

Analysis of the Effect of Using the SIPLah Application on User Satisfaction in Procuring Elementary School Books in Pangkalpinang City

Hamidah^{[1]*}, Okkita Rizan^[2]

Department of Information System^[1,2], Faculty of Information Technology
Institut Sains dan Bisnis Atma Luhur
Pangkalpinang, Kepulauan Bangka Belitung, Indonesia
hamidah@atmaluhur.ac.id^[1], orizan@atmaluhur.ac.id^[2]

Abstract—The advancement of information technology has become more widespread across various sectors, particularly in education. The integration of information technology has increasingly simplified many aspects of human life. This study aims to evaluate the impact of the SIPLah (School Procurement Information System) application on user satisfaction in the procurement of books for elementary schools. SIPLah is a government-provided digital platform designed to streamline the procurement of goods and services within schools, promoting greater transparency, efficiency, and accountability. The research data was collected through surveys involving SIPLah users, such as school principals, teachers, and administrative staff engaged in book procurement. The study measured variables including ease of use, system reliability, procurement process speed, and user satisfaction with the procurement outcomes. The analysis revealed that the SIPLah application has a significant impact on user satisfaction. Among the factors studied, ease of use and system reliability had the most positive influence. However, some respondents reported technical challenges, such as delays in data updates and insufficient technical support. To enhance future user satisfaction, the study recommends improvements in technical services and system optimization.

Keywords— *SIPLah, book procurement, user satisfaction, elementary school, information technology.*

I. INTRODUCTION

In the current industrial revolution 4.0, almost all activities in society use the internet or are completely digital. This is because in the digital era, entrepreneurs or business actors obtain various conveniences and advantages in developing their businesses [1]. The presence of digital technology during the industrial revolution 4.0 can certainly be important for industrial players or businesspeople in developing their business lines [2]. The adoption of digital technology in the expansion of industries and businesses contributes positively to enhancing economic conditions, particularly for entrepreneurs and business players. This phenomenon is commonly referred to as the digital economic[3].

In the digital era, current technological advances cannot be separated from human life. Technology has become a very important need where every activity we do cannot be done without technology. Information technology greatly influences every aspect of human life in the fields of education, health, trade and others [4].

The acquisition of goods and services within government plays a vital role in ensuring transparency, efficiency, and accountability. To achieve these goals, the Indonesian government launched the School Procurement Information System (SIPLah), a digital platform designed to simplify procurement processes in educational institutions, including the acquisition of books for elementary schools. SIPLah offers a practical solution to simplify procurement activities while enhancing both efficiency and the overall quality of the process. [5].

In Pangkalpinang City, the SIPLah application has been introduced for procuring elementary school books. However, as with any new technology, user satisfaction is a crucial aspect that must be evaluated. Several factors influence user satisfaction with the SIPLah application, including its ease of use, the speed of the procurement process, and the quality of the books procured [6]. Therefore, it is essential to analyze how the use of the SIPLah application affects user satisfaction, particularly within the context of elementary school book procurement [7].

This study seeks to evaluate the effect of the SIPLah application on user satisfaction in Pangkalpinang City and identify the application's strengths and weaknesses. The findings are expected to offer recommendations for future improvements and development, ensuring that the SIPLah application delivers optimal benefits to all stakeholders involved in the elementary school book procurement process. [8].

This study utilizes a quantitative approach, gathering primary data directly from respondents via questionnaires. The data analysis is conducted using a multiple linear regression

model. The variables assessed include the ease of use, system reliability, speed of the procurement process, and user satisfaction with the procurement outcomes. The study aims to evaluate the impact of the SIPLah application on user satisfaction within Pangkalpinang City [9].

II. LITERATURE REVIEW

A. Definition of Influence

Influence is a kind of power that exists in something and has the potential to change something else through its influence on it. The power to cause things, or in other words the ability to shape things according to our wishes.

Influences are people who work in formal and informal environments and show cosmopolitan, innovative, competent and accessible characteristics compared to their subordinates. This applies whether the party is formal or informal.

B. Definition Information Technology

Technology involves the development and use of tools, machines, materials, and processes that aid people in addressing challenges.¹⁰ The term often highlights the discovery of new tools based on scientific principles and processes. Meanwhile, information consists of interrelated data that has been processed systematically to convey meaning.

Information and communication technology (ICT) encompasses two key components: information technology and communication technology. Information technology involves all aspects related to the processing, utilization, manipulation, and management of information. In contrast, communication technology focuses on the tools and methods used to transmit data between devices or systems. Together, these technologies play a crucial role in enabling the efficient flow and management of information [11].

C. Application SIPLah

In analyzing the influence of using the SIPLah application on user satisfaction, several relevant theories can be used as a basis for understanding how information technology interacts with user satisfaction in the context of procurement of goods and services [12].

SIPLah is an innovative system for the procurement of goods and services by Education Units (Satdik), aimed at enhancing transparency and simplifying administrative processes and reporting. It also provides opportunities for MSMEs to participate as suppliers within the platform. This policy is crucial for stakeholders, including local governments, educational institutions, and MSMEs, as it offers essential guidance for effective procurement practices.

Based on Law No. 20 of 2003 regarding the National Education System, the aim of national education is to foster individual potential and develop character while advancing a dignified national culture. The goal is to produce well-rounded

individuals who are knowledgeable, devoted to God, possess noble character, and actively contribute to society. These individuals are expected to be healthy, creative, independent, capable, and responsible members of the community.

Educational units, as part of this system, include institutions across formal, non-formal, and informal education streams, catering to various levels and types of education. Their role is to provide educational services that align with national education goals. In fulfilling this mandate, educational units manage a variety of tasks, including teaching and learning processes, student assessments, resource management, administrative functions, and the provision of learning infrastructure. Ensuring the smooth delivery of these services is essential to supporting the sustainability and success of the national education system.

SIPLah is an electronic system designed to facilitate the procurement of goods and services by educational units, accessible through the siplah.kemdikbud.go.id platform. Its features are developed based on the guidelines outlined in the Regulation of the Minister of Education and Culture No. 14 of 2020 regarding the procurement of goods and services by educational units.

The goal is to develop students' potential to become individuals who believe in and are devoted to God Almighty. Educational units, which include formal, non-formal, and informal education providers, are responsible for delivering educational services at various levels and types of education.

These educational units play a critical role in achieving national education objectives by offering services such as teaching and learning activities, performance evaluations, resource management, administrative operations, and the provision of learning infrastructure. Ensuring these services function effectively is essential for sustaining the educational process [13].

D. User Satisfaction Theory

User satisfaction theory outlines the extent to which users' expectations are fulfilled during their interactions with a system or product. As noted by DeLone and McLean (1992) in their information system success model, user satisfaction is significantly affected by the quality of information, system quality, and service quality. In relation to the SIPLah application, user satisfaction can be evaluated based on how effectively the application offers convenience, accuracy, and reliability in the book procurement process within schools.

Measurement of SIPLah user satisfaction can be identified through several aspects:

- 1) System quality: Reliability, ease of use, and application response time in serving procurement.
- 2) Quality of information: Completeness, relevance and accuracy of information provided by applications related to book procurement.
- 3) Quality of service: Technical support and services provided

by application managers to users.

This research covers various aspects that influence user satisfaction in the use of information technology, especially the application of SIPLah in the procurement of elementary school books. By using user satisfaction theory, this research will dig deeper into how the SIPLah application influences user satisfaction in Pangkalpinang City and provide recommendations for further development [14].

III. METHODOLOGY RESEARCH

This study uses a quantitative method. This method can be used to solve a problem by calculating the extent of the influence of independent variables on the dependent variable.

A. Type of Research

The research method used in this study is quantitative. It measures the influence of variables such as ease of use, system quality, and procurement process speed. This quantitative approach is applied to determine the extent of the impact between the variables studied.

B. Research Variables

This research utilizes two types of variables: the independent variable (X) and the dependent variable (Y).

C. Population and Research Sample

The population in this study were all SIPLah application users who were involved in procuring elementary school books in Pangkalpinang City. They consist of school principals, teachers and administrative staff who are directly involved in the procurement process. Sampling was carried out using a purposive sampling method, where respondents were selected based on certain criteria, namely users who had used the SIPLah application at least once in the book procurement process. The sample size is determined using the Slovin formula or based on the minimum number of samples required for regression analysis, usually around 66 respondents, namely book procurement operators for each school.

D. Research Instruments

The tool employed in this research is a questionnaire given to respondents to measure system quality, service quality, and user satisfaction to measure respondents' perceptions of each dimension. This questionnaire uses a Likert scale with the following ranges:

TABLE 1. LIKERT SCALE

No.	Category	value
1.	Strongly agree	4
2.	Agree	3
3.	Don't agree	2

4.	Strongly Disagree	1
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A hypothesis is a temporary assumption or conclusion that can be proven true through data analysis and testing. The hypothesis of this study can be seen in the image below.

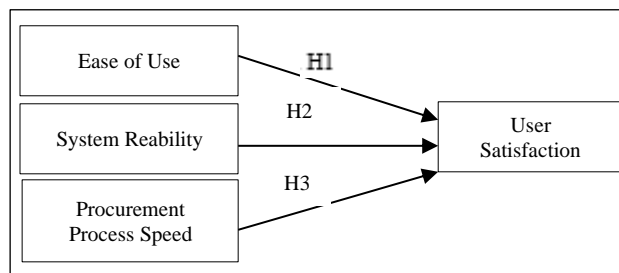


Fig. 1. Research Hypothesis

E. Data Collection Techniques

Primary data was gathered by distributing questionnaires to respondents. The questionnaires can be administered either directly (offline) or through online surveys to reach a broader audience. Data collection occurred over a specified time frame to ensure the completeness and validity of the data. Additionally, data collection may also involve interviews and observations.

F. Data Analysis Techniques

The data collected from the questionnaires will be analyzed through multiple linear regression statistical techniques. This analysis aims to assess the impact of independent variables—such as ease of use, usability, system quality, and service quality—on the dependent variable, which is user satisfaction [15]. The steps in multiple linear regression analysis include:

- 1) Validity and Reliability Test: Prior to conducting further analysis, a validity test is performed to confirm that the measurement instrument (questionnaire) accurately assesses what it is intended to measure.
- 2) Classical Assumption Test
 - a) Normallity Test
 - b) Multicollinearity Test
 - c) Heteroscedasticity Test
- 3) Multiple Linear Regression Test

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$
- 4) Significance Test (Uji t dan Uji F)
- 5) Coefficient of Determination (R²)

IV. RESULT AND DISCUSSION

In this chapter, the findings from the data analysis and discussions are presented concerning the impact of using the SIPLah application on user satisfaction in the procurement of elementary school books in Pangkalpinang City.

A. Description of Respondent Data

In this research, the number of respondents was 55 respondents, namely operators of every elementary school in Pangkalpinang City. The description of respondent data aims to provide information regarding the characteristics of SIPLah application users. The characteristics collected include:

1) Respondents Based on Gender

TABLE II. RESPONDENTS BASED ON GENDER

No.	Information	amount
1.	Male	34
2.	Female	21

Based on the data above, it can be concluded that there were 34 male respondents (61.82% of the total respondents) while there were 21 female respondents (38.18% of the total respondents).

2) Respondents Based on Position

TABLE III. RESPONDENTS BASED ON POSITION

No.	Information	Amount
1.	Headmaster	14
2.	Teacher	32
3.	Education Personnel	9

Based on the data above, it can be concluded that the principal respondents were 14 people (25.45% of the total respondents), the teacher respondents were 32 people (58.18% of the total respondents) while the education staff respondents were 9 people (16, 36% of total respondents).

3) Respondents Based on Usage Experience

TABLE IV. RESPONDENTS BASED ON USAGE EXPERIENCE

No.	Information	Amount
1.	< 1 Tahun	18
2.	1 – 2 Tahun	29
3.	> 2 Tahun	8

Based on the data above, it can be concluded that respondents with less than 1 year of experience using the application were 18 people (32.73% of the total respondents), data from respondents with less than 1-2 years of experience were 29 people (52.72% of the total respondents) while data on respondents with more than 2 years of experience were 8 people (14.55% of the total respondents).

4) Respondent Based on Frequency of Use

TABLE V. RESPONDENTS BASED ON FREQUENCY OF USE

No.	Information	Amount
1.	1 kali	8
2.	2-3 kali	19
3.	Diatas 3 kali	28

From the data presented above, it can be inferred that respondents with a frequency of use 1 time were 8 people (14.55% of the total respondents), respondents with a frequency of use 2-3 times were 19 people (34.55% of the total respondents) while the respondent data with a frequency of use above 3 times as many as 28 people (50.91% of total respondents).

The results of data collection show that many respondents are teachers with experience using the SIPLah application for 1-2 years, and more than 50% of respondents use the application more than three times a year.

B. Validity and Reliability Test

The validity and reliability tests were distributed to 20 operator respondents in elementary schools.

1) Validity Test

The validity test is performed by assessing the correlation between each questionnaire item and the total variable score. An item is considered valid if its correlation coefficient (r) exceeds 0.5 and is statistically significant. The SPSS test results indicate that all items in the questionnaire are valid, except for one item, Y3, which was excluded due to its calculated r value being lower than the r-table value.

TABLE VI. VALIDITY TEST

variabl e	Stateme nt	rhitung	rtabel	Ket
Ease of use	X1.1	0,755	0,4227	Valid
	X1.2	0,755		Valid
	X1.3	0,859		Valid
System reliabili ty	X2.1	0,859		Valid
	X2.2	0,859		Valid
	X2.3	8,859		Valid
Speed of procure ment process	X3.1	0,772		Valid
	X3.2	0,755		Valid
	X3.3	8,859		Valid
User Satisfac tion	Y1	0,755		Valid
	Y2	0,859		Valid
	Y3	0,340		No Valid
	Y4	0,859	Valid	

2) *Reability Test*

Reliability testing was performed using Cronbach's Alpha, with an instrument considered reliable if the Cronbach's Alpha value exceeds 0.5. The results of the calculations show a value of 0.880, with all research variables demonstrating reliability values above 0.5, confirming the instrument's reliability.

C. *Classic Assumption Test*

1) *Normality Test*

The normality test was conducted using the Kolmogorov-Smirnov non-parametric statistical method. The results reveal that the significance value of 0.461 exceeds 0.05, which leads us to conclude that the residual values follow a normal distribution.

		Unstandardized Residual
N		55
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.88127322
Most Extreme Differences	Absolute	.115
	Positive	.115
	Negative	-.055
Kolmogorov-Smirnov Z		.853
Asymp. Sig. (2-tailed)		.461

Fig. 2. Normality Test

2) *Multicollinearity Test*

The standard criteria for assessing multicollinearity include a tolerance value greater than 0.10 or a VIF value below 10. Based on the table above, all variables (x1, x2, x3) have tolerance values exceeding 0.10 and VIF values under 10. Thus, it can be concluded that there is no multicollinearity among the independent variables.

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF	
		1	(Constant)	4.945	1.438		3.439	.001				
	x1	.410	.205	.296	2.000	.051	.408	.270	.250	.713	1.402	
	x2	-.239	.248	-.261	-.967	.338	.230	-.134	-.121	.215	4.658	
	x3	.419	.289	.418	1.446	.154	.342	.198	.181	.187	5.338	

a. Dependent Variable: y

Fig. 3. Multicollinearity Test

3) *Heteroscedasticity Test*

Heteroscedasticity testing is performed by creating a scatterplot of the residuals against the predicted values of the standardized dependent variable. The results of the Heteroscedasticity test are illustrated in the scatterplot shown below:

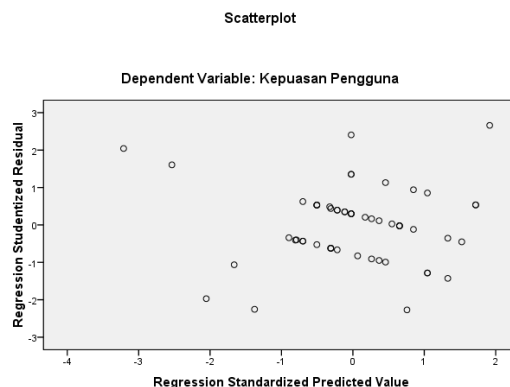


Fig. 4. Heteroscedasticity Test

D. *Multiple Linnear Regression Analysis Test*

The multiple linear regression equation in this research is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e \quad (1)$$

1) *Regression Coefficients and Significance*

Based on the results obtained from the regression coefficient above, an equation can be created following regression:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3$$

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	4.945	1.438		3.439	.001
	x1	.410	.205	.296	2.000	.051
	x2	-.239	.248	-.261	-.967	.338
	x3	.419	.289	.418	1.446	.154

Fig. 5. Coefficient Regression Test

Based on the table above, the hypothesis results show that the independent variable X1 has a significant value of 0.051, which is above 0.05, indicating that the ease-of-use variable (X1) does not significantly impact user satisfaction (Y). Similarly, the independent variable X2 has a significance value of 0.339, also exceeding 0.05, suggesting that the system reliability variable (X2) does not have a significant effect on user satisfaction (Y). Lastly, the independent variable X3 has a significant value of 0.154, which is likewise above 0.05, implying that the procurement process speed variable does not significantly influence user satisfaction (Y).

2) *Coefficient of Determination Test (R²)*

The R Square value of 0.204 suggests that 20.4% of the variance in user satisfaction (Y) can be attributed to independent variables, including ease of use, system quality, and procurement process speed. The other 79.6% is affected by factors not included in the model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.451 ^a	.204	.157	1.918

Fig. 6. Coefficient of Determination Test

3) F Test (Simultan)

The results of the F test indicated a significantly value of 0.008, which is less than 0.05. Therefore, it can be concluded that all independent variables collectively influence user satisfaction.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.961	3	15.987	4.344	.008 ^a
	Residual	187.675	51	3.680		
	Total	235.636	54			

Fig. 7. F test

CONCLUSION

Based on the research findings regarding the impact of the SIPLah application on user satisfaction in the procurement of books for elementary schools in Pangkalpinang City, it was found that the ease-of-use variable (X1) has a positive but insignificant effect on user satisfaction (Y). This suggests that the success of the SIPLah application in procuring elementary school books in Pangkalpinang City is not solely reliant on technology but also on how user-friendly the application is. A more user-friendly application tends to lead to higher user satisfaction. The research revealed that the system reliability variable (X2) also has a positive but insignificant effect on user satisfaction (Y). This indicates that while the reliability of the application system is important, its influence on user satisfaction remains limited. A more reliable application contributes to greater satisfaction during the book procurement process. The findings indicated that the speed of the procurement process variable (X3) has a positive but insignificant effect on user satisfaction (Y). This highlights that the efficiency of the procurement process is important, the faster the procurement process, the higher the level of user satisfaction.

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