

Evaluation of Information Systems on the SIMDAPRO using the Unfield Theory of Acceptance and Use of Technology (UTAUT) Method

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Abstract

The Management Information System for Housing Profile Data and Settlement Areas (SIMDAPRO) is a web-based system managed by Department Housing settlement Areas South Sumatra Province (DISPERKIM). This system is integrated and unified, thus accelerating and improving the process of proposing assistance from the South Sumatra Provincial Government. Additionally, it facilitates related parties in verifying proposals. To analyse the factors influencing to understand how people accept and use the information technology, this study employs the UTAUT model, comprising four primary constructs: the first one is performance expectancy, and the next is the second effort expectancy, and the next one is the third social influence, and the next one is the fourth facilitating conditions. It aims to examine how these constructs influence the behavioral intention of (SIMDAPRO) application users in South Sumatra Province. The research approach is quantitative accompanied by a survey method. The research sample consists of 34 respondents who were chosen through using purposive sampling. Data collection techniques include validation, questionnaires, and observation. with instrument tests conducted for validity and reliability. The findings reveal that all four constructs the first one is performance expectancy, and the next is the second effort expectancy, and the next one is the third social influence, and the next one is the fourth facilitating conditions. significantly and positively impact the behavioral intention of SIMDAPRO application users in South Sumatra Province.

Keywords: SIMDAPRO, UTAUT, information technology

1. INTRODUCTION

Department Housing settlement Areas South Sumatra Province (DISPERKIM) of South Sumatra Province carries the vision of realizing livable, productive, and sustainable urban and rural settlements through the provision of reliable infrastructure in the development of settlement areas. Generally, the main problem in the development of settlement areas is the unmet need for adequate settlement infrastructure, especially for low-income communities, as reflected by

the emergence of various slum areas, which also symbolize backwardness. To address the diverse issues in settlement development in Indonesia, it is necessary to identify the root problems through accurate and up-to-date settlement data and information. The use of technology that can support the provision of settlement data and information becomes a crucial need for current and future planning and implementation.

To address the needs for data and information, the Management Information System for Housing and Settlement Area Profile Data (SIMDAPRO) application has been developed. SIMDAPRO is a web-based system and the official site managed by the Department Housing settlement Areas South Sumatra Province. It is an integrated system that interacts with all activities within the scope Department Housing settlement Areas South Sumatra Province, aiming to provide a database of settlement areas.

SIMDAPRO was built to accommodate the needs of various stakeholders, from district/city governments to the South Sumatra provincial government through the integrated and unified Department Housing settlement Areas South Sumatra Province, making the process of submitting proposals for provincial government assistance faster and more accurate. Additionally, this system can support and facilitate stakeholders, especially in verifying proposals.

The widespread presence of information technology in modern society has made it an essential part of nearly every aspect of human life [1]. Efficient management of information technology plays a pivotal role in modernizing and enhancing public administration, enhancing service delivery, and addressing increasingly development requirements. [2]. Yet, the implementation of information technology doesn't consistently yield success. A critical determinant in its successful implementation lies in the attitudes of the users toward the technology. Users who do not understand the use of the information technology, or conversely, users who are competent but not supported by adequate information technology, can hinder the progress of sustainability in projects. There are still staff who do not know and understand how to utilize SIMDAPRO. This often leads to inefficiencies and poor productivity. To ensure an effective and quality information flow, it must be supported by capable human resources. There are still staff who do not know and understand the use of the application, resulting in many errors in system implementation.

In the ongoing advancement of information technology, multiple methodologies exist to gauge the success of implementation and satisfaction of the user with the system. In this study, the method used is UTAUT which stands for Unified Theory of Acceptance and Use of Technology, is a research method rooted in the fields of psychology and sociology [3]. The UTAUT model stands as one of the newest advancements in technology acceptance models, evolving from earlier frameworks

build that were frequently used to explore user acceptance of information technology. This approach aims to clarify user intentions concerning the adoption of information systems and subsequent patterns of usage. [4].

This study evaluates the results of SIMDAPRO implementation from the user acceptance level. It aims to understand the actual conditions of an information system implementation. Based on the preliminary research, the researchers are keen on conducting a study titled "Evaluation of the Use of the Management Information System for Housing and Settlement Area Profile Data (SIMDAPRO) Using the UTAUT Method at the South Sumatra Province Department Housing and Settlement Area "

2. METHODS

2.1 Research Metodology

This research utilizes a quantitative approach, known for its systematic, planned, and clearly structured nature from the outset to the development of the research design. The steps involved in this study are depicted in image Figure 1.

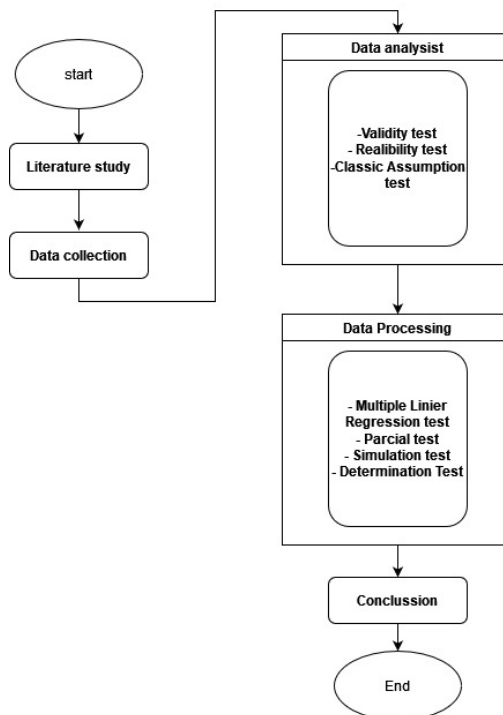


Figure 1. Research Metodology

1) Literature Review

The literature review is a comprehensive and systematic stage. Researchers can better understand how the UTAUT model has been applied and how the factors influence technology adoption in various contexts. In the context of research that uses UTAUT, the literature review functions to review and analyze previous research that has used this model, as well as to identify relevant factors and the contexts in which the model is applied. Furthermore, there were several previous studies that have been used as references for this research, such as [6] [7][8] [9], [10], [11]. These are some examples of studies used to assist the upcoming research.

2) Data Collection

In this research, data collection is a crucial step for testing the model and understanding the factors that influence the acceptance and use of technology. The following are the general steps and methods for collecting data in this research:

- a) Determining Population and Sample: The population in this study includes all SIMDAPRO application users, consisting of 93 users, including users from 17 districts/cities and Perkim users from the South Sumatera province. The sampling method used in selecting the sample for this study included 34 users.
- b) Development of Data Collection Instruments: In this stage, a questionnaire is prepared, which is the most commonly used instrument in UTAUT research. This questionnaire includes questions that measure the main constructs in UTAUT, namely Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Behavioral Intention (BI). A Likert scale is used to measure the respondents' level of agreement or disagreement with each statement
- c) Data Collection: For this research the data that were congregated is conducted through validation, questionnaire and observation. Researchers carried out validation carried out by 3 validators. Questionnaires were distributed at the South Sumatra Province Department Housing and Settlement Area. Closed-ended questionnaires are used, which means the questionnaire provides predetermined answer choices which consist of 20 questions and is adapted to the existing components of the analysis method that were used.

3) Data Analysis

Several tests carried out in the data analysis stage include:

- a) Validity Test: Ensure that the questionnaire measures the intended construct appropriately. Test construct validity, content validity and face validity.
- b) Reliability Test: Test the internal consistency of the questionnaire using a reliability coefficient such as Cronbach's Alpha. Ensure that

the Cronbach's Alpha value for each construct is above 0.60, which indicates good reliability.

- c) Classic Assumption Test. A series of statistical tests are used to check the correctness of the assumptions underlying the use of statistical techniques in this research. These assumptions are applied in the context of regression analysis and analysis of variance (ANOVA).
- 4) Data Processing
During the data processing stage, the data is entered into SPSS software, cleaned, and subjected to descriptive analysis to understand sample characteristics. Subsequently, statistical analysis is conducted using inferential techniques such as multiple linear regression tests, partial tests, simulation tests, and determination tests.
- 5) Conclusion, document findings and draw conclusions from the results carried out in the previous stages.

2.2 Research Hypothesis

A hypothesis is a temporary statement or assumption based on initial observations and existing knowledge, which can be tested through scientific research. This hypothesis aims to explain the relationship between two or more variables and provide guidance for further research. Several factors are utilized in this study [8], namely performance expectancy which were shorten to [PE], effort expectancy which were shorten to [EE], social influence which were shorten to [SI], and facilitating conditions which were shorten to [FC] will be analyzed against Behavioral Intention to Use the System (BIUS) using the SPSS analysis tool.

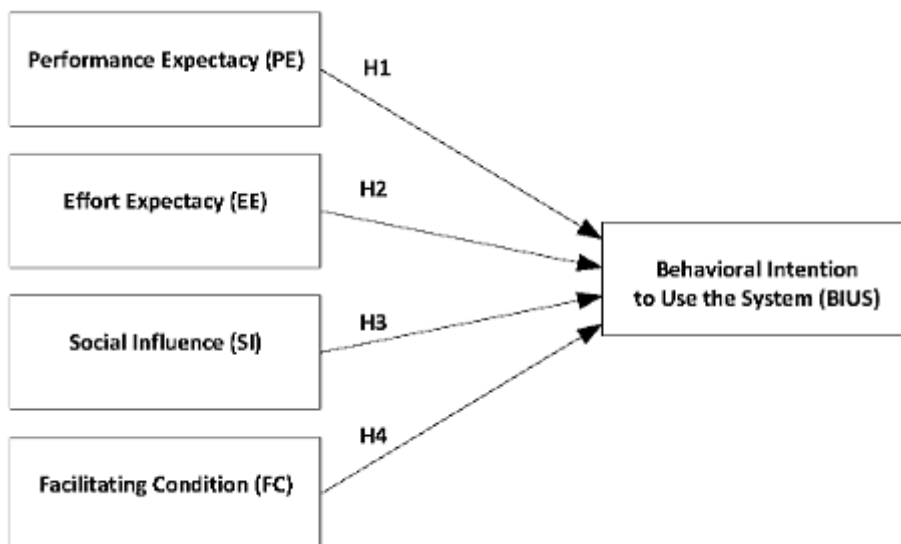


Figure 2. UTAUT Model [3]

Based on the UTAUT mode that were previously used [8] the hypotheses in this research include general hypotheses such as:

- 1) H1: The first one being is performance positively influences the interest in utilizing the Housing and Residential Area Profile Data Management Information System (SIMDAPRO).
- 2) H2: The second one is effort Expectancy positively influences the interest in utilizing the Housing and Residential Area Profile Data Management Information System (SIMDAPRO).
- 3) H3: The third one is social Influence positively influences the interest in utilizing the Housing and Residential Area Profile Data Management Information System (SIMDAPRO).
- 4) H4: The last one is facilitating Conditions positively influences the interest in utilizing the Housing and Residential Area Profile Data Management Information System (SIMDAPRO).

3. RESULT AND DISCUSSION

This data were processed through data quality test including validity and reliability assesment. Subsequently, multiple linear regression analysis was conducted, incorporating partial tests (t-tests), simultaneous tests (F-tests), and determination tests. IBM SPSS Statistics software was utilized to facilitate this analysis.

3.1 Validity Test

The validity test evaluates the questionnaire's effectiveness in measuring its intended constructs. It is deemed valid if the calculated r-value (r) exceeds the critical r-value (r -table) at a significance level (α) of 0.05, with degrees of freedom (df) equal to $n-2$, where n is the sample size used in the research.

Table 1. Validity test Result*

Variables	Indicator	r count	r table	Description
Performcance Expectancy	X1.1	0.605	0, 286	VALID
	X1.2	0.927		VALID
	X1.3	0.927		VALID
	X1.4	0.945		VALID
Effort Expectancy	X2.1	0.631		VALID
	X2.2	0.752		VALID
	X2.3	0.812		VALID
	X2.4	0.696		VALID
Social Influence	X3.1	0.619		VALID
	X3.2	0.683		VALID
	X3.3	0.837		VALID
	X3.4	0.822		VALID
	X4.1	0.911		VALID

Variables	Indicator	r count	r table	Description
Facilitating Condition	X4.2	0.847		VALID
	X4.3	0.900		VALID
	X4.4	0.531		VALID
	Y.1	0.634		VALID
Behavioral Intention	Y.2	0.711		VALID
	Y.3	0.781		VALID
	Y.4	0.804		VALID

*Data processing sources use SPSS

Based of the result from the table 1 all variables meet the validity criteria. This shows that all question items are reliable and suitable for use in research.

3.2 Realibility Test

The reliability test assesses the extent to which questions in a question in a questionnaire are free from errors and to test the reliability of the questionnaire. A questionnaire is deemed reliable if respondents answer consistently produce similar results when measured repeatedly under constant conditions. The reliability testing criteria are met if the Cronch alpha coefficient exceeds 0.6.

Table 2. Realibility Test Result*

Variables	Indicator	r count	r table	Description
Performance expectancy	X1	0.851		RELIABLE
Effort Expectancy	X2	0.662		RELIABLE
Social Influence	X3	0.718		RELIABLE
Facilitating Condion	X4	0.789		RELIABLE
Behavioral Intention	Y	0. 707	0,6	RELIABLE

* Data processing sources use SPSS

Based on the outcome presented in Table 2, all variables exhibited reliability, confirming their suitability for the use in the research.

3.3 Multiple Linear Regression Test

This test analysis is employed in this study to examine whether the independent variables, namely the main variable that were used in this research suchas performance expectancy, effort expectancy, social influence, and facilitating conditions have an influence on the behavioral intention.

Table 3. Multiple Linear Regression Test Results*
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2,962	1,035		2,861	,008
X1	1,144	,109	1,285	10,519	<,001
X2	-,071	,086	-,074	-,834	,411
X3	,002	,052	,002	,033	,974
X4	-,325	,269	-,354	-3,009	,005

Dependent Variable: Behavioral Intention

*Data processing sources use SPSS

Based from the table 3, the outcome has been formulated, leading to the following conclusions::

- Constant Value: The constant is 2.962. the values of the independent variable are all 0, the behavioral intention (Y) is predicted to be 2.962..
- For X1: The coefficient is 1.144. This implies that for every 1% increase in performance expectancy, the behavioral intention is expected to increase by 114.4%. The positive regression coefficient suggests that performance expectancy positively influences behavioral intention.
- For X2: The coefficient is -0.071. This implies that for every 1% increase in effort expectancy, the behavioral intention is expected to decrease by 7.1%. The negative regression coefficient suggests that effort expectancy has a effect to negatively impact on behavioral intention.
- For X3: The coefficient is 0.2. This suggests that for every 1% increase in social influence, the behavioral intention is anticipated to increase by 0.2%. The positive regression coefficient implies that social influence positively contributes to behavioral intention.
- For X4: The coefficient is -0.328. This indicates that for every 1% increase in facilitating conditions, the behavioral intention is expected to decrease by 32.8%. The negative regression coefficient suggests that facilitating conditions has a effect to negatively impact behavioral intention.

3.4 Partial Test

Partial testing seeks to assess the individual impact of each individual independent variable main the main varibale that were used (Xi) on the dependent variable (Y) individually (one-on-one). The outcome of the partial in this study are as such:

Table 4. Partial Test Result (t test)*
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2,962	1,035		2,861	,008
X1	1,144	,109	1,285	10,519	<,001
X2	-,071	,086	-,074	-,834	,411
X3	,002	,052	,002	,033	,974
X4	-,325	,269	-,354	-3,009	,005

Dependent Variable: Behavioral Intention

* Data processing sources use SPSS

Based on the outcome of the partial test, the calculations for an individual variable that were used very likely can be explained as such:

1. For the performance expectancy variable (X1), the t_{count} value of 10.519 was obtained with a significance level of 0.001. It's evident that the t_{count} value exceeds the critical t_{table} value ($10.519 > 2.045$), and the significance level of t is less than 0.05 ($0.001 < 0.05$). Consequently, H_0 was rejected, and H_1 were accepted. This implies that the performance expectancy variable significantly influences the behavioral intention variable.
2. For the effort expectancy variable (X2), the t_{count} value of -0.834 was obtained with a significance level of 0.441. It's observed that the t_{count} value is smaller than the critical t_{table} value ($-0.834 < 2.045$), and the significance level of t is greater than 0.05 ($0.441 > 0.05$). Thus, H_0 was accepted, and H_2 were rejected. This indicates that the effort expectancy variable does not significantly affect the behavioral intention variable.
3. For the social influence variable (X3), the t_{count} value of -0.033 was obtained with a significance level of 0.974. It's evident that the t_{count} is smaller than the critical t value ($-0.033 < 2.045$), and the significance level of t is greater than 0.05 ($0.974 > 0.05$). Consequently, Thus H_0 was accepted, and H_3 were rejected. This implies that the social influence variable does not significantly impact the behavioral intention variable.
4. For the facilitating conditions variable (X4), a value of -3.009 was obtained with a significance level of 0.005. It's evident that the t_{count} value is smaller than the critical t value ($-3.009 < 2.045$), and the significance level of t is smaller than 0.05 ($0.005 < 0.05$). Thus H_0 was accepted, and H_4 were rejected. This indicates that the facilitating conditions variable does not significantly influence the behavioral intention variable.

3.5 Simultan Test

Simultaneous testing seeks to assess the overall influence of the significance level on the independent variable (Xi) regarding the dependent variable (Y).

Table 5. Simultan Test Result (f test) *
ANOVA^a

Model	Sum Of squares	df	Mean Square	F	Sig.
Regresiion	239,516	4	59.897	64.918	<,001
Resindual	26,749	29	922		
Total	266,265	33			

*Data processing sources use SPSS

According to the simultaneous test outcome using SPSS, the fcount outcome value is 26.749, with a significance value of f-table at 0.001. It's observed that the fcount exceeds the ftable ($26.749 > 2.70$), and the significance level of f is lower than 0.05 ($0.001 < 0.05$). This indicates that the variables that were used suchas performance expectancy (X1), effort expectancy (X2), social influence (X3), and facilitating conditions (X4) collectively exert a significant influence on the variable behavioral intention (Y).

3.6 Determination Test

The coefficient of determination (R^2) test is used to measure how well to some extent the 'independent' variables model explains the 'dependent' variable. A small R^2 value suggests that the ability of the independent variables to explain the dependent variable is limited. For this calculation, the researcher utilized IBM SPSS Statistics software. The outcome of the coefficient of determination test in this study is:

Table 6. Determination Test Result*
ANOVA^a

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.948	.900	.886	.96041

a. Predictors: (Constant), X4, X3,X2,X1

b. Dependent Variable: Behavioral Intention

* Data processing sources use SPSS

Based on the results of the determination test on this study, was shown that an R-square value of 0.900 was obtained. This means that the variable (Xi) has an influence of 90% on the behavioral intention variable (Y) while the rest 10% is explained by other variables outside those were not examined in this research.

4. CONCLUSION

The research outcomes suggest that, to some extent: the first variable performance expectancy exhibits a significant and positive impact on behavioral intention, surpassing the t-table value ($10.519 > 2.045$). However, the other variable the effort expectancy does not notably affect behavioral intention, as its t-value falls below the t-table value ($-0.834 < 2.045$). Similarly, social influence and facilitating conditions show no significant influence on behavioral intention, with their respective t-values being smaller than the t-table value ($0.033 < 2.045$ and $-3.009 < 2.045$). Nevertheless, it can be concluded from these findings that all four constructs performance expectancy, effort expectancy, social influence, and facilitating conditions contribute positively and significantly to the behavioral intentions of SIMDAPRO application users in South Sumatra Province. To make the acceptance of the SIMDAPRO application more comprehensive, future research can be conducted by adding the Task-Fit Technology variable to assess how well the SIMDAPRO application supports users' tasks and work, and the Trust variable to evaluate the level of user trust in the security and privacy of the data provided by the application.

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