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User Satisfaction Analysis of Academic Information System Using End-User Computing Satisfaction (EUCS)

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ABSTRACT

Galuh University Academic Information System (SIAKAD) is an information system that supports the academic activities of students, lecturers and employees within Galuh University. As a system that is in direct contact with its users. It is essential to focus on quality of the system utilised by users on a regular basis since the interaction between the system and humans is ideal when both parties give stimuli and reactions (actions & reactions) that support each other, if only If it takes place in one direction, the interaction will experience obstacles or even goal bias. The research was conducted to identify user satisfaction levels who use the system. The elements that determine user satisfaction with academic information systems were examined using the End-User Computing Satisfaction (EUCS) model approach. Data was gathered by observation, interviews, literature research, and questionnaires distributed to Galuh University academic information system users. Based on the existing theoretical basis, statistical analysis was carried out through statistical tests, Specifically, simple linear regression tests were conducted using the SPSS application. The research results showed that the five variables had a significant positive influence on user satisfaction of academic information systems, but the ease of use variable had a significant contribution. the highest was 59.4% for user satisfaction In comparison to other variables like content, accuracy, format, and timeliness, although overall the influence of these variables was still at a moderate level of influence. The research results also recommend updates to the information system to increase user satisfaction.

1. INTRODUCTION

Information technology (IT) is developing rapidly nowadays, this is proven by the use of computers as a means of supporting human activities in various fields, including in the higher education sector [1]. Desmal's assertion indicates that companies must assess user satisfaction as feedback to evaluate the quality of an operational system for the advancement of the information system [2] This was confirmed through a preliminary study conducted by researchers who stated that several research related to user satisfaction, namely as conducted by Edo Arribe [3] in Analysis of the Level of User Satisfaction of the National Signal Application Using the End User Computing Satisfaction (EUCS) Method (Case Study: Regional Revenue Agency of Riau Province (Bapenda), Putri [4] in the Application of the End User Computing Satisfaction (EUCS) Method for Analysis of the Level of User Satisfaction of the PLN Mobile Application in Palembang City, and [5] in the Implementation of End User Computing Satisfaction (EUCS) in Measuring Satisfaction Users of the National Land Agency Website. All three stated that there is an influence of EUCS variables on information system user satisfaction. Different from previous research, this research uses academic applications as the research object, so that it can be seen the relevance of the End-User Computing Satisfaction model to academic subjects.

2. LITERATURE REVIEW

End-user computing satisfaction (EUCS) is a critical measure of the success and effectiveness of information systems from the perspective of the users. It encompasses various dimensions that collectively assess how well a system meets the needs and expectations of its users. The EUCS model, developed by Doll and Torkzadeh, is extensively utilized to assess user satisfaction across various applications and scenarios [6]. This model includes five key dimensions: content, accuracy, format, ease of use, and

timeliness. These dimensions provide a comprehensive framework for understanding user satisfaction and its implications for system use and success.

The first key dimensions of End-User Computing Satisfaction was content, This dimension assesses the relevance of the information supplied by the system in relation to the users' requirements. Studies have shown that content is a significant factor influencing user satisfaction across various applications, such as learning management systems and accounting systems [7]. The second key was accuracy, accuracy refers to the correctness and reliability of the information provided by the system. It is crucial for ensuring that users can trust the system's outputs, which in turn affects their satisfaction. Research indicates that accuracy is a critical component of user satisfaction in systems like the DANA application and computerized accounting systems [8]. The next one is format, this dimension assesses the presentation and layout of information. While format is generally considered important, some studies, such as the one on the MyPertamina application, found that it may not significantly impact user satisfaction in all contexts [9]. The third key was Ease of Use, Ease of use is a major determinant of user satisfaction, as it affects how easily users can interact with the system. Systems that are intuitive and user-friendly tend to receive higher satisfaction ratings. This has been observed in studies on online learning systems and church applications [10]. And the last key was Timeliness. Timeliness measures the speed and promptness with which the system provides information. It is particularly important in applications where timely information is critical, such as financial transactions and learning management systems (Padalia & Natsir, 2022) (Sakinah & Oktadini, 2023).

The EUCS model has been utilized to assess user satisfaction in educational settings, including learning management systems (LMS). Studies have shown that high satisfaction levels in LMS are associated with increased student engagement and learning outcomes [11]. Cross-cultural studies have highlighted the importance of validating the EUCS model in different cultural contexts. For instance, research in South Korea confirmed the model's validity, emphasizing the need for cultural sensitivity in measuring user satisfaction [12]. In organizational settings, The EUCS evaluates the efficacy of information systems in fulfilling business requirements. High levels of user satisfaction are linked to improved system adoption and organizational performance [13].

While the EUCS model provides a robust framework for assessing user satisfaction, It is essential to contemplate additional aspects that may affect contentment, such as organizational culture, user expectations, and technological advancements. Additionally, the dynamic nature of technology and user needs necessitates continuous evaluation and adaptation of satisfaction measures to ensure they remain relevant and effective. As technology evolves, so too must the methods for assessing user satisfaction, ensuring that systems continue to meet the changing demands of users and organizations alike

3. RESEARCH METHODS

Quantitative research methodology is a research approach that employs numerical data to address research inquiries. It relies on the scientific method and on logical reasoning. The goal is to understand, describe, and predict a phenomenon through the collection and analysis of numerical data. The basic procedure for quantitative research is : observe, hypothesize, predict, collect and process data,verify findings, and present findings.

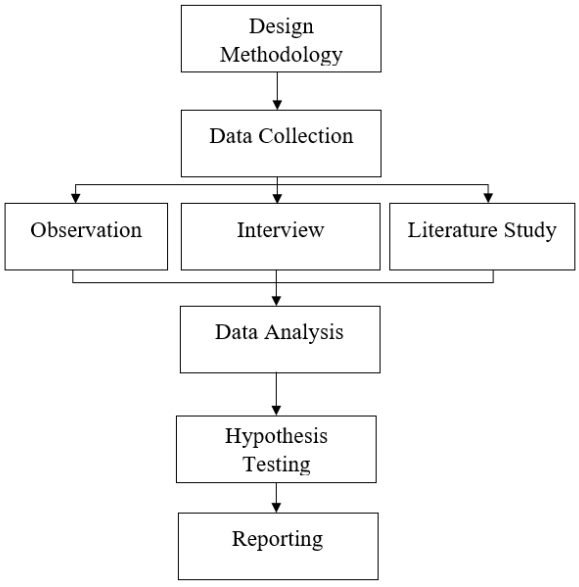

Figure 1. Research methodolog

3.1. Data Collection

Sugiyono asserts that data collection procedures constitute the most critical phase in research, as the primary objective of research is to get data [14]. Employing the appropriate data collection strategy will facilitate researchers in acquiring legitimate data, hence aiding their research endeavors. The collection of research data was conducted via multiple methodologies:

1. Observation is a data gathering method conducted by the systematic observation and documentation of the conditions or behaviors of the research subject [15]. This observation was conducted to acquire a comprehensive understanding of the research subject in its entirety.
2. Interviews are data collection methods employed by researchers to get information through direct conversation, involving questions and answers between the interviewer and the respondent [16]. A questionnaire is a method of data collecting wherein participants are presented with a series of questions or written statements to react to. This questionnaire is suitable for implementation when the respondent pool is extensive and geographically dispersed. Questionnaires may consist of closed or open questions/statements and can be administered personally to respondents or distributed through postal or online methods [14].
3. Literature study is a methodological approach that involves examining existing data by investigating theories created within a certain scientific domain, as well as identifying research methods and techniques employed by prior researchers for data collection and analysis [17].

In accordance with the predefined strategy, the research phases use quantitative methodologies, techniques, and tools, as demonstrated by the research procedures in the next subsection. Referring to the research approach and strategy previously explained, This research was conducted in eight procedural and sequential stages: literature review, model formulation, research design, instrument fabrication, data collection, data analysis, interpretation, and report writing [18].

3.2. Data Analysis

Chazal characterizes data analysis as the systematic organization and categorization of data into patterns, classifications, and fundamental descriptive units, enabling the identification of themes and the formulation of working hypotheses based on the data [19]. In this research process the researcher used data analysis through descriptive analysis and statistical analysis [20]. Descriptive analysis is carried out by collecting data through questionnaires, Statistical analysis is performed using statistical tests such as normality tests, multicollinearity tests, heteroscedasticity tests, and basic linear regression tests, which are then confirmed using hypothesis testing. The variables used consist of independent variables, namely content, accuracy, format, ease of use, and timeliness, and the dependent variable is user satisfaction [6].

The operational variables used include the concept of indicators and scales. The scale used is an ordinal scale, namely measurements where the scale is ordered from the highest level to the lowest scale or vice versa [21].

This research employs a Likert scale to assess the attitudes, views, and perceptions of individuals or groups regarding symptoms or phenomena [21]. In this study, assessment categories were used where each question was given a score of 1-5 as in the table below:

Table 1. Likert Scale

Description	Abbreviation	Score
Strongly Agree	SA	5
Agree	A	4
Neutral	N	3
Disagree	DA	2
Strongly Disagree	SDA	1

The population in this study was 539 SIAKAD UNIGAL users at the Faculty of Agriculture. Concurrently, samples gathered from the population must be genuinely representative [20]. To calculate the sample size from a known population, the Slovin formula is employed to produce the number 85 samples

$$\eta = \frac{N}{1 + Ne^2} \quad (1)$$

Note:
η = size of sample
N = size of population
e = allow for inaccuracies due to allowable sampling error.

The normality test assesses if our data follows a normal distribution. The Kolmogorov-Smirnov test was employed to determine normality in this study. The advantage of the Kolmogorov Smirnov test is that it is simple and does not cause differences in perception between one observer and another observer [22]. The multicollinearity test is used to determine whether in the

regression model a correlation is found between the independent variables. If correlation occurs, it is called a multicollinearity problem [22]. An adequate regression model must exhibit no correlation among the independent variables. If two independent variables are proven to be strongly correlated, the two independent variables are considered to be multicollinear.

Heteroscedasticity is a condition in which the variance of a residual value differs between two observers. The homoscedasticity requirement occurs when the variance and residual values between two observers are equal. A good regression is one that exhibits homoscedasticity rather than heteroscedasticity. A variable is considered homoscedastic if the distribution of observer points above and/or below zero on the Y axis produces a recognisable pattern. If, on the contrary, the distribution of observer points above and/or below zero on the Y axis leads to an unclear pattern, then heteroscedasticity has occurred. Methods for testing whether homos or heteros include the Glesjer test and Spearman's rank correlation test [22].

The Simple Linear Regression Test evaluates whether variations in the dependent variable can be attributed to changes in the independent variable [20]. Simple linear regression depends on the functional or causal relationship between a single independent variable and a single dependent variable. The fundamental equation for simple linear regression is:

$$Y = a + b\,(X) \qquad (2)$$

a : Price Y when X price = 0 (constant)
b : The direction number, also known as the regression coefficient, indicates how many times the dependent variable grows or decreases in response to changes in the independent variable. If (+), the line direction is up; if (-), it is down.
Y : Subjects in the predicted dependent variable.
X : Susceptible to the dependent variable having a specific value.

The steps for the linear regression test are as follows:

1. Determining the correlation coefficient To determine the correlation coefficient, The Pearson correlation formula can be employed, specifically:

$$r = \frac{n\,(\Sigma XY) - (\Sigma X)\,(\Sigma Y)}{[\,n\,(\Sigma X^2) - (\Sigma X)^2\,]^{½}\;[\,n\,(\Sigma Y^2) - (\Sigma y)^2\,]^{½}} \qquad (3)$$

Description :
   a. If r = 0 or close to 0, the link between the two variables is therefore weak.
   b. If r = (-1) then the relationship is very strong and unidirectional.
   c. If r = (+1) Then the relationship is really strong and heading in the same direction.

2. Determine the coefficient of determination
3. Hypothesis test

3.3. Hypothesis Test

Hypothesis testing is crucial to addressing the formulation of the research challenge. Hypothesis testing is conducted to ascertain the substantial impact of the independent variable on the dependent variable [20].

4. DISCUSSION AND RESULT

4.1. Respondent Characteristics

Respondents to the research questionnaire were a sample of Galuh University Academic Information System (SIAKAD) users at the Faculty of Agriculture. There were 85 questionnaires issued with the respondents' characteristics as shown in figure 2 below.

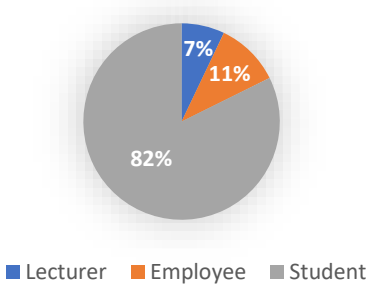

Figure 2. Respondent Characteristics

A validity test was subsequently conducted on the completion of the questionnaire based on the number of respondents indicated above. The results of the validity test of the questionnaire can be seen in table 2. Which states that all questionnaire questions were filled in validly by the respondents.

Table 2. The number of questionnaires filled in is valid

Included		Excluded		Total	
N	Percent	N	Percent	N	Percent
85	100.0%	0	0%	85	100.0%

4.2. Validity Testing Instrument

This study conducted a validity test on 85 respondents utilizing 25 questions through SPSS software. To determine whether the instrument used is legitimate or invalid, it can be seen from the provisions on the results of data processing using SPSS in the corrected item-total correlation column as shown in table 4. Validity testing uses product moment correlation with the following conditions:

1. The instrument is valid if $r_{hitung} > r_{tabel.}$
2. The instrument is invalid if $r_{hitung} > r_{tabel.}$

The following are the findings of assessing the instrument's validity with product moment correlation. From these data it can be seen that all questions were declared valid.

Table 3. Validity Instrument Testing

Questions	*Corrected item-total correlation*	Simbol	Rtabel *product moment*	Desc.
CON1	0,386	>	0,211	Valid
CON2	0,41	>	0,211	Valid
CON3	0,413	>	0,211	Valid
CON4	0,524	>	0,211	Valid
CON5	0,541	>	0,211	Valid
ACC1	0,644	>	0,211	Valid
ACC2	0,676	>	0,211	Valid
ACC3	0,632	>	0,211	Valid
ACC4	0,622	>	0,211	Valid
FOR1	0,655	>	0,211	Valid
FOR2	0,692	>	0,211	Valid
FOR3	0,462	>	0,211	Valid
FOR4	0,632	>	0,211	Valid
EOU1	0,673	>	0,211	Valid
EOU2	0,637	>	0,211	Valid
EOU3	0,58	>	0,211	Valid
EOU4	0,724	>	0,211	Valid
EOU5	0,623	>	0,211	Valid
TIM1	0,816	>	0,211	Valid
TIM2	0,742	>	0,211	Valid
TIM3	0,696	>	0,211	Valid
TIM4	0,693	>	0,211	Valid
EUS1	0,723	>	0,211	Valid
EUS2	0,746	>	0,211	Valid
EUS3	0,743	>	0,211	Valid

After the data is declared valid, the next step is reliability testing. According to the results of data processing in SPSS, reliability testing can be inferred as follows:

Tabel 4. Instrument Reliability Testing Results

Number of Questions	*Cornbach's Alpha*	Symbol	Rtable *product moment*	Desc.
25	0,946	>	0,211	Reliable

4.2.1. *Normality Test*

The normality test is conducted to determine if the data under analysis follows a normal distribution or not. If the data follows a normal distribution, the subsequent analysis employed is the parametric statistical approach. If the data is not normally distributed, the subsequent analytical tool employed is a non-parametric statistical approach. The interpretation of the normality

test data results indicates that a value beyond 0.05 suggests the data is normally distributed, hence permitting the use of a parametric statistical method for analysis. If the results show a number of 0.05 or smaller than 0.05 then it can be said that the data is not normally distributed, meaning that the analysis tool used is the non-parametric statistics. The results of the normality test can be seen in table 6 below:

Table 5. Normality test

		TOT
N		85
Normal Parameters[a,,b]	Mean	93.98
	Std. Deviation	12.584
Most Extreme Differences	Absolute	.101
	Positive	.074
	Negative	-.101
Kolmogorov-Smirnov Z		.930
Asymp. Sig. (2-tailed)		.353

4.2.2. Descriptive Analysis

Descriptive analysis seeks to analyses data by describing or illustrating the obtained facts without seeking to draw broad conclusions or generalizations. Research on 85 respondents who filled out questionnaires on the content variable is described as follows:

Table 6. Descriptive Analysis of Variable X1

	N	Range	Minimum	Maximum	Mean		Std. Deviation
CON1	85	3	2	5	.82	067	.621
CON2	85	4	1	5	.68	086	.790
CON3	85	3	2	5	.99	068	.627
CON4	85	4	1	5	.67	086	.793
CON5	85	3	2	5	.78	079	.730
Valid N (listwise)	85						

Table 7. Descriptive Analysis of Variable X2

	N	Minimum	Maximum	Mean	Std. Deviation
ACC1	85	1	5	3.78	.792
ACC2	85	2	5	3.93	.669
ACC3	85	2	5	3.87	.651
ACC4	85	2	5	3.80	.613
Valid N (listwise)	85				

Tabel 8. Descriptive Analysis of Variable X3

	N	Minimum	Maximum	Mean	Std. Deviation
FOR1	85	1	5	3.55	.893
FOR2	85	2	5	3.81	.764
FOR3	85	3	5	4.00	.577
FOR4	85	2	5	3.88	.730
Valid N listwise)	85				

Tabel 9. Descriptive Analysis of Variable X4

	N	Minimum	Maximum	Mean	Std. Deviation
EOU1	85	2	5	3.82	.693
EOU2	85	2	5	4.00	.598
EOU3	85	3	5	4.01	.567
EOU4	85	1	5	3.74	.915
EOU5	85	2	5	3.71	.799
Valid N (listwise)	85				

Tabel 10. Descriptive Analysis of Variable X5

	N	Minimum	Maximum	Mean	Std. Deviation
TIM1	85	1	5	3.55	1.029
TIM2	85	1	5	3.33	1.016
TIM3	85	1	5	3.53	.839
TIM4	85	1	5	3.56	.932
Valid N (listwise)	85				

Tabel 11. Descriptive Analysis of Variable Y1

	N	Minimum	Maximum	Mean	Std. Deviation
EUS1	85	1	5	3.55	.794
EUS2	85	2	5	3.75	.706
EUS3	85	2	5	3.85	.608
Valid N (listwise)	85				

4.2.3. Statistical Analysis

a. Multicollinearity Test

The outcomes of the multicollinearity assessment using SPSS are as follows:

Table 12. Multicollinearity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.461	1.073		1.362	.177		
	TOT_CON	.009	.063	.011	.136	.892	.599	1.671
	TOT_ACC	.158	.092	.183	1.716	.090	.374	2.676
	TOT_FOR	.086	.087	.105	.989	.326	.377	2.650
	TOT_EOU	.115	.087	.164	1.316	.192	.273	3.664
	TOT_TIM	.255	.051	.470	5.028	.000	.486	2.056

a. Dependent Variable: TOT_EUS

Based on the results of data processing in table IV.45, the tolerance and VIF values can be seen as follows:

1. The tolerance and VIF values for variable X1 are 0.599>0.10 and 1.671<10.00.
2. The tolerance and VIF values for variable X2 are 0.374>0.10 and 2.676<10.00.
3. The tolerance and VIF values for variable X3 are 0.377>0.10 and 2.650<10.00.
4. The tolerance and VIF values for variable X4 are 0.273>0.10 and 3.664<10.00.
5. The tolerance and VIF values for variable X5 are 0.486>0.10 and 2.056<10.00.

Based on the results, it is possible to conclude that none of the data evaluated exhibits multicollinearity.

b. Heteroscedasticity Test

The following are the results of the heteroscedasticity test with SPSS:

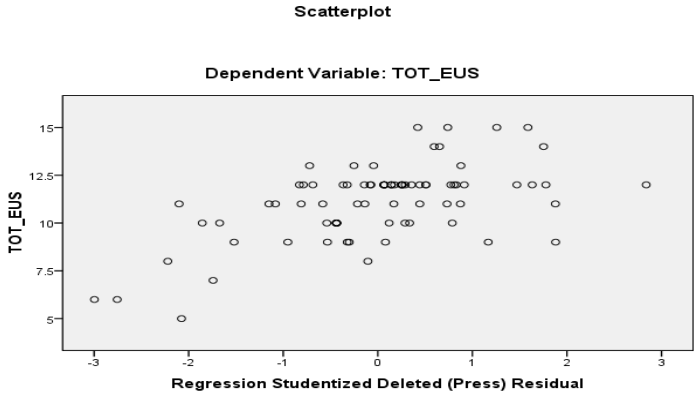

Figure 3. Heteroscedasticity Test

c. Simple Linear Regression

The influence of content on user satisfaction

Table 13. F Test Value

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	62.891	1	62.891	21.559	.000[a]
	Residual	242.121	83	2.917		
	Total	305.012	84			

a. Predictors: (Constant), TOT_CON

b. Dependent Variable: TOT_EUS

Table 13 displays the output of the F test. Decision making in the F test is based on the Fcount value and the Ftable value. The calculated F value in table 13, the F test value is 21.559 with an Ftable value of 3.95. So it can be concluded that variable X1 simultaneously influences variable Y1.

Table 14. Simple Linear Regression Equation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.740	1.393		3.402	.001		
	TOT_CON	.339	.073	.454	4.643	.000	1.000	1.000

a. Dependent Variable: TOT_EUS

Table 14 presents the regression equation model featuring constant and variable coefficients in the unstandardized coefficient column. The constant figure for the unstandardized coefficient is 4.740. The coefficient figure for the variable X1 is 0.339. Because the variable coefficient value is positive (+), it can be said that content has a positive effect on User Satisfaction with the regression equation:

$$Y = 4{,}740 + 0{,}339\ X$$

Table 15. The effect of accuracy on user satisfaction Output SPSS variable X2 Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TOT_ACC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TOT_EUS

The output of table 15 shows a simple linear regression test carried out on variable X2, namely accuracy on variable Y1, namely user satisfaction.

Table 16. F Test Value

ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	126.429	1	126.429	58.760	.000[a]
Residual	178.583	83	2.152		
Total	305.012	84			

a. Predictors: (Constant), TOT_ACC

b. Dependent Variable: TOT_EUS

Calculated F value in table N.50, the F test value is 58.760 with an F table value of 3.95. So it can be concluded that variable X2 simultaneously influences variable Y1.

Tabel 17. Simple Linear Regression Equation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.593	1.128		2.299	.024		
	TOT_ACC	.557	.073	.644	7.666	.000	1.000	1.000

a. Dependent Variable: TOT_EUS

Table 17 displays the regression equation model obtained with constant coefficients and variable coefficients in the unstandardized coefficient column. The constant figure for the unstandardized coefficient is 2.593. The coefficient figure for the variable X2 is 0.557. Because the variable coefficient value is positive (+), it can be said that accuracy has a positive effect on User Satisfaction with the regression equation:

$$Y = 2{,}593 + 0{,}557\ X$$

Table 18. The effect of format on user satisfaction Output SPSS variable X3

Model	Variables Entered	Variables Removed	Method
1	TOT_FOR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TOT_EUS

The output of table 18 shows a simple linear regression test carried out on variable X3, namely the format, on variable Y1, namely user satisfaction.

Table 19. F Test Value

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	132.128	1	132.128	63.433	.000[a]
	Residual	172.884	83	2.083		
	Total	305.012	84			

a. Predictors: (Constant), TOT_FOR

Table 19 displays the output of the F test. The calculated F value in table IV.53, the F test value is 63.433 with an Ftable value of 3.95. So, it can be concluded that variable X3 simultaneously influences variable Y1.

Table 20. Simple Linear Regression Equation

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.889	1.049		2.754	.007		
	TOT_FOR	.542	.068	.658	7.965	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Table 20 presents the regression equation model featuring constant and variable coefficients in the unstandardized coefficient column. The constant figure for the unstandardized coefficient is 2.889. The coefficient figure for variable X3 is 0.542. Because the variable coefficient value is positive (+), it can be said that the format has a positive effect on User Satisfaction with the regression equation:

$$Y = 2{,}889 + 0{,}542\ X$$

Table 21. The effect of ease of use on user satisfaction Output SPSS variable X4

Model	Variables Entered	Variables Removed	Method
1	TOT_EOU[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TOT_EUS

The output of table 21 uses a simple linear regression test carried out on variable X4, namely ease of use, on variable Y1, namely user satisfaction.

Table 23. F Test Value

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	154.526	1	154.526	85.229	.000[a]
	Residual	150.486	83	1.813		
	Total	305.012	84			
a. Predictors: (Constant), TOT_EOU						
b. Dependent Variable: TOT_EUS						

Calculated F value in table 22, the F test value is 85.229 with an Ftable value of 3.95. So it can be concluded that variable X4 simultaneously influences variable Y1.

Table 23. Simple Linear Regression Equation

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.551	1.050		1.477	.143		
	TOT_EOU	.498	.054	.712	9.232	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Table 23 presents the regression equation model derived from constant and variable coefficients in the unstandardized coefficient column. The constant figure for the unstandardized coefficient is 1.551. The coefficient figure for the variable X4 is 0.498. Because the variable coefficient value is positive (+), it can be said that ease of use has a positive effect on User Satisfaction with the regression equation:

$$Y = 1{,}551 + 0{,}498\ X$$

Table 24. The influence of timeliness on user satisfaction SPSS output variable X5

Variables Entered/Removed[b]			
Model	Variables Entered	Variables Removed	Method
1	TOT_TIM[a]	.	Enter
a. All requested variables entered.			
b. Dependent Variable: TOT_EUS			

The output of table 24 shows a simple linear regression test carried out on variable X5, namely timeliness, on variable Y1, namely user satisfaction.

Table 25. F test value

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175.284	1	175.284	112.147	.000[a]
	Residual	129.728	83	1.563		
	Total	305.012	84			
a. Predictors: (Constant), TOT_TIM						
b. Dependent Variable: TOT_EUS						

Calculated F value in table 25, the F test value is 112.147 with an F table value of 3.95. So it can be concluded that variable X5 simultaneously influences variable Y1.

Table 26. Simple Linear Regression Equation

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.393	.561		9.620	.000		
	TOT_TIM	.412	.039	.758	10.590	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Table 26 presents the regression equation model derived from constant and variable coefficients in the unstandardized coefficient column. The constant figure for the unstandardized coefficient is 5.393. The coefficient figure for the variable X5 is 0.412. Because the variable coefficient value is positive (+), it can be said that timeliness has a positive effect on User Satisfaction with the regression equation:

$$Y = 5{,}393 + 0{,}412\ X$$

d. Hypothesis Test

Hypothesis testing seeks to determine if the independent variable (X) significantly influences the dependent variable (Y). Hypothesis testing is conducted via the t-test. Decision-making in the t-test is founded on the computed t value and the corresponding t table values:

- Hypothesis 1

$H_{0:}$ *content does not have a significant effect on user satisfaction.*

$H_{a:}$ *content has a significant effect on user satisfaction.*

Tabel 27. Hypothesis Testing

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.740	1.393		3.402	.001		
	TOT_CON	.339	.073	.454	4.643	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

The aforementioned output coefficient indicates a regression coefficient value of 0.339, which is positive; thus, it can be concluded that content (X1) positively influences user pleasure (Y1). To determine whether the effect is significant, it can be seen from the t value in table 28 of 4.643. Based on the basis for decision making that has been determined, the t table value with a confidence level of 0.05 is 1.99 so that it can be concluded that 4.643 > 1.99 which means:

H_0 rejected dan H_a accepted.

Table 28. Correlation Coefficient and Determination Coefficient

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.454[a]	.206	.197	1.708
a. Predictors: (Constant), TOT_CON				
b. Dependent Variable: TOT_EUS				

The output of table 29 displays the r value which is a symbol of the correlation coefficient. Table 29 shows an r value of 0.454. This value is interpreted to mean that the relationship between the two variables is in the weak category. This value also shows that the relationship between the two variables is positive (+), which means that an increase in X will coincide with an increase in Y and vice versa. Table 29 also displays the r square value which is a symbol of the coefficient of determination. The r square value in the output table 29 is 0.206. This value is interpreted to mean that the independent variable X1 has an influence with a contribution of 20.6% to the dependent variable Y1, and the other 79.4% is influenced by other factors.

- Hypothesis 2

H_0: *accuracy does not have a significant effect on user satisfaction.*
H_a: *accuracy has a significant effect on user satisfaction.*

Table 29. Hypothesis Testing 2

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.593	1.128		2.299	.024		
	TOT_ACC	.557	.073	.644	7.666	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Based on the output coefficient above, it is known that the regression coefficient value is 0.557 and is positive, so it can be said that accuracy (X2) has a positive effect on user satisfaction (Y1). To determine whether the effect is significant, it can be seen from the t value in table 30 of 7.666. Based on the basis for decision making that has been determined, the t table value with a confidence level of 0.05 is 0.197 so that it can be concluded that 7.666 > 0.197 which means:

H_0 rejected and H_a accepted.

Table 30. Correlation Coefficient and Determination Coefficient

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644[a]	.415	.407	1.467
a. Predictors: (Constant), TOT_ACC				
b. Dependent Variable: TOT_EUS				

The output of table 31 displays the r value which is a symbol of the correlation coefficient. Table 31 shows an r value of 0.644. This value is interpreted to mean that the relationship between the two variables is in the weak category. This value also shows that the relationship between the two variables is positive (+), which means that an increase in X will coincide with an increase in Y and vice versa. Table 31 also displays the r square value which is a symbol of the coefficient of determination. The r square value in the output of table 31 is 0.415. This value is interpreted to mean that the independent variable X2 has an influence with a contribution of 41.5% to the dependent variable Y1, and the other 58.5% is influenced by other factors.

- Hypothesis 3

H_0: *format does not have a significant effect on user satisfaction.*
H_a: *format has a significant effect on user satisfaction.*

Table 31. Hypothesis Testing 3

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.889	1.049		2.754	.007		
	TOT_FOR	.542	.068	.658	7.965	.000	1.000	1.000
Dependent Variable: TOT_EUS								

Based on the output coefficient above, it is known that the regression coefficient value is 0.542 and is positive, so it can be said that format (X3) has a positive effect on user satisfaction (Y1). To determine whether the effect is significant, it can be seen from the t value in table 32 of 7.965. Based on the basis for decision making that has been determined, the t table value with a confidence level of 0.05 is 0.197 so that it can be concluded that 7.965 > 0.197 which means:

H_0 rejected and H_a accepted.

Tabel 32. Correlation Coefficient and Determination Coefficient

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658[a]	.433	.426	1.443
a. Predictors: (Constant), TOT_FOR				
b. Dependent Variable: TOT_EUS				

Table 32 presents the r value, which represents the correlation coefficient. Table 32 shows an r value of 0.658. This value is interpreted to mean that the relationship between the two variables is in the weak category. This value also shows that the relationship between the two variables is positive (+), which means that an increase in X will coincide with an increase in Y and vice versa. Table 24 also displays the r square value which is a symbol of the coefficient of determination. The r square value in the output table 24 is 0.433. This value is interpreted to mean that the independent variable X3 has an influence with a contribution of 43.3% to the dependent variable Y1, and the other 56.7% is influenced by other factors.

- Hypothesis 4

H_0: *ease of use does not have a significant effect on user satisfaction.*
H_a: *ease of use has a significant effect on user satisfaction.*

Table 32. Hypothesis Testing 4

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.551	1.050		1.477	.143		
	TOT_EOU	.498	.054	.712	9.232	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Based on the output coefficient above, it is known that the regression coefficient value is 0.498 and is positive, so it can be said that ease of use (X4) has a positive effect on user satisfaction (Y1). To determine whether the effect is significant, it can be seen from the t value in table 25 of 9.232. Based on the basis for decision making that has been determined, the t table value with a confidence level of 0.05 is 0.197 so that it can be concluded that 9.232 > 0.197 which means:

H_0 rejected and H_a accepted.

Table 34. Correlation Coefficient and Determination Coefficient

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712[a]	.507	.501	1.347
a. Predictors: (Constant), TOT_EOU				
b. Dependent Variable: TOT_EUS				

The output of table 33 displays the r value which is a symbol of the correlation coefficient. Table 33 shows an r value of 0.712. This value is interpreted to mean that the relationship between the two variables is in the weak category. This value also shows that the relationship between the two variables is positive (+), which means that an increase in X will coincide with an increase in Y and vice versa. Table 33 also displays the r square value which is a symbol of the coefficient of determination. The r square value in the output table 26 is 0.597. This value is interpreted to mean that the independent variable X4 has an influence with a contribution of 59.7% to the dependent variable Y1, and the other 40.3% is influenced by other factors.

- Hypothesis 5

H_0: *timeliness does not have a significant effect on user satisfaction.*
H_a: *timeliness has a significant effect on user satisfaction.*

Tabel 35. Hypothesis Testing 5

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.393	.561		9.620	.000		
	TOT_TIM	.412	.039	.758	10.590	.000	1.000	1.000
a. Dependent Variable: TOT_EUS								

Based on the output coefficient above, it is known that the regression coefficient value is 0.412 and is positive, so it can be said that timeliness (X3) has a positive effect on user satisfaction (Y1). To determine whether the effect is significant, it can be seen from the t value in table 35 of 10.590. Based on the basis for decision making that has been determined, the t table value with a confidence level of 0.05 is 0.197 so that it can be concluded that 10.590 > 0.197 which means:

H_0 rejected and H_a Accepted.

Table 36. Correlation Coefficient and Determination Coefficient

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758[a]	.575	.570	1.250
a. Predictors: (Constant), TOT_TIM				
b. Dependent Variable: TOT_EUS				

Table 35 presents the R value, which denotes the correlation coefficient. Table 35 indicates a R value of 0.758. This result indicates that the association between the two variables is classified as weak. This value also shows that the relationship between the two variables is positive (+), which means that an increase in X will coincide with an increase in Y and vice versa. Table 35 also displays the r square value which is a symbol of the coefficient of determination. The r square value in the output table 28 is 0.575. This value is interpreted to mean that the independent variable X3 has an influence with a contribution of 57.5% to the dependent variable Y1, and the other 42.5% is influenced by other factors.

5. CONCULUSSION

After data analysis, the conclusion that can be drawn is that the five variables have a significant positive influence on user satisfaction of the Unigal academic information system (SIAKAD), although variable X4 (ease of use) has the highest contribution at 59.7% with a medium level of influence. on user satisfaction compared to variable X1 of 20.6% with a low level of influence, X2 has a significant positive influence of 41.5% with a medium level of influence on user satisfaction, of 43.3% with a moderate

level of influence on user satisfaction and X5 has a significant positive influence of 57.5% with a medium level of influence on user satisfaction. Overall, the influence of these variables is still at the level moderate influence.

Recommendations for improving information systems and research that can be carried out further can be carried out on research models that can be developed for information systems that have more users and wider coverage using analysis from more respondents. Application development is focused on ease of use which has a positive influence with greater value, but in terms of content, accuracy, format and timeliness, it also requires further attention, because all four factors have a significant positive influence on information system user satisfaction. Research can be developed using other methods besides End-User Computing Satisfaction (EUCS). Further research can be developed not only on the User Computing Satisfaction (EUCS) aspect, but also on user experience aspects.

REFRENCES

[1] J. Miranda *et al.*, "The core components of education 4.0 in higher education: Three case studies in engineering education," *Computers and Electrical Engineering*, vol. 93, 2021, doi: 10.1016/j.compeleceng.2021.107278.

[2] A. J. Desmal, S. Hamid, M. K. Othman, and A. Zolait, "A user satisfaction model for mobile government services: a literature review," *PeerJ Comput Sci*, vol. 8, 2022, doi: 10.7717/PEERJ-CS.1074.

[3] EdoArribe, Aryanto, and S. Aulia, "Analisis Tingkat Kepuasan Pengguna Aplikasi Signal Nasional Menggunakan Metode End User Computing Satisfaction (EUCS) (Studi Kasus : Badan Pendapatan Daerah Provinsi Riau (BAPENDA)," *Journal of Software Engineering and Information Systems (SEIS)*, vol. 2, no. 1, 2022.

[4] D. Putri and F. P. Sihotang, "Penerapan Metode End User Computing Satisfaction (Eucs) Untuk Analisis Tingkat Kepuasan Pengguna Aplikasi PLN Mobile Di Kota Palembang," *MDP Student Conference*, 2022.

[5] D. C. Muria Pratama and K. D. Hartomo, "Implementasi End User Computing Satisfaction (EUCS) Dalam Pengukuran Kepuasan Pengguna Situs Web Badan Pertanahan Nasional," *JATISI (Jurnal Teknik Informatika dan Sistem Informasi)*, vol. 8, no. 4, 2022, doi: 10.35957/jatisi.v8i4.1263.

[6] W. J. Doll and G. Torkzadeh, "The measurement of end-user computing satisfaction," *MIS Q*, vol. 12, no. 2, 1988, doi: 10.2307/248851.

[7] R. A. Azdy and H. K. Putra, "Analysis of the Level of Satisfaction of Darwinbox Application Users at PT Nippon Indosari Corpindo Tbk Using the End User Computing Satisfaction (EUCS) Method," *International Journal of Multidisciplinary Sciences and Arts*, vol. 2, no. 1, 2023, doi: 10.47709/ijmdsa.v2i1.2371.

[8] S. Sakinah and N. R. Oktadini, "Analisis Kepuasan Pengguna Terhadap Aplikasi Dana Menggunakan Metode End User Computing Satisfaction (EUCS)," *JTKSI (Jurnal Teknologi Komputer dan Sistem Informasi)*, vol. 6, no. 2, 2023, doi: 10.56327/jtksi.v6i2.1487.

[9] A. Budi Pratomo, M. A. Kurnia Harahap, T. Oswari, P. M. Akhirianto, and A. Widarman, "The Application of End User Computing Satisfaction (EUCS) to Analyze the Satisfaction of MyPertamina User," *Jurnal Sistim Informasi dan Teknologi*, 2023, doi: 10.37034/jsisfotek.v5i1.205.

[10] R. Khairani, T. K. Ahsyar, and E. Saputra, "Analisis Tingkat Kepuasan Pengguna Sistem Pembelajaran Daring Menggunakan Metode End User Computing Satisfaction," *Building of Informatics, Technology and Science (BITS)*, vol. 4, no. 2, 2022, doi: 10.47065/bits.v4i2.1865.

[11] A. Padalia and T. Natsir, "End-User Computing Satisfaction (EUCS) Model: Implementation of Learning Management System (LMS) on Students Satisfaction at Universities," *International Journal of Environment, Engineering and Education*, vol. 4, no. 3, 2022, doi: 10.55151/ijeedu.v4i3.72.

[12] K.-S. Lim, J.-S. Lim, and J. H. Heinrichs, "Validating an End-User Computing Satisfaction Instrument: A Confirmatory Factor Analysis Approach Using International Data," *Journal of International Technology and Information Management*, vol. 17, no. 2, 2008, doi: 10.58729/1941-6679.1115.

[13] A. Ilias and N. Suki, "The End-user Computing Satisfaction (EUCS) On Computerized Accounting System (CAS): How They Perceived?," *Journal of Internet …*, vol. 13, no. 1, 2008.

[14] Sugiyono, *Metode Penelitan Pendidikan*. Bandung: CV. Alfabeta, 2009.

[15] M. Baker, Lynda, "Observation: A complex research method," *Libr Trends*, vol. 55, no. 1, 2016.

[16] O. A. Adeoye-Olatunde and N. L. Olenik, "Research and scholarly methods: Semi-structured interviews," *JACCP Journal of the American College of Clinical Pharmacy*, vol. 4, no. 10, 2021, doi: 10.1002/jac5.1441.

[17] W. Darmalaksana, "Metode Penelitian Kualitatif Studi Pustaka dan Studi Lapangan," *Pre-print Digital Library UIN Sunan Gunung Djati Bandung*, 2020.

[18] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and H. T. Sukmana, "Measurement of information system project success based on perceptions of the internal stakeholders," *International Journal of Electrical and Computer Engineering*, vo. 5, no. 2, 2015, doi: 10.11591/ijece.v5i2.pp271-279.

[19] F. Chazal and B. Michel, "An Introduction to Topological Data Analysis: Fundamental and Practical Aspects for Data Scientists," 2021. doi: 10.3389/frai.2021.667963.

[20] Sugiyono, *Metode Penelitian Kuantitatif, kualitatif dan R & D*. Bandung: Alfabeta, 2014.

[21] W. Budiaji *et al.*, "Skala Pengukuran Dan Jumlah Respon Skala Likert (The Measurement Scale and The Number of Responses in Likert Scale)," *Jurnal Ilmu Pertanian dan Perikanan Desember*, vol. 2, no. 2, 2013.

[22] P. Mishra, C. M. Pandey, U. Singh, A. Gupta, C. Sahu, and A. Keshri, "Descriptive statistics and normality tests for statistical data," *Ann Card Anaesth*, vol. 22, no. 1, 2019, doi: 10.4103/aca.ACA_157_18.