End-User Acceptance Of E-Government Services In an Indonesia Regency

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***Abstract*—The aim of this research to investigate citizen's beh aviour in e-Government adoption. The final purpose is to understanding of the public intention at the local government level, the of important things to make e-government service become successful is public acceptance and willingness to use e-government services. Therefore this study used a model of UTAUT base on the unique problems which consists of six main variables that affect behavioral intention and use behavior, these variables are privacy, trust, performance expectancy, effort expectancy, social influence, and facilitating condition. At the practical level, the research aim to guide e-Government policy decision makers to better plan, design and implemet policies and strategies.**

Keyword*—e-government,UTAUT, SEM*

I. BACKGROUND

Indonesia's economic growth from year to year showed an increase. The average economic growth in the period 2010-2014 amounted to 6.3-6.8 percent. Economic growth targets in the National Medium Term Development Plan (RPJMN) 2010-2014 is a minimal economic growth reached 7 percent in 2014. The need for high economic growth and sustainable will encourage Indonesia became the world's top 10 economies by 2025. Off course Information and Communication Technology will become the backbone to support the implementation of democracy and service to the community, one of the form is the use of e-government. The development of Information and Communication Technology (ICT), which rapidly at this point a significant impact on human life. This prompted a change in the processes, functions, and policies in various sectors of human life into the ICT-based [4][5]. E-Government as an activity under taken by the government to use Information.

Technology (IT) to deliver services to the public [3]. From these definitions, can be seen that the main purpose of e-government is to improve the efficiency and quality of service[8]. Almost all government institutions in the world to experience in efficiencies, particularly in developing countries [6][8].

E-government is the use of information technologies by government institutions that allow the transformation of relations with citizens, businesses, and fellow government institutions [12].

The level of public participation in the adoption of e-government must be influenced by certain factors. Therefore, the assessment of the factors affecting the acceptance and use of e-government is becoming important. In this study, assessment factors that influence the acceptance and use of e-government in Klaten using the model Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT was empirically validate a model that has four main variables that influence behavior al intention and use behavior, these variables are performance expectancy, effort expectancy, social influence, and facilitating condition.

II. THEORETICAL

A. *Unified Theory of Acceptance and Use of Technology (UTAUT)*

Model Unified Theory of Acceptance and Use of Technology (UTAUT) is a theory that is influential and widely adopted to conduct research on user acceptance (user acceptance) of an information technology. UTAUT was developed by combining the successful features of the eight leading technology acceptance theory becomes a theory[11]. The eight leading theories were united in UTAUT are: *Theory of Reasoned Action* (TRA), *Technology Acceptance Model* (TAM), *Motivational Model* (MM), *Theory of Planned Behavior* (TPB), *Combined TAM and TPB* (C-TAM-TPB), *Model of PC Utilization* (MPCU), *Innovation Diffusion Theory* (IDT), and *Social Cognitive Theory* (SCT).

UTAUT proved to be more successful than the other theories in explaining the variance of up to 70 percent of users. After further testing Venkatesh, et al. found four main constructs that play an important role as a direct determinant of behavioral intention and use behavior that performance expectancy, effort expectancy, social influence, and facilitating condition. And then, there are also four moderators are gender, age, voluntariness, and experience that are positioned to modernization impact of four main constructs of behavioral intention and use behavior. Explanation on UTAUT model can be seen in Figure 1.

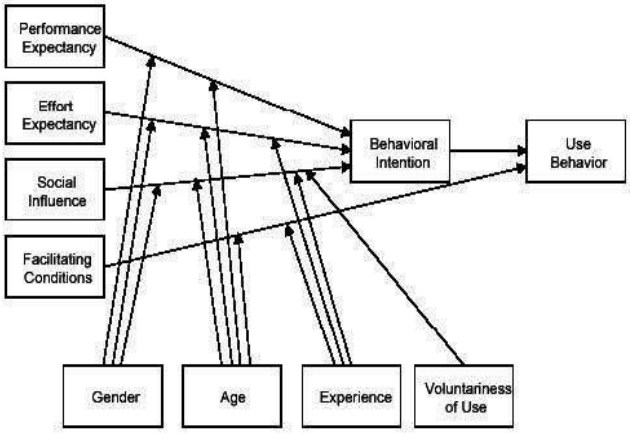

Figure 1. Basic Model of Unified Theory of Acceptance and Use of Technology (UTAUT)

The results of this study revealed that performance expectancy, effort expectancy and social influence determining behavioral intention to use e-government services and facilitating conditions and behavioral intention determine use behavior in the use of e-government services. Subsequent research participants to reach a broader and includes other variables such as culture and trusts to better know the factors that influence users to use e-government services in developing countries [1][2][10].

B. Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) is a multivariate analysis technique that was developed in order to cover the limitations of the previous analytical models which have been widely used in statistical research. The models in question include regression analysis (regression analysis), path analysis (path analysis), and confirmatory factor analysis (confirmatory factor analysis)[7][2].

III. RESEARCH DESIGN

A. Research Question and Hypotheses

The objective of this study is to identify factors, relationship between variables in the model UTAUT and end users's acceptance of *e-government* services in Klaten district. The resarch model of this study is presented below in Figure 2.

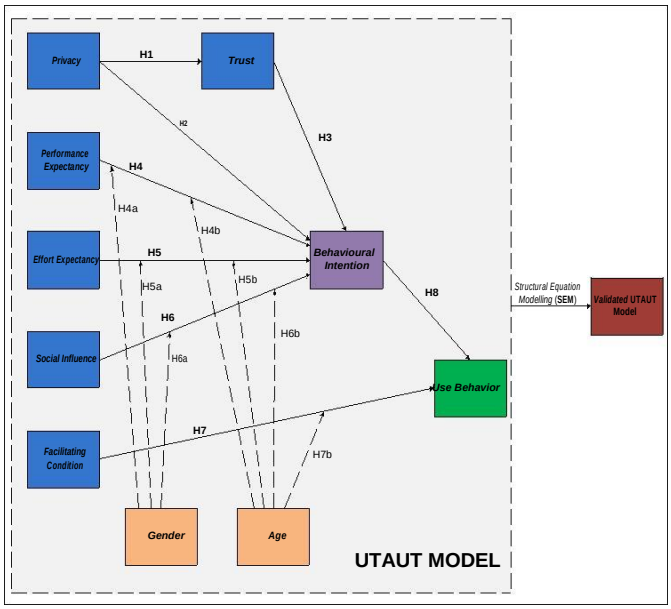

Figure 2. Research model

Based on the figure above, some variables such as *privacy, trust, performance expectancy, effort expectancy, social influence,* and *facilitating condition* will be tested and wheter have effect to *the behavioral intention* and *use behavior,* also the moderated variables of *gender* and *age* will be tested wheter have effect to the relation between each variable. The testing about the relation of those variables is using *Structural Equation Modeling* (SEM) method with SPSS AMOS 22 software.

The reasearcher hypothesized reltionship between variable as follow :

- H1: *Privacy* has a positive significant influence to the *Trust*in using *e-government* service.
- H2: *Privacy* has a positive significant influence to the *Behavioral Intention*in using *e-government* service.

- H3: *Trust* has a positive significant influence to the *Behavioral Intention*in using *e-government* service.
- H4: *Performance expectancy* has a positive significant influence to the *behavioural intentions* in using *e-government*service, the influence is moderated by*gender* and*age*.
- H5: *Effort expectancy* has a positive significant influence to the *behavioural intentions* in using *e-government*service, the influence is moderated by*gender* and*age*.
- H6: *Social influence* has a positive significant influence to the *behavioural intentions* in using *e-government*service, the influence is moderated by*gender* and*age*.
- H7: *Facilitating condition* has a positive significant influence to the *use behaviour* in using *e-government*service, the influence is moderated by*gender* and*age*.
- H8: *Behavioral intention* for using *e-government* servicehas a positive significant influence to the *use behaviour*.

B. Procedures and Data Collection

The amount of the statement on preliminary questionnaires are 32 statements including statements 2 items for respondent profile that will be used to factor moderation. Preliminary Questionnaires were distributed to 20 respondents [7]. Therefore, it was tested by the validity and reliability testing. After that A total of 200 questionare was distributed. Test Reliability used is the Cronbach's Alpha coefficient. By looking at the values of Cronbach's Alpha coefficient obtained it will note the consistency between the indicators used. Standard values of Cronbach's Alpha coefficient used is 0.6, so if the value of the Cronbach's Alpha coefficient more than 0.6, it can be said that the items on the statement of preliminary test can be expressed reliable in measuring research variables.

B. Quality of Instrument

1) Pretest of questionnaire

The questionnaire was designed based on the variables and indicator variables that have been identified previously. The questionnaire is divided into two parts: First is Profile of respondents, contains information about the name, gender, age, education, occupation, and income. And the second one is Respondents' perceptions of factors that affect the acceptance of the application of e-government services using five Likert scale (1: Strongly disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly Agree).

At this stage, the pre-test of the questionnaire has been designed. The goal is to make the same perception between the researcher and respondents to the questionnaire that was designed. In this pretest will be measured reliability of the questionnaire. Reliable questionnaire is a questionnaire that has similarities perceptions between researcher and respondent that will fill out questionnaires. Pretest conducted on 30 respondents to obtain statements that are not understood or poorly understood by respondents and statements that do not have a common perception between researcher and respondent, then the design of the questionnaire will be repaired or replaced and vice versa if the question is clear, the research can be continued at a later stage.

2) Model Structure

Based on the results of the AMOS output, indicating that the model fit less well with a significant p value (p = 0.000) and the chi-square value is 785.519 with 244 degrees of freedom. The chi-square value is very sensitive to sample size, therefore, due to the significant chi-square value, then it is advisable to look at the size of the goodness-of-fit others.

The function from Goodness of Fit test was to determine whether the hypothetical model supported by empirical data theoretical models on the resarch model framework of research.Testing the goodness of fit of models using AMOS 22. The results of the model which been tested can be seen in Figure 3.

The next indicator of goodness of fit is the ratio between the value of chi-square with degrees of freedom (X2 / df). Value ratio of 5 or <5 is a reasonable size. Other researchers such as Byrne (1988) proposed a value of ≤ 2 ratio as a measure of fit. The ratio X2 / df case model is 3,219.

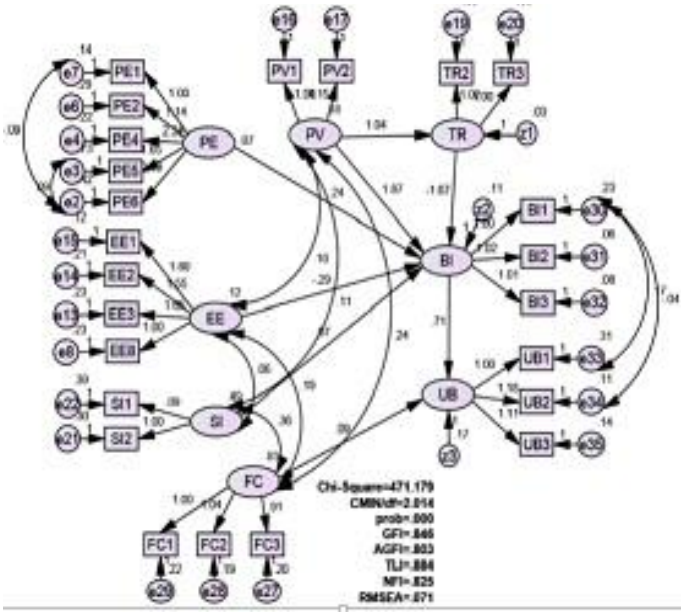

Figure 3. Fit Model Structure

Root Mean Square Error of Approximation (RMSEA) values ≤ 0:05 indicates a close fit, while 12:05 <RMSEA ≤ 0:08 shows a good fit further collaboration related to the cut point by adding that the RMSEA value as between 0:08 to 0:10 shows mediocre (marginal) fit, and RMSEA values> 0:10 indicates poor fit.

Goodness of Fit Index (GFI) GFI values range from 0 to 1 and the value of GFI ≥ 0.90 indicates a good fit. While GFI ≤ 0.80 <0.90 is often referred to as the marginal fit.

Adjusted Goodness of Fit Index (AGFI) As with GFI, AGFI values range from 0 to 1 and the value of AGFI ≥ 0.90 indicates a good fit. Meanwhile ≤ 0.80 AGFI <0.90 is often referred to as the marginal fit.

Tucker-Lewis Index (TLI) TLI values will range from 0 to 1. The value of TLI ≥ 0.90 indicate good fit, whereas the TLI ≤ 0.80 <0.90 is often referred to as the marginal fit.

Normed Fit Index (NFI) NFI values will range from 0 to 1. The value of NFI ≥ 0.90 indicate good fit, whereas NFI ≤ 0.80 <0.90 is often referred to as the marginal fit.

Based on several measures of goodness of fit, such as chi-square, normed Chi Square, RMSEA, GFI, AGFI, CFI, NFI, and TLI, if the model has been designed generate output that does not comply with the suitability of models, it is necessary to change by modifying the model . Modification of the model or the changes can be done by removing the path coefficients that are not meaningful or add the path to the model based on empirical results[8]. From the results of the second modification of the goodness of fit value has been increased so that the structure of the model can be used for further data processing. (see Table 1)

TABLE 1. VALUE OF GOODNESS OF FIT SECOND MODIFICATION

Fit Index	Recommendation of Value	Value	Evaluation
χ 2/ df	≤ 2	2.014	Good Fit
RMSEA	0.05 ≤ RMSEA ≤ 0.08	0.071	Good Fit
NFI	NFI ≥ 0.90 means good-fit 0.80 ≤NFI≤ 0.90 mean marginal fit	0.825	Marginal Fit
TLI	TLI ≥ 0.90 means good-fit 0.80 ≤ TLI ≤ 0.90 mean marginal fit	0.884	Marginal Fit
GFI	GFI ≥ 0.90 means good-fit 0.80 ≤ GFI ≤ 0.90 mean marginal-fit	0.846	Marginal Fit
AGFI	AGFI≥ 0.90 means good-fit 0.80 ≤AGFI≤ 0.90 mean marginal-fit	0.803	Marginal Fit

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IV. RESULT

This study uses Structural Equation Modeling method that can measure the relationship between latent variables (variables Trust, Behavioral Intention, and Behavior Use) with an indicator variable or manifest variables (variables Privacy, Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Condition). Reliability Test of Research

Reliability Test was performed using SPSS program version 17, the number of data is 200 respondents. Reliability was measured using Cronbach's Alpha coefficient. Standard values of Cronbach's Alpha coefficient used is 0.6. The table shows the result of test reability.

For the validity test using the software AMOS 22, by looking up terminal loading on the Standardized Regression Weights. Indicator variables as valid if the value of the loading ≥ 0:50 and ideally should be 0.70 [7][10].

Based on The result of validity test above, there are some items that have a loading value <0.5 it's indicators of TR1, PE3, PE7, EE4, EE5, EE6, EE7, FC4, FC5, FC6, and FC7. So these indicators are invalid and can not be included in the subsequent data processing. So the structure of the model that did not include invalid indicator is shown by Figure 4.

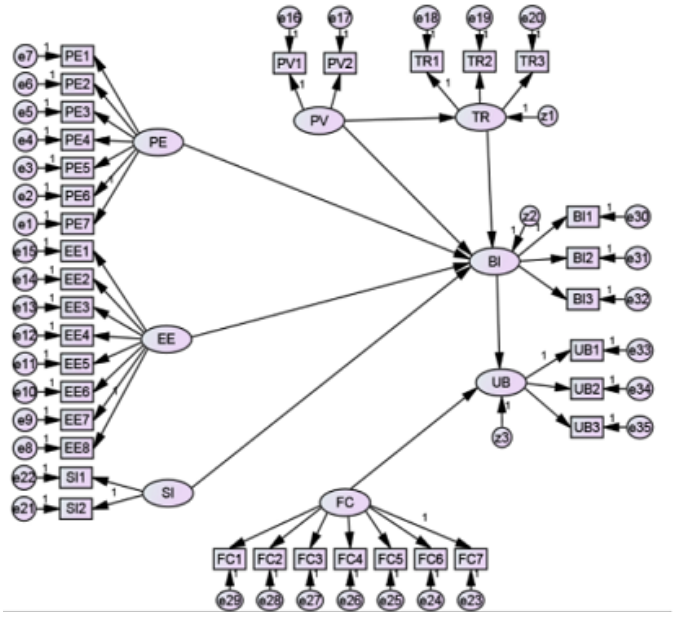

Figure 4. Structure Model of Validity Test

The final model can be used to examine the relationship between variables can be seen in Figure 6. After processing the data in AMOS software 22 can be seen the relationship between latent variables and manifest variables. These relationships can be seen from the value of the Regression Weights CR value and the probability value. Between variables is said to have a relationship when the CR values> 1.96 or p value <0.05.

In this study, the relationship between latent variables and manifest variables in the model UTAUT variables is moderated by gender and age. Gender moderates the relationship between performance expectancy with behavioral intention, effort expectancy with behavioral intention, and social influence with behavioral intention. To determine the relationship of moderating variables of age, age group were divided into 2 groups. First is above average (high) group and second one is below average (low) group [9]. In this study moderating variables were divided into two age groups: age ≤ 30 years group and the age group> 30 years group. Group of ≤ 30 years age consisted of age less than 20 years and aged 20-30 years, while the Group of > 30 years of age comprised 31-40 years and above 40 years.

Age moderates the relationship between performance expectancy with *behavioral intention*, *effort expectancy* with *behavioral intention*, *social influence* with *behavioral intention*, and facilitating *condition* with *use behavior*. To determine the relationship of moderating variables of age, age group were divided into 2 groups above average (high) and below average (low) (Ghozali, 2014) .In this study moderating variables of age were divided into 2 groups: age ≤ age group 30 years and> 30 years. ≤ 30 years age group consisted of age less than 20 years and aged 20-30 years, while the age group> 30 years of age comprised 31-40 years and above 40 years.

V. CONCLUSION

This section disscused the result of the study based on the data analysis. First is Relation between Variables :

1. Privacy has a positive significant effect on Trust in e-government services usage.
2. Privacy has a positive significant effect on Behavioral Intention in e-government services usage.
3. Trust has a positive significant effect on Behavioral Intention in e-government services usage.
4. Performance Expectancy doesn't have positive significant effect on Behavioral Intention in e-government services usage.
5. Effort Expectancy doesn't have positive significant effect on Behavioral Intention in e-government services usage.
6. Social Influence doesn't have positive significant effect on Behavioral Intention in e-government services usage.
7. Facilitating Condition doesn't have positive significant effect on Use Behavior in e-government services usage.
8. Age Factor Moderation affects relation between Performance Expectancy and Behavioral Intentions as well as relation between Variable Facilitating Condition and Use Behavior in e-government services usage.
9. Gender Factor Moderation doesn't affect relation between variables.

Therefore, the second one, E-Government services acceptance factors, base on the research conducted, factors that influence acceptance of e-government services in Klaten district are privacy, trust, facilitating condition, and age factor moderation.

This study applies presenlty amended UTAUT model on users accepatence and use of e Government service in Klaten Districk. Base on the data collected and result of the analysis, it can concluded that factors that influence acceptance of e-government services in Klaten district are privacy, trust, facilitating condition, and age factor moderation, and the other hand a new model of acceptence adoption of e government service propose.

VI. implication of reseach

This study also has practical implication for practioners, policy makers to the way in which people might increase their willingness to interact online. This study also give a new prespective in order to enhance e government service to the comunitty. Understanding adoption factors can extend the their knowledge of citizen, decision making, and lead better strategies.

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