



The Evaluation of PDDIKTI User Acceptance Using The Unified Theory of Acceptance and Use of Technology Approach

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Abstract

The scope of this research is about a database application system called Feeder PDDIKTI, where the application can be used as a complete data storage medium by all universities in Indonesia, both university data, lecturer data, study program data, and student data. However, in its application there are still some weaknesses that are felt by users while using the system. The purpose of study is to determine how well-liked the program is by users and to find out what factors affect user acceptance of the application using the modified Unified Theory of Acceptance and Use of Technology (UTAUT) model, whose data testing is assisted by using IBM SPSS. Thus, of the seven hypotheses put forth by the researcher, five are accepted, including Performance Expectancy, Social Influence, and Perceived Credibility, which are all shown to have a significant positive impact on behavioral intention in user acceptance. Facilitating Conditions and Behavioral Intention also have a significant positive impact on use behavior in user acceptance, while Effort Expectancy and Anxiety are shown to have no significant influence.

Keywords: Database Application, UTAUT, Behavioral Interest, User Acceptance.

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1. Introduction

Utilizing internet technology as part of the activities of government agencies, the Ministry of Research, Technology and Higher Education of the Republic of Indonesia, especially the Data and Information Center (PUSDATIN) has created a database application system called Feeder PDDIKTI, where the application can be used as a complete data storage medium by all universities in Indonesia, both university data, lecturer data, study program data, and student data [1]. Before the implementation of the system, the media used to send and store Higher Education data in Indonesia was FTP (File Transfer Protocol) is a protocol that functions to exchange files on a network that uses TCP connections instead of UDP) [2] [3].

PDDIKTI is officially and compulsorily used by all universities in Indonesia in conducting data reporting activities, both lecturer, student and institutional data [4]. Furthermore, based on the graph above, universities in Indonesia under the Ministry of Research, Technology and Higher Education of the Republic of Indonesia total 4,648 universities, consisting of 947 Academies, 305 Polytechnics, 2,506 Colleges, 226 Institutes, 633 Universities and 31 Community Academies [5] [6]. Based on reviews obtained from application users, this application has several advantages, namely that it can make work (such as uploading data) faster than the previous system; besides that it can also collect academic data from universities throughout Indonesia automatically; and make it easier for anyone who wants to check information about universities, student status, lecturers, and also research that has existed in Indonesia, both for personal and organizational/corporate purposes [7] [8].

In addition to the benefits, it turns out that there are still some obstacles faced, such as the speed of uploading data into the application is sometimes very slow; there is no notification in the system regarding the success of uploading data, namely whether the uploaded data was successful or whether there was an error in uploading the data, and if there is an error in data input, the error message notification that appears is still lacking in detail, so that if an error occurs, sometimes it is still confusing where the error is; and there is no confirmation to the Higher Education regarding data on students who leave [9], move, drop out or are inactive so that in the system [10], student data is often found empty without any information [11]. During the implementation of the application, until now there has been no research that leads to aspects of user acceptance of the use of the application by universities in Indonesia, both regarding whether the application of the system can make performance better or

not, or whether the application can be used easily and without obstacles, etc., so that there has been no improvement or application update from PUSDATIN as the application maker [12].

Meanwhile, PUSDATIN itself wants to know how the development and continuation of the application of the system by its users [13]. User acceptance is basically related to how information technology is applied or implemented. To determine the success rate of an information technology implementation, one of them can be measured by the extent to which users can accept and also understand the technology [14]. User acceptance is an important factor that can affect the successful implementation of a technology. Thus, it is important for PUSDATIN to be able to find out how the response to the use of the application during its implementation [15]. Therefore, an evaluation of the user acceptance system is needed to find out what variables can affect the acceptance of the use of the application and also get recommendations and input for future system d The level of user acceptance of the application of the system by universities in Indonesia can be measured using a theoretical approach that is able to describe the level of user acceptance of a technology, one of which is the UTAUT (Unified Theory of Acceptance and Use of Technology) method developed by Venkatesh [16].

According to Venkatesh and colleagues (2003), the UTAUT approach is a user acceptance research methodology that seeks to explain user intention to utilize a system and subsequent usage behavior [17]. Because it incorporates the beneficial aspects of eight of the most popular technology acceptance theories into one theory, UTAUT is a significant and extensively used theory for performing user acceptance research on information technology [18]. The UTAUT technique uses a number of variables, including independent variables, dependent variables, and moderator variables, to assess user acceptability of a technology [19]. The moderator variables include age, gender, experience, and voluntariness of use [20] [21]. The dependent variables are behavioral intention and use behavior. The independent variables are performance expectation, effort expectation, social influence, and facilitating conditions [22]. The value of the UTAUT technique is that it helps explain how individual differences can impact how people use technology, specifically how perceived benefits, ease of use, and intention to utilize a technology are related.

2. Research Method

In this study, both quantitative and qualitative methods were applied. The population in this study is all campuses that use applications from PDDIKTI. The data in this study are divided into two, namely primary data taken through interviews and questionnaires and secondary data obtained through application reports and literature studies. The study's questionnaire was previously examined for validity and reliability up till it achieved a Cronbach's Alpha score of greater than 0.7. Data processing in this study using SPSS using multiple linear regression. The data in this study are presented using descriptive analysis techniques.

3. Result And Discussion

In the study's initial test for normalcy, it was discovered that the Asymp. Sig. (2-tailed) was 0.157, which is greater than 0.05. One with a normal or nearly normal distribution is a strong candidate for a regression model. Thus, it may be said that the research data originates from a population with a regularly distributed population. Then in the normality test through the P-Plot, it is found that the data points contained in the image always follow and approach the direction of the diagonal line. So, it can be concluded that the regression model fulfills the assumption of normality, or it can be said that the data is normally distributed. Based on the first multicollinearity test, it is found that the VIF (Variance Inflation Factor) value for each research variable (PE, EE, SI, PC and AX) on the dependent variable BI does not exceed 10.0. Likewise, the tolerance value for each research variable is above 0.10. So, it can be concluded that based on the tolerance and VIF values for the multicollinearity test on the dependent variable Behavioral Intention (BI) no symptoms or multicollinearity problems were found. Based on the second multicollinearity test, it was found that the VIF (Variance Inflation Factor) value for each research variable (FC and BI) on the UB dependent variable did not exceed 10.0. Likewise, the tolerance value for each research variable is above 0.10. Thus, it can be concluded that based on the tolerance and VIF values for the multicollinearity test on the dependent variable Use Behavior (UB), there are no symptoms or multicollinearity problems.

Based on the first heteroscedasticity test, the Significance (2-tailed) value is obtained for each variable above (PE, EE, SI, PC and AX) with the absolute value of the residuals greater than 0.05. So, it can be concluded that there is no heteroscedasticity problem in these research variables. The significance value of the FC variable with the absolute value of the residuals has a value less than 0.05, while the significance value of the BI variable with the absolute value of the residuals is greater than the 0.05 number, according to the results of the second heteroscedasticity test. Therefore, it can be said that these research variables do not have a heteroscedasticity issue. The independent variable FC and the dependent variable BI have estimated t values greater than the t table value Y2 (1.98525) based on the regression test. Therefore, it can be concluded that the FC and BI variables each positively affect the dependent variable UB. As a result, it can be said that the variables for Facilitating Conditions (FC) and Behavioral Intention (BI) each have a positive and significant impact on the variable for Use Behavior (UB). The regression equation model for this investigation is as follows, based on the regression test:

$$Y1 = (-1.412) + 0.161X1 + 0.021X2 + 0.340X3 + 0.282X4 + 0.067X5$$

$$Y2 = 2.433 + Y1 + 0.287X6$$

Based on the Y1 equation above, it can be explained as follows:

The constant value of -1.412 implies that the value of Behavioral Intention (BI) drops by -1.412 units if Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Perceived Credibility (PC), and Anxiety (AX) are all equal to zero. The value of Behavioral Intention (BI) will increase by 0.161 units if Performance Expectancy (PE) increases by one unit, according to a regression coefficient with a positive direction of 0.161. The value of Behavioral Intention (BI) will increase by 0.021 units if the value of Effort Expectancy (EE) increases by one unit. This is because EE has a regression coefficient with a positive direction of 0.021. The value of Behavioral Intention (BI) will grow by 0.340 units if Social Influence (SI) increases by one unit, according to a regression coefficient with a positive direction of 0.340. The value of Behavioral Intention (BI) will increase by 0.282 units if Perceived Credibility (PC) increases by one unit, according to a regression coefficient with a positive direction of 0.282. The value of Behavioral Intention (BI) will increase by 0.067 units if the anxiety (AX) value increases by one unit, according to the regression coefficient with a positive direction of 0.067 for anxiety.

Furthermore, based on the equation Y2, it can be explained that the constant value of 2.433 denotes that the value of Use Behavior (UB) rises by 2.433 units if Facilitating Conditions (FC) and Y1 are equal to zero. The value of Use Behavior (UB) will grow by 0.287 units for every unit that Facilitating Conditions (FC) increases by, according to the regression coefficient's positive direction of 0.287. The first simultaneous test's findings reveal that the computed F value is 27.704, which is higher than the Y1 number in the F table (2.31). Therefore, all independent variables (PE, EE, SI, PC, and AX) simultaneously or jointly influence the dependent variable BI and serve as important explanatory factors. The estimated F value is found to be 39.370, which is more than the F table value Y2 (3.09), based on the results of the second simultaneous test. Thus, all the variables investigated (independent variable FC and dependent variable BI) can be said to simultaneously or jointly influence the dependent variable UB and to be important explanatory factors.

Based on the first coefficient of determination test, it is obtained that the R Square (R²) value is close to the value of 1, namely 0.601 or 60.1%. So it can be said that it is strong enough that the independent variables (PE, EE, SI, PC and AX) provide the information needed to predict variations in the dependent variable (BI). Meanwhile, the rest (100% - 60.1% = 39.9%) is influenced by other factors besides PE, EE, SI, PC and AX which are not included in this study. Based on the second coefficient of determination test, it is obtained that the R Square (R²) value is almost half close to the value of 1, namely 0.453 or 45.3%. So it can be said that the variables above (FC and BI) provide enough information needed to predict variations in the dependent variable (UB). Meanwhile, the rest (100% - 45.3% = 54.7%) is influenced by other factors besides FC and BI that are not included in this study.

The hypothesis (H1) is found to be accepted based on the results of the t test. This is due to the significance value (0.022) being less than 0.05 and the B1 value being 0.161. Additionally, it can be noted that the Performance Expectancy (PE) variable's t value is 2.334, which is higher than the t table value Y1 (1.98609). As a result, H0 is rejected and Ha is accepted. In other words, the Behavioral Intention (BI) variable is significantly and positively influenced by the Performance Expectancy (PE) variable. It generally demonstrates how performance expectations, where users (system administrators) believe that using the system would help them enhance their performance at work, increase interest in system utilization. This concurs with earlier study by Jati, Laksito, and Destaningrum, et al., which demonstrates that Performance Expectancy (PE) has a favorable and significant impact on Behavioral Intention (BI).

The hypothesis (H2) is discovered to be false based on the test findings. This is due to the fact that, despite the B2 value being 0.021 and the significance value (0.788) > 0.05, it can be seen that the Effort Expectancy (EE) variable's t value is 0.269, which is lower than the t table value Y1 (1.98609). H0 is approved but Ha is disapproved for this reason. So, the Effort Expectancy (EE) variable alone has no actual or significant impact on the Behavioral Intention (BI) variable. In general, it demonstrates that effort expectations have no bearing on interest in system use, where users (system administrators) do not anticipate that using the system will help facilitate their efforts (time and energy). This is consistent with earlier study by Destaningrum et al. that demonstrates that effort expectation (EE) has no effect on behavioral intention (BI).

Based on the test results, it is found that the hypothesis (H3) is accepted. This is because the significance value (0.00) < 0.05 and the B3 value is 0.340, besides that it can also be seen that the t value for the Social Influence (SI) variable is 4.255 where the t value is greater than the t table value Y1 (1.98609). So that Ha is accepted and H0 is rejected. In other words, the Social Influence (SI) variable individually has a positive and significant influence on the Behavioral Intention (BI) variable. In general view, it proves that social factors affect the interest in system utilization, where users (system admins) believe that using the system will help increase support, increase information and also be more appreciated by their work environment. This is in accordance with research previously conducted by Destaningrum, et al, which proves that Social Influence (SI) has a positive influence on behavioral intention (BI).

Based on the test results, it is found that the hypothesis (H4) is accepted. This is because the significance value (0.011) < 0.05 and the value of B4 is 0.282, besides that it can also be seen that the t value for the Perceived Credibility (PC) variable is 2.611 where the t value is greater than the t table value Y1 (1.98609). So that H_a is accepted and H_0 is rejected. In other words, the Perceived Credibility (PC) variable individually has a positive and significant influence on the Behavioral Intention (BI) variable. In general, it proves that perceived credibility has an effect on interest in system utilization, where users (system admins) believe that using the system can make them feel safe, and the data in it can be trusted and difficult to falsify. This is in accordance with research previously conducted by Arief and Destaningrum, et al, which proves that Perceived Credibility (PC) has a positive and significant influence on Behavioral Intention (BI). Based on the test results, it is found that the hypothesis (H5) is rejected. This is because the significance value (0.185) > 0.05 and although the value of B5 is 0.067, it can be seen that the t value for the Anxiety (AX) variable is 1.335 where the t value is smaller than the t table value Y1 (1.98609). So that H_0 is accepted and H_a is rejected. In other words, the Anxiety (AX) variable individually has no influence on the Behavioral Intention (BI) variable. That is, it proves that anxiety has no effect on interest in system utilization, where the user (system admin) does not believe that using the system can make him feel anxious and afraid of losing and damaging the data that will be reported into the system. This is in accordance with research previously conducted by Arief, which proves that Anxiety (AX) has no significant effect on Behavioral Intention (BI).

Based on the test results, it is found that the hypothesis (H6) is accepted. This is because the significance value (0.004) < 0.05 and the value of B6 is 0.287, besides that it can also be seen that the t value for the Facilitating Conditions (FC) variable is 2.941 where the t value is greater than the t table value Y2 (1.98525). So that H_a is accepted and H_0 is rejected. In other words, the Facilitating Conditions (FC) variable individually has a positive and significant influence on the Use Behavior (UB) variable. In a general view, it proves that facilitating conditions affect system usage behavior, where users (system admins) believe that in using the system they will always be supported by sufficient knowledge and resources to use the system whenever needed. This is in accordance with research previously conducted by Jati & Laksito and Destaningrum, et al, which proves that Facilitating Conditions (FC) has a positive and significant influence on Use Behavior (UB).

Based on the results obtained, the hypothesis (H7) is accepted. This is because the significance value (0.00) < 0.05 and the value of B7 is 0.635, besides that it can also be seen that the t value for the Behavioral Intention (BI) variable is 5.940 where the t value is greater than the t table value Y2 (1.98525). So that H_a is accepted and H_0 is rejected. In other words, the Behavioral Intention (BI) variable individually has a positive and significant effect on the Use Behavior (UB) variable. In general, it proves that interest in system utilization affects the behavior of using the system, where the user (system admin) will use the system on an ongoing basis if he has the interest, intention and belief that using the system can provide benefits and also benefits for him. This is in accordance with research previously conducted by Jati & Laksito (2012), which proves that Behavioral Intention (BI) has a positive and significant influence on Use Behavior (UB).

Social influence (SI) or social factors have 26.4% in influencing behavioral intention in the acceptance of application users, in other words, the social influence variable individually provides an influence of 26.4% for changes in the Behavioral Intention (BI) variable. Perceived credibility (PC) or perceived credibility has 14.8% in influencing behavioral intention in the acceptance of the application users, in other words, the perceived credibility variable individually provides an influence of 14.8% for changes in the Behavioral Intention (BI) variable. Anxiety (AX) or anxiety has 3.1% in influencing the behavioral intention of utilization in the acceptance of the application users, in other words, the anxiety variable individually provides an unreal (significant) influence of 3.1% for changes in the Behavioral Intention (BI) variable. Facilitating conditions (FC) or facilitating conditions have 12.7% in influencing use behavior in the acceptance of application users, in other words, the facilitating conditions variable individually provides an influence of 12.7% for changes in the Use Behavior (UB) variable. Behavioral intention (BI) or utilization interest has 32.6% in influencing use behavior in the acceptance of application users, in other words, the behavioral intention variable individually provides an influence of 32.6% for changes in the Use Behavior (UB) variable.

4. Conclusion

This study intends to assess how well PUSDATIN Kemenristekdikti's applications are received by users. According to the research results, behavioral interest in application use is significantly and positively affected by Performance Expectancy, Social Influence, and Perceived Credibility. But behavioral interest in using this program is unaffected by effort expectations or anxiety. The behavior of using the application as a database system in higher education in Indonesia has a significant beneficial effect by facilitating conditions and behavioral intention, indicating that the availability of and interest in using the system have a big impact on how users behave.

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