The Effect of E-Government Implementation on Internal Control in Public Services: A Case Study of Helvetia Village

Tengku Aisyah Rahmi Zulmi, Nancy Mayriski Siregar, Vina Arnita

Abstract

This study was conducted to determine the effect of E-Government Implementation and Internal Control on the Quality of Public Services. The research location is Helvetia Village in Medan City. This research is an associative study with a quantitative approach. The population of this study is the public service users in Helvetia Village, with a sample of 35 respondents obtained through saturated sampling techniques. Data processing used SPSS Version 31. The results show that E-Government Implementation partially has a negative and significant effect on the Quality of Public Services, Internal Control partially has a positive but insignificant effect on the Quality of Public Services, and simultaneously both variables E-Government Implementation and Internal Control have a significant effect on the Quality of Public Services. The contribution of both variables to the Quality of Public Services in this study is 42%.Keywords: Regional Expenditure, Regional Original Revenue, General Allocation Funds, Special Allocation Funds.

Keywords: E-Government, Internal Control, Quality of Public Services.

Tengku Aisyah Rahmi Zulmi[1]
[1]Bachelor of Accounting, Universitas Pembangunan Panca Budi, Indonesia
e-mail: isyahrahmi@gmail.com[1]

Nancy Mayriski Siregar[2], Vina Arnita[3]
[2,3]Master of Accounting, Universitas Pembangunan Panca Budi, Indonesia
e-mail: nancymayriski@dosen.pancabudi.ac.id[2], vinaarnita@dosen.pancabudi.ac.id[3]
2nd International Conference on Islamic Community Studies (ICICS)
Theme: History of Malay Civilisation and Islamic Human Capacity and Halal Hub in the Globalization Era
https://proceeding.pancabudi.ac.id/index.php/ICIE/index

Introduction

The development of information technology has encouraged the government to improve the quality of services through e-government. However, its implementation at the sub-district level still faces obstacles, such as limited infrastructure, low digital literacy, and suboptimal internal oversight. In Helvetia Sub-district, many services are still performed manually, reducing efficiency, transparency, and accountability. The implementation of e-government is necessary to accelerate services, strengthen internal control, and improve service quality. This study analyzes the level of e-government implementation in Helvetia Sub-district, the factors that hinder digital services, and its impact on internal control in public services.

Literature Review

2.1.System Theory

System Theory, developed by Ludwig von Bertalanffy (1968), explains that every organization consists of interrelated components that function in an integrated manner to achieve goals. In the context of government, public institutions are viewed as open systems that receive input in the form of resources, policies, and technology, then process them through internal mechanisms such as control and coordination, to produce output in the form of public services. Robbins and Coulter (2016) emphasize that organizational effectiveness is determined by the interaction between components, not just by a single part. Therefore, the implementation of E-Government is a system input that is expected to strengthen internal control mechanisms and improve the quality of public services.

2.2.Public Service

Public service is an activity or series of activities carried out by the government to meet the needs of the community in accordance with statutory provisions (Law No. 25 of 2009). Rodiyah (2021) defines public service as a form of bureaucratic service provided to citizens to ensure the fulfillment of public interests. Quality public service must be responsive, fast, transparent, accurate, and accessible to all members of the public. Moenir (2006) adds that good service is service that complies with procedures, is error-free, and satisfies recipients.

2.3.E-Government Implementation

E-Government is the use of information technology by governments to administer and provide public services digitally. Implementing e-Government enables faster, more transparent, more efficient service delivery, and greater accessibility without time or location constraints. However, implementing digital systems requires infrastructure readiness, competent human resources, and changes to work processes to ensure optimal technology operation.

2.4.Internal control

Internal Control is a process designed to ensure the effectiveness of organizational activities, the safeguarding of assets, and the reliability of reports and procedures. In public services, internal control serves to ensure compliance with standard operating procedures (SOPs), increase transparency, and minimize errors and potential irregularities. Digital systems through e-government help strengthen internal control by providing clearer, more documented, and more easily monitored workflows.

Research Methodology

The study examined the implementation of e-government and internal control on the quality of public services in Helvetia Village. Primary data was obtained through the distribution of Likert-scale questionnaires to the public and village officials, while secondary data was collected through documents, reports, and related literature.

Data collection was conducted through observation, questionnaires, and documentation. Each variable was measured based on indicators established in the operational definition. Data were analyzed using validity and reliability tests, classical assumption tests, and multiple linear regression to determine the magnitude of the influence between the variables. The results of the analysis were used to explain the relationship between digital systems, internal control, and the quality of public services.

Results

This research used SPSS Version 31 for data processing.

4.1 Respondent Characteristics

Table 1. Characteristics Based on Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	15	42.9	42.9	42.9
	Woman	20	57.1	57.1	100.0
	Total	35	100.0	100.0	

Source : SPSS 31

Respondents consisted of 35 residents of Helvetia Village. The majority of respondents were female, at 20 (57.1%), while 15 were male (42.9%). This indicates a higher female participation rate in the public service survey.

Table 2. Characteristics Based on Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30	12	34.3	34.3	34.3
	31-40	15	42.9	42.9	77.1
	>40	8	22.9	22.9	100.0
	Total	35	100.0	100.0	

Source : SPSS 31

Respondents were predominantly from the productive age group. The 31–40 age group comprised the largest group, with 15 (42.9%), followed by 12 (34.3%) aged 20–30, and 8 (22.9%) aged over 40. This indicates that the majority of public service users in Helvetia Village are in the active adult age category.

Table 3. Characteristics Based on Last Education

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	SMA	28	80.0	80.0	80.0
	D3	3	8.6	8.6	88.6
	S1	4	11.4	11.4	100.0
	Total	35	100.0	100.0	

Source : SPSS 31

The majority of respondents were high school graduates, with 28 respondents (80%). Three had a diploma (8.6%), and four had a bachelor's degree (11.4%). This reflects the fact that the majority of respondents have a secondary education, which influences their understanding of technology and digital services.

4.2 Descriptive Analysis of Variables

Table 4. Response to the e-government implementation variable (X1)

Tanggapan Responden	STS		TS		N		S		SS		Mean
Item No.	F	%	F	%	F	%	F	%	F	%	
1	0	0	0	0	4	11,4	28	80,0	3	8,6	3,97
2	0	0	0	0	9	25,7	20	57,1	6	17,1	3,91
3	0	0	0	0	10	28,6	21	60,0	4	11,4	3,82
4	0	0	1	2,9	11	31,4	19	54,3	4	11,4	3,74
5	0	0	0	0	8	22,9	21	60,0	6	17,1	3,94
6	0	0	0	0	3	8,6	25	71,4	7	20,0	4,11
7	0	0	0	0	7	20,0	22	62,9	6	17,1	3,97

Source : SPSS 31

The analysis results showed that all items fell into the "agree" category, with average scores ranging from 3.74 to 4.11. The highest score was for the item regarding officials' rapid response to digital services (average = 4.11). The lowest score was for the item regarding website ease of use (average = 3.74).

Respondents assessed that the implementation of e-government had improved services, but the website was not optimal because it only served as a source of information, not as an online administrative service.

Table 5. Response to internal control variables (X2)

Tanggapan Responden	STS		TS		N		S		SS		Mean
Item No.	F	%	F	%	F	%	F	%	F	%	
1	0	0	1	2,9	5	14,3	23	65,7	6	17,1	3,97
2	0	0	0	0	6	17,1	20	57,1	9	25,7	4,08
3	0	0	1	2,9	6	17,1	16	45,7	12	34,3	4,11
4	0	0	2	5,7	1	2,9	23	65,7	9	25,7	4,11
5	0	0	1	2,9	9	25,7	15	42,9	10	28,6	3,97
6	0	0	1	2,9	2	5,7	21	60,0	11	31,4	4,20

7	0	0	0	0	5	14,3	17	48,6	13	17,1	4,22

Source : SPSS 31

The average respondent response to Internal Control (X2) ranged from 3.97 to 4.22 and fell into the "Agree" category. The highest score indicates that e-Government is considered effective in strengthening oversight, while the lowest score indicates that SOP compliance is not yet fully consistent. Overall, internal control in Helvetia Village is considered quite good and is assisted by the implementation of e-Government.

Table 6. Response to the public service quality variable (Y)

Tanggapan Responden	STS		TS		N		S		SS		Mean
Item No.	F	%	F	%	F	%	F	%	F	%	
1	0	0	0	0	10	28,6	22	62,9	3	8,6	3,80
2	0	0	2	5,7	13	37,1	14	42,9	5	14,3	3,65
3	0	0	2	2,9	12	34,3	18	51,4	4	11,4	3,71
4	0	0	1	2,9	10	28,6	18	51,4	6	17,1	3,82
5	0	0	1	2,9	9	25,7	17	48,6	8	22,9	3,91
6	0	0	0	0	11	31,4	20	57,1	4	11,4	3,80
7	0	0	0	0	6	17,1	13	37,1	19	45,7	4,28

Source : SPSS 31

Respondents' responses to Public Service Quality (Y) showed a mean value of 3.65–4.28 and fell into the "Agree" category. Service was considered good, particularly thanks to the implementation of e-Government, which has increased the ease and efficiency of services, although service speed still needs to be improved. Overall, service quality in Helvetia Subdistrict was perceived as quite satisfactory.

4.3 Classic Assumption Test

a. Normality Test

A normality test was performed to ensure that the residual data in the regression model was normally distributed. The test used the Kolmogorov–Smirnov method, with the data being declared normal if the significance value (Asymp. Sig.) > 0.05. Normality was also observed using normal probability plots and histograms, where data following the diagonal line indicates that the normality assumption is met.

Table 7. Normality test results

One-Sample Kolmogorov-Smirnov Test

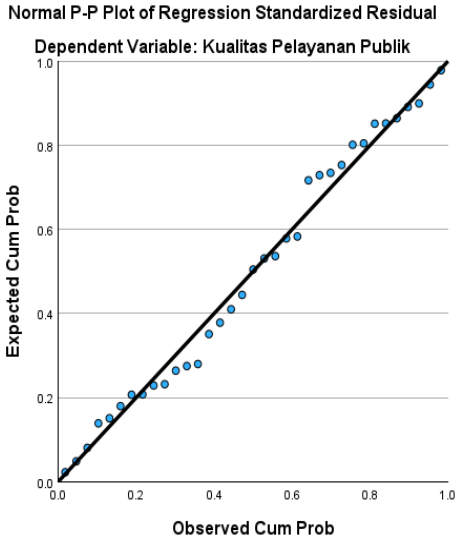
		Unstandardized Residual
N		35
Normal Parameters[a,b]	Mean	0.0000000
	Std. Deviation	2.58755208
Most Extreme Differences	Absolute	0.098
	Positive	0.098
	Negative	-0.094

Test Statistic			0.098
Asymp. Sig. (2-tailed)[c]			.200[d]
Monte Carlo Sig. (2-tailed)[e]	Sig.		0.531
	99% Confidence Interval	Lower Bound	0.518
		Upper Bound	0.544

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

Source : SPSS 31

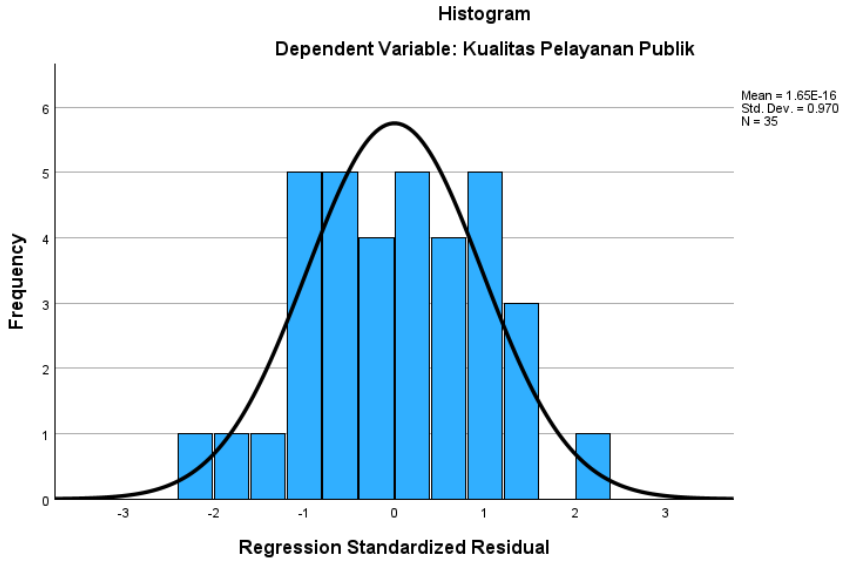
Based on the table above, the results of the normality test using the One-Sample Kolmogorov-Smirnov Test, obtained a significance value (Asymp. Sig. 2-tailed) of 0.200. This value is greater than the significance limit used in the study, which is α = 0.05. Thus, it can be concluded that the residual data is normally distributed and there is no deviation from the distribution assumption of normality.



Source : SPSS 31

Figure 1. Results of the Normality Test P-Plot of Regression Standardized Residual

The figure shows that the points are spread out and follow the diagonal line, so the regression model meets the assumption of normality. Therefore, the data in this study can be said to be normally distributed.



Source : SPSS 31

Figure 2. Results of Hologram Normality Test

Based on the image above, it can be seen that the histogram graph shows a good data pattern image. The Standardized Residual Regression forms a bell-shaped image and follows the direction of the diagonal line so that it fulfills the classical assumptions.

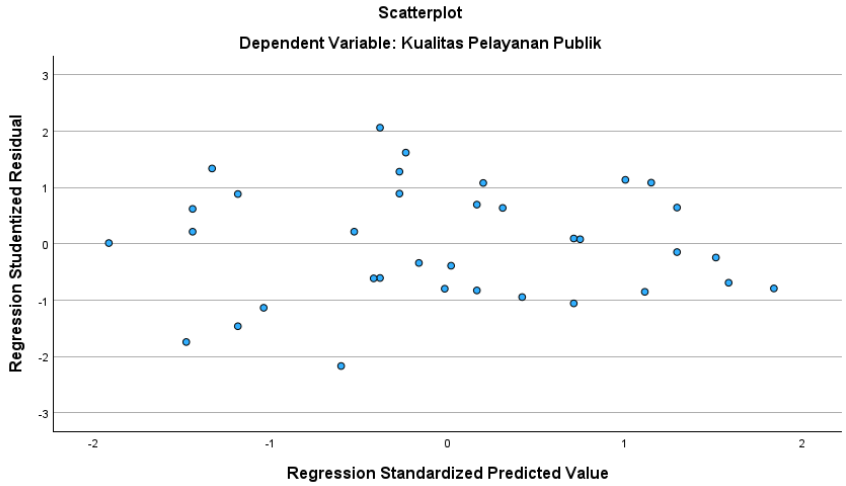
b. Multicollinearity Test

Table 8. Multicollinearity Test Results

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	38.521	7.232		5.326	0.000		
	Penerapan E-Government	-0.581	0.254	-0.388	-2.287	0.029	0.930	1.076
	Pengendalian Internal	0.155	0.156	0.168	0.993	0.328	0.930	1.076
a. Dependent Variable: Kualitas Pelayanan Publik								

Source : SPSS 31

Based on the table above, it can be seen that the tolerance (T) value is 0.930 and the VIF value is 1.076. So it can be concluded that there is no multicollinearity in the independent variables and can be used in this study, because the T value => 0.1 and VIF <10.



Source : SPSS 31

Figure 3. Heteroscedasticity Test Results

The scatterplot shows a random distribution without any particular pattern. Therefore, it is certain that there is.

c. Multiple Linear Regression Analysis Test

Multiple linear regression analysis aims to predict changes in the value of the dependent variable due to changes in the value of the independent variable. The test formula is: Y = a + b1 X 1 + b 2 X 2

Table 9. Regression Coefficient Test Results and Significance Coefficientsa

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	38.521	7.232		5.326	<.001
	Penerapan E-Government	-0.581	0.254	-0.388	-2.287	0.029
	Pengendalian Internal	0.155	0.156	0.168	0.993	0.328

a. Dependent Variable: Kualitas Pelayanan Publik

Source : SPSS 31

The equation above can be explained as follows:

a. The constant value (a) is 38.521, meaning that if the variables E-Government Implementation (X_1) and Internal Control (X_2) are zero, then Public Service Quality (Y) has a value of 38.521 units.

b. The regression coefficient for E-Government Implementation (X_1) is -0.581 with a significance value of 0.029 < 0.05. This indicates that E-Government Implementation has a negative and significant effect on Public Service Quality. This means that every one-unit increase in e-government implementation will decrease public service quality by 0.581 units, assuming other variables remain constant.

c. The regression coefficient for Internal Control (X_2) is 0.155 with a significance value of 0.328 > 0.05. This means that Internal Control has a positive but insignificant effect on Public Service Quality. This means that improvements in internal control do not significantly impact public service quality.
d. The Standardized Beta Coefficients indicate that the E-Government Implementation variable has a dominant influence (Beta = -0.388) compared to Internal Control (Beta = 0.168) on Public Service Quality.
Thus, it can be concluded that in this model, only the E-Government Implementation variable has a significant influence on Public Service Quality, while Internal Control has no significant influence.

Table 10. Results of the Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.380[a]	0.144	0.091	2.66719

a. Predictors: (Constant), Pengendalian Internal, Penerapan E-Government

Source : SPSS 31

Based on the results of the determination test in the Model Summary table above, it can be seen that the R-square value of 0.144 indicates that 14.4% of the variation in Public Service Quality can be explained by the Implementation of E-Government and Internal Control, while the remaining 85.6% is influenced by other factors outside this research model.

Conclusion

This study aims to determine the extent to which the implementation of e-government and internal control impacts the quality of public services in Helvetia Village. Based on the results of data analysis conducted through multiple linear regression, several important conclusions can be drawn, as follows:

5.1 Improving the Implementation of E-Government in Helvetia Subdistrict

The implementation of e-government has a negative and significant impact on the quality of public services in Helvetia Village. This is indicated by the regression coefficient value of -0.581 with a significance of 0.029 < 0.05. This means that the increase in e-government implementation has not been fully followed by an increase in the quality of public services, which is likely caused by limited infrastructure, lack of socialization, and uneven competency of the apparatus.

5.2 Reasons for the lack of online administrative services in Helvetia Subdistrict

Internal control has a positive but insignificant effect on the quality of public services, with a regression coefficient of 0.155 and a significance level of 0.328 > 0.05. This indicates

that internal control has not had a significant impact on improving services, as it is still administrative in nature and has not been optimally integrated with the e-government system.

5.3 Impact of E-Government Implementation on internal control in public services in Helvetia Subdistrict

Simultaneously, e-Government Implementation and Internal Control contribute 14.4% to Public Service Quality, while the remaining 85.6% is influenced by factors outside of this study, such as leadership, work culture, community participation, and local government public service policies.

References

[1] Ardiansyah, M., & Nugroho, A. Y. S. (2020). Pengaruh E-Government terhadap Kualitas Pelayanan Publik di Indonesia. *Jurnal Administratie Publica*, 7(2), 145–154. https://doi.org/10.31289/jap.v7i2.3841

[2] Cantika, D. R., & Hutapea, H. T. (2021). Element sukses pelaksanaan e-government dalam penanggulangan kemiskinan di Dinas Sosial Kota Pekanbaru. *Jurnal Administrasi Negara*, 9(1), 43–52.

[3] Hamrun, A., Prianto, A. L., & Khaerah, N. (2019). Strategi pemerintah daerah dalam pengembangan pelayanan berbasis e-government di Kabupaten Muna. *Jurnal Ilmu Pemerintahan*, 18(2).

[4] Ilham, A. (2022). *Pengaruh penerapan e-government dalam pelayanan publik di Kelurahan X* (Skripsi, Universitas Hasanuddin).

[5] Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi. (2022). *Laporan hasil evaluasi implementasi e-government di Indonesia*. Jakarta: KemenPAN-RB.

[6] Mulyadi. (2014). *Sistem pengendalian internal*. Jakarta: Salemba Empat.

[7] Pramuditha, R., Muhafidin, D., Sumaryana, A., & Susanti, E. (2024). Exploring the impacts of e-government service quality on citizen satisfaction and trust: Evidence from population administration services. *Journal of Logistics, Informatics and Service Science*,11(8), 283–302.

[8] Putra, A. (2022). Pengaruh penerapan e-government terhadap kualitas pelayanan publik di instansi pemerintah daerah. *Jurnal Ilmu Administrasi Publik*, 10(2), 123–132.

[9] Riyanto, A. (2020). E-government dan pengendalian internal: Studi kasus di pemerintah daerah. *Jurnal Ilmu Administrasi dan Kebijakan Publik*, 7(1), 75–90.

[10] Robbins, S. P., & Coulter, M. (2016). *Management* (13th ed.). Pearson.