [4] Regarding the results of literature reviews on the nine theories, the researchers decide to use UTAUT2 theory. There searchers choose to use this model because the model has the greatest predicted power compared with eight other theories.

In the application of the model in every region has different results - different in this case depends on many factors. One model that can be implemented in the country may not be directly applicable in other countries due to characteristics customers, social and economic backgrounds. Indonesia has customers' characteristics, socially and economically very different from other countries [5]. As the study found some findings while doing observation of interviews with business operators in this regard with officials of Railways Indonesia and with some customers Railways associated with purchasing tickets through the service KTM, researchers found that required the addition of a variable that is variable Trust in the model UTAUT2. Therefore, this study used a modified UTAUT2. The level of trust in the transaction with the new technology affects the intention to adopt Ticket Booking services via KTM. Someone would prefer to use self-service technology if the service is perceived can help simplify their work, ease of use, fun, and not at risk, and control [6].

Moderator variables in this study only involved Age and Gender, by not including the Experience. Due to this research data collection is only done in a period of time, and is not a longitudinal study, therefore, experience is not included in the model. In a previous study by Indrawati [7] on the acceptance of 3G mobile multimedia services involved moderator variables Age and Gender. Moderator variables can increase the value of the prediction model, therefore this study only includes Age and Gender as moderating variable.

Variable Performance Expectancy has positive significant influence customer to many service in Indonesia, such as 3G multimedia services [5]. The influence of Performance Expectancy to Behavioral Intention varied to Age and Gender, research Venkatesh et al. [8] found that the effect is more significant in younger men.

Adopted form Venkatesh et al [8], this study defines Effort Expectancy as the level of convenience associated with the use of KTM service. The results of the study of Venkatesh et al [8] found that Effort Expectancy has a positive effects on Behavioral Intention. The effect of Effort Expectancy to Behavioral Intention is moderated by Age and Gender. The effect is more significant to older women. Effort Expectancy has positively influenced to the Behavioral Intention of consumers toward the use of 3G multimedia services [9].

This study defines Social influence as the extent an individual perceives that the other person who is considered important influence someone in using the new system. According Muhayiddin et al [10] Social influence is the extent to which individuals perceive others, especially those that are considered important for the individual, convinced that he should use the technology or the new system. Social influence positive effect on Behavioral Intention [1,8,11,12].

This study defines *Facilitating Condition*as the extent to which an individual believes that the organization and technical infrastructure exist to support the use of the system [8]. According Muhayiddin [10], Facilitating Condition is the degree to which an individual is convinced that the organization and technical structures exist and will support the use of new technology and system. Facilitating Condition positive effects Behavioral Intention [1,8,11]. Facilitating Condition positively affects actual use / use Behavior [1,8]. Age and gender factors are moderating the effect of Facilitating Condition on Behavioral Intention and use Behavior [1,8].

This study defines *Habit* as a perception that reflects the results of previous experiences. Based on previous research reviewed by Venkatesh et al [1] Habit is an automatic action that occurs based on the level of experience they have. Venkatesh et al [1] also proved that Habit positively affects Behavioral Intention and use Behavior whichis moderated by age and gender.

This study defines *Price Value* as a consumer cognitive exchange between the perceived benefits over the use and the monetary cost to use it [1]. Price Value becomes positive when the perceived benefit of technology use is higher than the monetary costs. Venkatesh et al [1] have proved that Price Value is an important factor in determining the acceptance and use of technology who's the effect is moderated by age and gender.

This study defines the *Trust* as an indicator of an individual in deciding to use a new system. According Koufaris [13], indicators of trust include: "trustworthy, keep the best interest, keep the promises and commitment, believe the information provided and genuinely concerned". Mayer et al. in Koufaris [13] defined trust as " the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the agility to monitor or control that other party ". Morgan and Hunt in Huang and Wilkinson [14] stated that trust will exist when one party is confident that the partners are reliable and have integrity. In line with these opinions Lewicki, et al in Bart, Shankar, Sultan, and Urban. [15] state that trust "implies a party's willingness to accept vulnerability but with an expectation or confidence that it can rely on the other party". Some opinions above illustrate that trust can be obtained if a person has the self-confidence towards the reliability and integrity of the partner. Considering the important of trust in using a new system, this study adds Trust as independent variable to UTAUT2 model.

Besides the addition of independent variable, the researchers also make adjustments onmoderating variables, which are Age and Gender. Thus, the modified UTAUT 2 model is

composed of 7 independent variables, 2 moderating variables and 1 dependent variable. Fig. 1 is the modified UTAUT 2 proposed in this study.

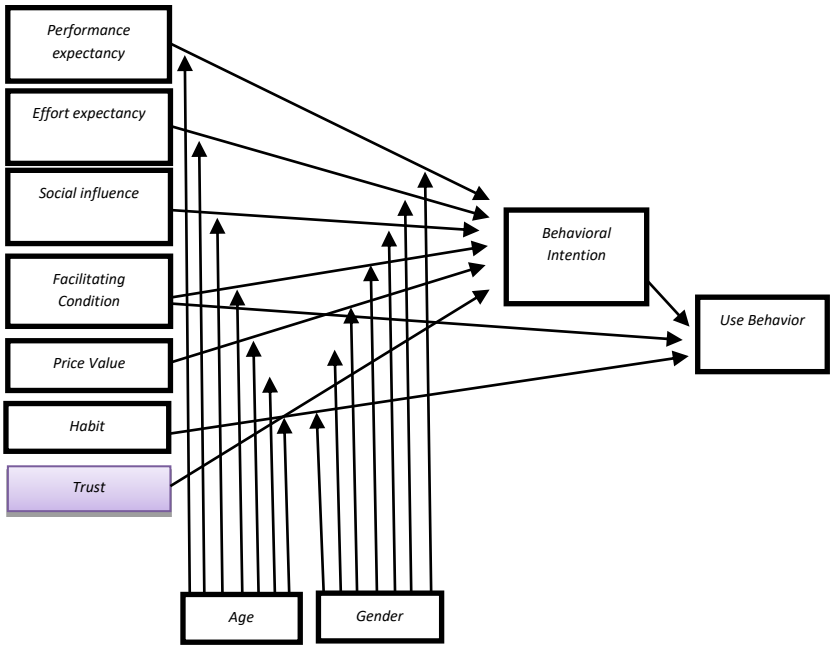

Fig. 1. Proposed Model based on UTAUT2 model of Venkatesh at al [1]

III. MEASUREMENT MODEL

In testing the modified model as shown in Fig. 1, in this study uses a set of questionnaire developed in such a way to get content validity, face validity, construct validity, and convergent validity [4]. In readability test, the questionnaires are given to a people in each level of educations in the population. Having information that the questionnaire are readable, the next step is pilot test to prove if the questionnaire fulfills the construct validity and reliability [16]. For pilot test, this study was able to collect data from 30 respondens from three different stations, namely station Pasar Senen, Gambir station and Bandung station which use KTM to buy ticket. This was done following Hair, Black, Babin, Anderson. [17] who stated that pilot test can use a small convenience sample of respondents, while the size of samples is also following Levine [18] who stated that when the sample size is 30 and above the sampling distribution looks approximately normal. The values in the column labeled Corrected Item-Total Correlation (CITC) should be higher than 0.3 to be considered valid [17]. Another common score to see the reliability of questionnaire is Cronbach Alpha (CA). The accepted CA is 0.7 and above [4, 17, 18, 19]. The construct validity and reliability of the questionnaires were analyzed using SPSS software. The results of the pilot study in this research as shown in Table 3 which revealed that all the items and variables of questionnaires fulfill the requirements of validity and reliability.

Table 3. Validity & Reliability Test Result

Construct	Indicator	CIT C	CA
Performance Expectancy	PE1	.941	
	PE2	.947	
	PE3	.904	.955

	PE4	.834	
	PE5	.771	
	PE6	.799	
Effort Expectancy	EE1	.943	.954
	EE2	.952	
	EE3	.953	
	EE4	.939	
	EE5	.941	
	EE6	.945	
	EE7	.954	
Social Influence	SI1	.820	.870
	SI2	.827	
	SI3	.822	
	SI4	.879	
	SI5	.874	
	SI6	.854	
Facilitating Condition	FC1	.799	.855
	FC2	.798	
	FC3	.817	
	FC4	.841	
	FC5	.860	
Price Value	PV1	.824	.915
	PV2	.855	
	PV3	.827	
Habit	H1	.772	.884
	H2	.860	
	H3	.883	
Trust	T1	.950	.954
	T2	.951	
	T3	.947	
	T4	.945	
	T5	.940	
	T6	.945	
	T7	.948	
Behavioral Intention	BI1	.910	.912
	BI2	.887	
	BI3	.883	
	BI4	.879	
	BI5	.904	
Use Behavior	UB1	.885	.844
	UB2	.788	
	UB3	.755	
	UB4	.765	

IV. HYPOTHESIS

Based on the modified UTAUT2 as presented in Fig. 1, the hypotheses of this study are as shown in Table 4.

Table 4. Hypotheses of the Study

H1a	Performance expectancy has positive significant influence to behavioral Intention
H2a	Effort expectancy has positive significant influence to behavioral Intention.
H3a	Social influence has positive significant influence to behavioral Intention.
H4a	Facilitating Conditions has positive significant influence to behavioral Intention.
H4b	Facilitating Conditions has positive significant influence to use behavior.
H5a	Price Value has positive significant influence to behavioral Intention.
H6a	Habit has positive significant influence to behavioral Intention.
H6b	Habit has positive significant influence to use behavior.
H7a	Trust has positive significant influence to behavioral Intention.
H8a1	Age affects Performance Expectancy Influence to Behavioral Intention
H9a1	Gender affects Performance Expectancy Influence to Behavioral Intention
H8a2	Age affects Effort Expectancy Influence to Behavioral Intention
H9a2	Gender affects Effort Expectancy Influence to Behavioral Intention
H8a3	Age affects Social Influence Influence to Behavioral Intention
H9a3	Gender affects Social Influence Influence to Behavioral Intention
H8a4	Age affects Facilitating Condition Influence to Behavioral Intention
H9a4	Gender affects Facilitating Condition Influence to Behavioral Intention
H8b4	Age affects Facilitating Condition Influence to Use Behavioral
H9b4	Gender affects Facilitating Condition Influence to Use Behavioral
H8a5	Age affects Price Value Influence to Behavioral Intention
H9a5	Gender affects Price Value Influence to Behavioral Intention
H8a6	Age affects Habit Influence to Behavioral Intention
H9a6	Gender affects Habit Influence to Behavioral Intention
H8b6	Age affects Habit Influence to Use Behavioral
H9b6	Gender affects Habit Influence to Use Behavioral
H8a7	Age affects Trust Influence to Behavioral Intention
H9a7	Gender affects Trust Influence to Behavioral Intention
H10	Behavioral Intention has positive significant influence to Use behavioral.

V. DATA COLLECTION, ANALYSIS, AND RESULT

Primary data to test the model were collected from respondents by distributing the questionnaire offline in three different stations, namely station Pasar Senen, Gambir station and Bandung station starting from July 1 until August 25, 2016. The three stations are chosen is based on the uniqueness of each station, which can represent a whole Railway station throughout Indonesia. Data obtained from 475 respondents with 400 respondents declared to be valid. The valid data were the respondents who have passed the screening question and have answered all the questions. The analysis of respondents' profiles shows a considerable difference between young-age under 25 years (31%) and old – age 25 until 65 years (69%) respondents, male (64%) and female (36%) respondents.

The differenced of respondents' profiles for Gender is related to the use KTM, besides they should already have an ID card they must also be able to use the service KTM where the use of services like the use of ATM, so that for a child under the age of 16 years will find KTM difficult to use.

Collected data were analyzed by using Partial Least Square (PLS) with SmartPLS 2.0 software which has two stages, namely assessment of the measurement model and testing of structural models. The aim of assessment on a measurement model was to make sure that the items used have the ability to measure the variables with reliable and valid. The tests carried

out using Cronbach's Alpha (CA) as a reliability indicator with the reference value of 0.7, Composite Reliability (CR) with a reference value of 0.7 and Average Variance Extracted (AVE) with the reference value of 0.5 [17,18,20].

The values of measurement testing revealed that all the reliability and validity requirements were fulfilled the requirements. Having the test results that all variables were valid and reliable, then the next testing stages of PLS is analyzing for Structural Model to get the value of the path coefficients. The path coefficients and the t-values (from bootstrapping method in the application tools of SmartPLS 2.0) of each variable are shown in Table 5

Table 5. Path Coefficients and t-Values

Hypothesis	Correlation of Variable	Path Coefficient	t-Value	Level of Significant	Result
H1a	PE --> BI	0.46	2.35	99%	Accepted
H2a	EE --> BI	0.14	2.47	99%	Accepted
H3a	SI --> BI	0.22	1.81	95%	Accepted
H4a	FC --> BI	0.08	3.97	99,9%	Accepted
H4b	FC --> UB	0.08	1.44	90%	Accepted
H5a	PV --> BI	0.13	0.71	90%	Rejected
H6a	H --> BI	0.13	1.35	90%	Accepted
H6b	H --> UB	0.08	2.52	99%	Accepted
H7a	T --> BI	0.08	4.97	99,9%	Accepted
H10	BI --> UB	0.25	8.58	99,9%	Accepted

Based on the results shown in Table 4, it can be concluded that the independent variables Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Habit, and Trust have positive significant influence on the Behavior Intention. Habit, Facilitating Condition and Behavior Intention have positive significant influence on the Use Behavior. Price Value does not have significant influence on the Behavior Intention.

In addition to the direct test of independent variables to the dependent variables, this study also tested moderating variable, the result of the moderating variables of age and gender are presented in Table 6.

Table 6. Results for Moderation Variables

Correlation of Variable	Age		Gender	
	t-Value	Result	t-Value	Result
PE --> BI	0.360	Rejected	0.407	Rejected
EE --> BI	0.590	Rejected	0.840	Rejected
SI --> BI	0.579	Rejected	1.198	Rejected
FC --> BI	0.574	Rejected	0.723	Rejected
FC --> UB	0.004	Rejected	2.003	Accepted
PV --> BI	1.557	Rejected	1.184	Rejected
H --> BI	1.369	Rejected	2.654	Accepted
H --> UB	1.156	Rejected	0.460	Rejected
T --> BI	0.306	Rejected	0.766	Rejected

Based on Table 6, it can be seen that age does not moderate the relationships of the variables in the model while gender only moderate the influence of Facilitating condition to Use Behavior, and the influence of Habit to Behavioral Intention.

VI. CONCLUSIONS & SUGGESTIONS

This research's model reveals R-squares for Behaviour Intention of 0.40 which means that the variables used in the model affect 40% of customer Behaviour Intention toward KTM while the remaining (60%) is influenced by other variables outside of this study. The R-squares for Use Behaviour is 0.34 which means that the variables used in this study affect 34% of customer toward using KTM while 66% is influenced by other variables outside of this study. Thus the power of Modified UTAUT2 models to predict the intention and use behavior of customers toward KTM Service is only average.

Suggestion for PT. Finnet Indonesia

Based on the result of this research which indicate that for customer Performance Expectancy and Effort Expectancy are the two most important variable, therefore PT Finnet Indonesia needs to add more complete information about KTM, such as how to use, the benefits and functions of each menu. This should be done during customers are using the KTM service. Based on the result of observation done by this study, no officer can escort the customer directly to use the KTM without anxiety.

Suggestions for Further Study

This study reveals that the variable behavioral intention has only R square of 40%, meaning that 60% of the behavioral intention is explained by other variables which are not examined in this study. Variable use behavior has only R square of 34%, meaning that 66% is explained by other variables which are not examined in this study. Thus this study suggest to add or find other variables might influence the behavior, such as awareness, switching cost, and user satisfaction. It is hope that further research can better explain behavioral intention and use behavior to adopt KTM Service.

This study uses a Modified UTAUT 2 model by using age as moderation varieble with the number of users in the age group "Adult" has a larger composition than users in the age group "Youth", to expand the representativeness and balance of the group it is hope that in the future research the number of people in each group should be balanced.

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