REVEALING THE ROLE OF ASN DIGITAL LITERACY IN IMPROVING BUDGET MANAGEMENT EFFECTIVENESS: A STUDY OF THE GOVERNMENT OF EAST NUSA TENGGARA PROVINCE

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Abstract

This study aims to analyze the influence of Regional Government Information System (SIPD RI) synchronization, e-Budgeting, and resistance to change on the effectiveness of budget management in the Provincial Government of East Nusa Tenggara. A quantitative approach was employed using a survey method by distributing questionnaires to officials within the Regional Financial Agency of East Nusa Tenggara Province. Data were analyzed using multiple linear regression with the SPSS program. The results of this study indicate that the SIPD RI Synchronization variable has a positive and significant effect on the effectiveness of budget management, meaning that the more optimal the system synchronization, the higher the effectiveness of budget utilization. The E-Budgeting variable also shows a positive and significant effect on budget management effectiveness, demonstrating that the use of electronic-based systems supports transparency, efficiency, and accountability in regional financial management. The Change Resistance variable has a positive and significant effect on budget management effectiveness, which means that the better the management of resistance to change, the higher the effectiveness of budget management. Simultaneously, the three independent variables have a significant effect on the effectiveness of regional budget management. These findings emphasize that the success of regional financial management reform relies heavily on the synergy between digital systems and officials' readiness to embrace change. Therefore, the Provincial Government of East Nusa Tenggara must strengthen training, technological infrastructure, and change management to achieve optimal budget management effectiveness.

Keywords: SIPD RI, e-Budgeting, Resistance to Change, Budget Management Effectiveness, East Nusa Tenggara

INTRODUCTION

Information systems are one of the essential elements in facing the current era of globalization, where technology is rapidly advancing and human needs are becoming increasingly complex in the digital age. Advances in information technology demand changes in patterns and methods of conducting activities across all sectors—industry, trade, and especially government (Ramadhan et al., 2019).

The rapid development of information systems and their significant impact have increased their value within an organization. Information systems can now be operated online, enabling users to access data anytime and anywhere. This capability is currently utilized by the government to monitor governmental progress by developing integrated systems, as well as to enhance development programs across various sectors. It serves as a tool for delivering accurate information and extensively involving the public by leveraging digital technology, which has become an essential expectation for modern and future regional governance management.

Law Number 23 of 2014 on Regional Government mandates that regional governments must provide regional government information, consisting of regional development information and regional financial information, to support information transparency to the public, implement a national regional financial information system, and evaluate regional financial management.

Regional governments are required to provide and publicly disclose regional financial information, including budgeting information, budget implementation, and financial reports, aimed at supporting public information transparency as stated in Article 214 of Government Regulation Number 12 of 2019 on Regional Financial Management.

To ensure valid, accurate, and efficient information and to achieve good governance in planning, budgeting, administration, and reporting, the use of a unified and standardized information system is mandatory for regional governments, as stipulated in the Regulation of the Minister of Home Affairs Number 70 of 2019 on Regional Government Information Systems.

Although regulations mandate the use of the Regional Government Information System (SIPD), at the national level, many regional governments still use locally developed financial information systems. One region that uses a local information system is the Provincial Government of East Nusa Tenggara (NTT), through its Regional Financial Management Information System (SIPKD).

The financial management of the NTT Provincial Government for the fiscal years 2021–2025 has implemented SIPD, but only for the planning and budgeting stages, including the preparation of the Regional Government Work Plan (RKPD), the General Budget Policy (KUA) Provisional Budget Ceiling Priorities (PPAS), and the Regional Revenue and Expenditure Budget (APBD). Meanwhile, the administrative and reporting stages still utilize SIPKD. Even though the use of SIPD is still limited to budgeting, the preparation and approval of the APBD have been carried out according to schedules set in the prevailing regulations.

The application of SIPD for administrative and reporting stages in NTT Province, particularly at the Regional Financial Agency (BKEUDA), has not been fully optimized, requiring adjustments to the new system. In addition to the transition from SIPKD to SIPD, new challenges have emerged with the government's policy requiring the use of SIPD-RI

starting from the 2024 fiscal year. SIPD-RI is designed as a general application not only for regional governments but also to support other ministries/agencies as part of an effort to integrate various applications used across institutions.

Based on the Audit Report (LHP) of the Audit Board of Indonesia (BPK) on the 2023 Regional Government Financial Reports (LKPD) of East Nusa Tenggara Province, several regional work units (OPD) were found to still be using local e-Budgeting systems in parallel with SIPD. This has caused data inconsistencies, duplicate inputs, and scheduling conflicts between systems. The synchronization between SIPD RI and SIPKD has not been optimal and may disrupt budget management effectiveness.

Another challenge in implementing e-Budgeting is the technical readiness and human resource capacity at the regional level. Several districts in eastern Indonesia, including NTT, face difficulties in aligning their e-Budgeting systems due to the lack of IT specialists and reliance on unstable internet connections (Wibowo, 2021).

Resistance or refusal is one reason why planned organizational changes often fail. Changes typically do not run smoothly, and resistance—which is part of the transition process is common. This generally arises from a lack of information or limited understanding.

Changes in government policies aimed at improving budget management in Indonesia inevitably encounter resistance from individuals (human resources), which may be due to low competency, lack of knowledge regarding assigned tasks, or insufficient technological and informational infrastructure. Conceptually, resistance to change is a natural reaction to disruptions that upset existing equilibrium.

Relevant previous studies indicate that although digital systems such as SIPD RI and e-Budgeting are designed to support transparency and effective budget management, their implementation still faces many obstacles. Rizal Nur Arif and Firmansyah (2024) found that the implementation of SIPD RI at the Regional Financial Agency of Karanganyar Regency was not optimal due to limited internet connectivity, low system integration, and features that did not fully meet technical needs. Meanwhile, Wensi Hendriyani et al. (2022) reported that regional work units still exhibited resistance due to limited digital literacy and training, resulting in only a few operators being capable of running the system. Similar findings were reported by Sulistyo Arini and Suci Nasehati (2022), who noted that limited human resources, especially in technology, remain major barriers to optimizing e-Budgeting. Furthermore, the study by Wensi Hendriyani et al. also emphasized that the lack of leadership commitment and dependence on traditional work practices hinder digital transformation.

RESEARCH METHOD

This research was conducted at the Regional Financial Agency (BKEUDA) of East Nusa Tenggara Province, located at Jalan Eltari No. 52, Kupang, with the research object being employees directly involved in the budget management process, including planning, budgeting, administration, and reporting. The population consists of all employees engaged in budget management, while the sample was selected using a combination of Roscoe's theory and purposive sampling techniques, totaling 50 respondents who met the criteria of having at least one year of work experience and direct involvement in budget management. This study employs quantitative data obtained from primary data through the distribution of Likert-scale questionnaires and secondary data through literature review. Data collection was carried out using a closed-ended questionnaire containing statements related to the

variables of SIPD RI Synchronization, e-Budgeting, Change Resistance, and Budget Management Effectiveness, as well as literature studies to strengthen the theoretical foundation of the research.

RESULTS AND DISCUSSION

Results of Classical Assumption Test

Normality Test Results

This test is considered normal if the significance value is greater than 0.05, and considered not normal if it is less than 0.05. The results of the One-Sample Kolmogorov-Smirnov Test (K-S) for this study are as follows:

Table 1.
Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		50
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.52577816
Most Extreme Differences	Absolute	.073
	Positive	.073
	Negative	-.053
Test Statistic		.073
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: Processed by the researcher, 2025

Based on the results of the One-Sample Kolmogorov-Smirnov test on the regression model residuals, the Asymp. Sig. (2-tailed) value obtained was 0.200. It can be concluded that the significance value is greater than 0.05, namely 0.200 > 0.05, which indicates that the data are normally distributed because they meet the normality test requirements.

Multicollinearity Test Results

The multicollinearity test is used to identify perfect linear relationships (correlations) among independent variables. A good regression model should not have correlations among its independent variables. If the tolerance value is greater than 0.10 (Tolerance > 0.10) and the VIF value is less than 10, it means there is no multicollinearity. Conversely, if the tolerance value is less than 0.10 and the VIF value is greater than 10, multicollinearity is present.

Table 2.
Multicollinearity Test Results

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	X1	.869	1.150
	X2	.577	1.734
	X3	.636	1.573
a. Dependent Variable: Y			

Source: Processed by the researcher, 2025

Based on the table above, there is no multicollinearity problem among the independent variables. The tolerance values for SIPD RI Synchronization (X1) are 0.869, E-Budgeting (X2) is 0.577, and Change Resistance (X3) is 0.636, while the Variance Inflation Factor (VIF) values are 1.150, 1.734, and 1.573 all far below 10. These results indicate that the independent variables do not have high correlations with each other, allowing the regression coefficients to be considered stable and accurately interpreted in explaining their influence on Budget Management Effectiveness (Y).

Heteroscedasticity Test Results

According to Ghozali (2021:178), the heteroscedasticity test aims to examine whether there is a variance difference in the residuals across observations. A good regression model is homoscedastic, meaning no heteroscedasticity is present. Detection can be performed through scatterplot analysis. If the points form patterns such as waves, widening, or narrowing, heteroscedasticity is indicated. However, if the points spread randomly and are scattered above and below zero on the Y-axis, heteroscedasticity is not present.

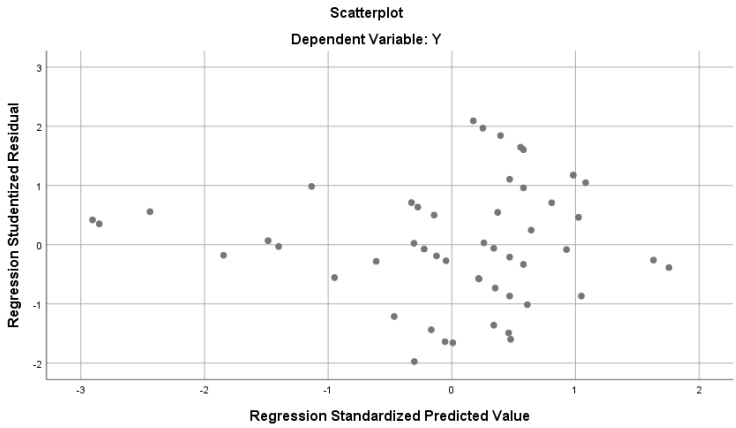

Figure 1.
Heteroscedasticity Test Results (Scatterplot)

Based on Figure 1, the points are randomly scattered above and below the horizontal axis, without forming any recognizable pattern such as waves, funnels, or a specific direction. This indicates that the residual variance in the study is relatively homogeneous or constant. Therefore, the regression model does not suffer from heteroscedasticity.

Multiple Linear Regression Test Results

Multiple linear regression analysis in this study aims to determine the extent to which the independent variables SIPD RI Synchronization, E-Budgeting, and Change Resistance influence the dependent variable, namely Budget Management Effectiveness, both simultaneously and partially.

Table 3.
Multiple Linear Regression Test Results

Coefficients[a]			
Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	2.944	1.297
	X1	.210	.078
	X2	.305	.108
	X3	.366	.135
a. Dependent Variable: Y			

Source: Processed by the researcher, 2025

From the results in the table, the multiple regression equation is obtained as follows:

$$\mathbf{Y = a + \beta_1 SSR + \beta_2 eB + \beta_3 RP + e}$$

$$\mathbf{Y = 2,944 + 0,210SSR + 0,305eB + 0,366RP + e}$$

Description:
Y = Budget Management Effectiveness
X_1 = SIPD RI Synchronization (SSR)
X_2 = *e-Budgeting* (eB)
X_3 = Change Resistance (RP)
a = Constant
β_1, β_2, β_3 = Regression coefficients
e = Error term

These results indicate that each independent variable influences Budget Management Effectiveness.

1. **Constant (α) = 2.944**
   When SIPD RI Synchronization, E-Budgeting, and Change Resistance are zero, Budget Management Effectiveness has a constant value of 2.944.
2. **Coefficient of SIPD RI Synchronization (X1) = 0.210**
   An increase of one point in SIPD RI Synchronization increases Budget Management Effectiveness by 0.210, assuming other variables remain constant.
3. **Coefficient of E-Budgeting (X2) = 0.305**
   An increase of one point in E-Budgeting increases the effectiveness by 0.305.
4. **Coefficient of Change Resistance (X3) = 0.366**
   An increase of one point in Change Resistance increases effectiveness by 0.366.
   All coefficients are positive, showing positive relationships with Budget Management Effectiveness.

Hypothesis Test Results

T-Test (Partial Test)

The partial test aims to determine the influence of each independent variable individually. A variable significantly influences the dependent variable if the t-statistic > t-table (Ghozali, 2018). Significance < 0.05 also indicates a significant effect.

Table 4.
T-Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.944	1.297		2.269	.028
	X1	.210	.078	.281	2.704	.010
	X2	.305	.108	.359	2.816	.007
	X3	.366	.135	.329	2.711	.009
a. Dependent Variable: Y						

Source: Processed by the researcher, 2025

With 50 respondents, degrees of freedom (df) = n – 2 = 48, the t-table value at 0.05 significance is 2.011.

1. SIPD RI Synchronization
   t-count = 2.704, significance = 0.010
   Since 0.010 < 0.05 and 2.704 > 2.011, SIPD RI Synchronization significantly influences Budget Management Effectiveness. Ha_1 accepted.
2. E-Budgeting
   t-count = 2.816, significance = 0.007
   Since 0.007 < 0.05 and 2.816 > 2.011, E-Budgeting significantly influences effectiveness. Ha_2 accepted.
3. Change Resistance
   t-count = 2.711, significance = 0.009
   Since 0.009 < 0.05 and 2.711 > 2.011, Change Resistance significantly influences effectiveness. Ha_3 accepted.

F-Test (Simultaneous Test)

The simultaneous test determines whether all independent variables collectively influence the dependent variable. If significance < 0.05, the effect is significant.

Table 5.
F-Test Results

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	150.428	3	50.143	20.220	.000[b]
	Residual	114.072	46	2.480		
	Total	264.500	49			
a. Dependent Variable: Effectiveness of budget management						

b. Predictors: (Constant), Resistensi perubahan, E-Budgeting, Sinkronisasi SIPD RI

Source: Processed by the researcher, 2025

The ANOVA results show:

1. F-count = 20.220
2. Significance = 0.000

Because 0.000 < 0.05, SIPD RI Synchronization, E-Budgeting, and Change Resistance collectively influence Budget Management Effectiveness. Ha_4 accepted.

R^2 Test (Coefficient of Determination)

This test measures how well the model explains the dependent variable's variation.

Table 6.
R^2 Test Results

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754[a]	.569	.541	1.57475
a. Predictors: (Constant), Resistensi perubahan, E-Budgeting, Sinkronisasi SIPD RI				
b. Dependent Variable: Efektivitas pengelolaan anggaran				

Source: Processed by the researcher, 2025

The Model Summary shows an R Square of 0.569 (56.9%). This means that SIPD RI Synchronization, E-Budgeting, and Change Resistance explain 56.9% of the variation in Budget Management Effectiveness, while the remaining 43.1% is influenced by other factors not included in the study.

CONCLUSION

Based on the results of the study on the Influence of SIPD RI Synchronization, E-Budgeting, and Change Resistance on the Effectiveness of Budget Management in the Government of East Nusa Tenggara Province, several conclusions can be drawn as follows:

1. SIPD RI synchronization has a positive and significant effect on the effectiveness of budget management. This indicates that the better the synchronization in the implementation of SIPD RI, the more effective the budget management carried out by the regional government. The hypothesis test results show a positive coefficient value with a significance level below 0.05, meaning that the hypothesis is accepted.
2. E-Budgeting has a positive and significant effect on the effectiveness of budget management. The implementation of the e-budgeting system has proven to increase transparency, accountability, and speed in the budget management process. The partial test (t-test) results show that the e-budgeting variable makes a real contribution to the effectiveness of budget management.
3. Change resistance has a positive and significant effect on the effectiveness of budget management. Although change resistance is often considered an obstacle, this study shows that resistance, when managed properly, can actually drive system improvement. This means that the better the regional government's ability to manage change resistance, the higher the effectiveness of budget management.
4. SIPD RI synchronization, e-budgeting, and change resistance simultaneously have a significant effect on the effectiveness of budget management. The F-test results show

that the three independent variables collectively influence the dependent variable. Moreover, the coefficient of determination (R^2) of 0.569 indicates that 56.9% of the variation in budget management effectiveness can be explained by the three variables, while the remaining percentage is influenced by other factors outside this study.

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