

Government Integrated Financial Management Information System (GIFMIS) and Corruption in the Procurement System in Nigeria

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Abstract: This study examines the impact of the Government Integrated Financial Management Information System (GIFMIS) on capital expenditure management in Nigeria, focusing on its role in addressing corruption within the procurement system. The specific objectives include assessing variations between budgeted and actual expenditures in the administrative, economic, and social sectors pre- and post-GIFMIS implementation. Utilizing an *ex-post facto* research design, secondary data from the annual reports of the Accountant-General of the Federation (2001–2022) were analyzed. The period was divided into pre-GIFMIS (2001–2011) and post-GIFMIS (2012–2022) phases, enabling a comparative assessment of the system's impact across the three sectors. Paired t-test analysis, integrated with regression techniques, was used to account for temporal fluctuations and sector-specific factors. Findings revealed that the pre-GIFMIS era exhibited no statistically significant variations between budgeted and actual expenditures in all sectors, with the administrative sector showing a mean difference of $X_{ii}=1.15138$ ($p>0.05$, $t=21.244$), the economic sector $X_{ii}=4.18820$ ($p>0.05$, $t=3.313$), and the social sector $X_{ii}=0.18947$ ($p>0.05$, $t=2.278$). Conversely, the post-GIFMIS era demonstrated significant variations across all sectors: the administrative sector recorded $X_{ii}=3.12325$ ($p<0.05$, $t=26.833$), the economic sector $X_{ii}=0.84540$ ($p<0.05$, $t=1.598$), and the social sector $X_{ii}=0.05297$ ($p<0.05$, $t=0.602$). These findings suggest that GIFMIS has enhanced financial accountability and transparency, but the observed disparities show that there are issues with matching budgeted and actual spending. Therefore, it can be concluded that GIFMIS has been instrumental in changing the face of financial management in the country especially with the post implementation period revealing a lot of improvements in the areas of transparency and accountability. However, the differences between the budgeted and actual expenses indicate that there is a need for further enhancement in the use of the system. In order to overcome these challenges, the government should enhance the budget planning, monitoring and implementation in all sectors. Continued training of personnel and the incorporation of performance evaluation mechanisms will also improve GIFMIS's efficiency in the fight against corruption in Nigeria's procurement process.

Keywords: GIFMIS, Capital Expenditure and Procurement System

Introduction

Corruption has been a major issue in Nigeria's public procurement system, which has eroded the principles of transparency, accountability and effective utilization of public resources. Public procurement which is estimated to be between 15-20% of Nigeria's GDP is a key factor in the stewardship of public sector resources and national development (Achua, 2011). However, vices like bid rigging and bribery and the inflation of contract costs have been estimated to have cost the nation's public sector over \$2.9 billion annually, thus slowing down the nation's economic and social development (World Bank, 2021). However, corruption and inefficiencies are still evident, and this is evident by the fact that even after the PPA was passed in 2007, there are still issues with procurement-related malpractices, which are systemic in nature (Ikechi, Ozurumba and Chinedum, 2020).

The inability of the Public Procurement Act (2007) and other policies to effectively address issues of corruption and sustainability also supports the need for more reforms. Although the Act has helped in reducing costs, it has not focused on sustainable development goals hence has not addressed most of Nigeria's developmental issues (United Nations, 2018). As Nigeria is expected to be the third most populous country in the world by 2050 and poverty rate is above 86.9 million people, it is essential to achieve sustainable development through proper management of public procurement.

To address these challenges, the Nigerian government introduced the Government Integrated Financial Management Information System (GIFMIS) in 2012 as part of its e-Government initiative aimed at improving financial management and reducing corruption in procurement processes. GIFMIS is a digital platform designed to integrate budgeting, accounting and financial reporting functions across Ministries, Departments and Agencies (MDAs), aligning Nigeria's financial management system with global standards (Ogbonna and Friday, 2015). The system facilitates real-time financial reporting and enhances budget implementation as well as promotes public accountability, thereby addressing some of the leakages that have historically plagued Nigeria's financial management processes (Balikis and Rasheed, 2023).

However, while GIFMIS has shown promise, it has not been without challenges. Limited technological capacity and stakeholder resistance including vulnerabilities in its implementation have been exploited, as evidenced by the reported misappropriation of over ₦109 billion through the system in 2022, including a specific case involving ₦1.8 billion mismanaged by a finance director (Blueprint, 2024). Such incidents call for more stringent measures and proper supervision to ensure that GIFMIS is utilized to the full in the fight against corruption and not for the promotion of more corruption.

Other complementary measures that have also received the support of Nigeria in the management of public finance include the Treasury Single Account (TSA) and the

Integrated Personnel Payroll Information System (IPPIS). While these tools aim at enhancing transparency and efficiency in the procurement systems, weaknesses in the implementation process, particularly in GIFMIS, have constrained the effectiveness of these tools in combating corruption in procurement systems. This is worrying especially in view of the fact that, as estimated by the World Bank (2021), between 20% and 60% of public procurement expenditure in developing countries is estimated to be used to finance leakages and malpractice.

Research Objectives

1. To assess the extent of variation between budgeted and actual administrative sector capital expenditure pre and post the implementation of GIFMIS.
2. To ascertain the extent of variation between budgeted and actual economic sector capital expenditure pre and post the implementation of GIFMIS.
3. To determine the extent of variation between budgeted and actual social sector capital expenditure pre and post the implementation of GIFMIS.

Materials

Alo, Nwobu, and Adegboye (2022) investigated the role of GIFMIS in the Sustainable Public Procurement (SPP) in the Nigerian public sector. The study was guided by the growing international pressure to align public procurement with the United Nations Sustainable Development Goals (UN-SDGs) and thus, research on how the public sectors in developed and developing countries can adopt sustainable procurement. The research adopted survey research method and data was collected through questionnaires administered on procurement officers in 15 federal ministries in Nigeria. The data were analyzed using a multiple regression model with the Stata statistical tool to determine the impact of various implementation variables on SPP. The study revealed that challenges have a negative and significant effect on SPP while GIFMIS has a positive and significant effect on SPP and is sustainable as a system for managing public procurement in Nigeria. The study also revealed that GIFMIS is vital for the sustainable public procurement and recommended that the government should develop a good policy and implementation strategy to address the challenges. Besides, it emphasized the need for continued efforts to fully mainstream GIFMIS in the public procurement and enhance the knowledge and capacity of the employees in the public sector on how to properly use the system. The findings of this research provide significant insights for the implementation of sustainability in public procurement and for the assessment of sustainable development. In the same vein, Daniel, Abdul-Fatawu, and John-Paul (2024) analyzed public policy implementation on public procurement in Nigeria and Ghana with particular reference to the achievement of value for money in procurement of goods, services, and works. The study focused on the major administrative issues that both countries encounter in the

process of public procurement policy implementation and the state/substate relations within the public sector. A comparative case study research design was adopted, and data was collected through interviews, documents review, and observations at the offices of procurement regulatory agencies and organizations. The findings revealed that Nigeria predominantly used the "four Es" framework that is economy, efficiency, effectiveness, and equity to ensure value for money, while Ghana primarily relied on the traditional "five rights" approach: right quantity, right quality, right price, right place, and right time. The two countries had similar problems in administration such as corruption, lack of adequate capacity among procurement personnel, and inadequate knowledge of procurement regulations. However, the study suggested that there is need to enhance cooperation between governments and civil society organizations in the fight against corruption in procurement activities. It also pointed out the importance of conducting refresher courses for the public procurement officials to improve on their skills.

Also, Ogbonna and Friday (2015) examined the effect of GIFMIS on Nigeria's economic growth. The study employed secondary data collected from the Budget Office of the Federation, the Office of the Accountant-General of the Federation, the National Bureau of Statistics and the United Nations Development Programme. The data collected were analyzed using the Statistical Package for Social Sciences (SPSS) and t-tests to compare independent and dependent variables. The study revealed that GIFMIS has enhanced Nigeria's economic growth in the areas of budgeting and budgetary systems, payroll, cash management reforms and expenditure control for MDAs. The study also showed that GIFMIS is useful in the management of government finances, the fight against fraud, provision of detailed financial information and reduction of government borrowing. The study suggested that the government extend other modules of GIFMIS to capture other areas of the national budget to enhance human capital development, investment in infrastructure, GDP, and per capita income. It pointed out that the use of GIFMIS has helped to save over ₦126 billion which could be used to finance education, health, roads and ports or to develop the economy. The study also found GIFMIS as a useful instrument in the sustainable economic development of Nigeria.

Method

Research Design

The study used an ex-post facto research design, also referred to as the post hoc research design. This approach focuses on the effect of an intervention once it has been put in place (Ernst & Jr., 2014). Ex-post facto research is appropriate in evaluating the effects of policies or programmes like the Government Integrated Financial Management Information System (GIFMIS) on the fight against corruption in the public sector

procurement system in Nigeria. The design is based on the collection of data after the event has taken place, which is particularly advantageous for the study's objectives.

Population of the Study

The population for this study was all capital expenditures disclosed in the annual reports of the Accountant-General of the Federation (OAGF) for the period 2001 to 2022 for all MDAs. This time frame was chosen based on the data that was available as presented in the OAGF annual reports.

Sample Size

The study focused on the budgeted and actual capital expenditures of three sectors reported in the OAGF annual reports: The Administrative, Economic and Social sector

The analysis was conducted over a 21-year period, divided into two phases:

Pre-GIFMIS implementation phase (2001–2011)

The post GIFMIS implementation period (2012–2022)

This segmentation made it possible to compare the impact of GIFMIS on capital expenditure in the three sectors.

Sources of Data

The study relied on secondary data which were collected solely from the annual reports of the Accountant-General of the Federation (OAGF). These reports contained details on capital expenditure in the three mentioned sectors of the Nigerian public sector procurement system for the period 2001–2022.

Method of Data Analysis

The study applied the paired t-test analysis. The paired t-test, also referred to as the dependent t-test, is a statistical test that is used to compare the means of two variables or two sets of data to see if there is a significant difference between the two (Ross & Willson, 2017). Specifically, regression analysis was integrated into the paired t-test model to account for:

Temporal fluctuations in budgeted and actual expenditures.

Time-invariant variables, such as sector size and prevailing economic conditions that could influence capital expenditures.

This approach was helpful in the following way; it helped to neutralize the effect of GIFMIS implementation on capital expenditure in the three sectors. Thus, it was deemed appropriate to use paired t-test to test hypotheses relating to differences in capital expenditure before and after the adoption of GIFMIS due to its efficiency in handling heteroscedasticity and temporal variability.

Results

Table 1. Descriptive Statistics(Pre-GIFMIS 2001-2011)

Descriptives	Actual Expenditure (lnAE)	Budgeted Expenditure (lnBE)	GIFMIS
Mean	10.97210	10.81293	1.000484
Std. Error of Mean	0.056357	0.068430	0.000000
Median	11.07063	10.72226	1.000293
Mode	10.501791	10.160851	1.000173
Std. Deviation	0.417960	0.507497	0.000647
Variance	0.175	0.258	0.000000
Skewness	0.232181	0.102131	5.747580
Std. Error of Skewness	0.322	0.322	0.322
Kurtosis	2.387282	2.690017	39.15883
Std. Error of Kurtosis	0.634	0.634	0.634
Range	1.773520	2.260502	0.004728
Maximum	11.91965	12.07328	1.004847
Minimum	10.14613	9.812779	1.000119
Sum	603.465493	594.711288	0.026600
Sum Square Deviation	9.433274	13.90788	0.000003
Jarque-Bera	1.354504	0.315821	3299.082
Probability	0.508011	0.853926	0.0000
Observations	55	55	55

Source: SPSS (v.25) and EViews (v.12) Outputs

From Table 1 above, the descriptive statistics of GIFMIS were examined to explain the variability in the dependent variables (actual and budgeted expenditures). GIFMIS's mean score is 1.000484, with a variability of 0.000647 of all the dependent variables, the mean of the actual expenditure of 10.97 is the highest, with a high variability of 0.42. This means that the Ministries, Departments, and Agencies (MDAs) of the federal government reported high on their actual expenditure. The mean of budgeted expenditure of 10.81 reports high on the indicators, with a variability of 0.51. These mean and standard deviation score show high and moderate reporting levels by the Ministries, Departments, and Agencies (MDAs) in Nigeria.

Table 2.Descriptive Statistics(Post-GIFMIS 2012-2022)

Descriptives	Actual Expenditure (lnAE)	Budgeted Expenditure (lnBE)	GIFMIS
Mean	11.14262	11.11523	2.000596
Std. Error of Mean	0.079993	0.079999	0.000000
Median	11.12894	11.19450	2.000577
Mode	10.160851	9.812779	2.000264
Std. Deviation	0.593250	0.593289	0.000280
Variance	0.352	0.352	0.000000
Skewness	0.364455	0.102332	-0.029532
Std. Error of Skewness	0.322	0.322	0.322
Kurtosis	2.583816	2.307300	1.478386
Std. Error of Kurtosis	0.634	0.634	0.634
Range	2.439935	2.517445	0.000975
Maximum	12.60079	12.33022	2.000998
Minimum	10.16085	9.812779	2.000120
Sum	612.8444	611.3374	110.0328
Sum Square Deviation	19.00503	19.02618	0.000004
Jarque-Bera	1.614526	1.191561	5.313911
Probability	0.446077	0.550017	0.070161
Observations	55	55	55

Source: SPSS (v.25) and EViews (v.12) Outputs

From Table 2 above, the descriptive statistics of GIFMIS was examined to explain the variability in the dependent variables (actual expenditure and budgeted expenditure). The mean of GIFMIS shows a score 2.000596, with a variability of 0.000287 of all the dependent variables, the mean of the actual expenditure of 11.14 is the highest, with a high variability of 0.59. This means that the Ministries, Departments, and Agencies (MDAs) of the federal government reported high on their actual expenditure. The mean of budgeted expenditure of 11.11 reports high on the indicators, with a variability of 0.59. These mean and standard deviation score show high and moderate reporting levels by the Ministries, Departments, and Agencies (MDAs) in Nigeria.

Inter-Item Correlations (Pre-GIFMIS; 2001-2011)

Table 3. shows the results of the correlation between the variables of the study for the pre-GIFMIS era (2001-2011). The results from the estimated regression show that there is a statistically significant positive correlation between actual expenditure and budgeted

expenditure ($r = 0.830013$; $p = 0.0000$). This means that as budgeted expenditure increases, then the actual expenditure also increases. No statistically significant relationship was found between budgeted expenditure and GIFMIS ($r = 0.156506$; $p = 0.2538$); and between actual expenditure and GIFMIS ($r = 0.068645$; $p = 0.6185$).

Table 3. Result of Correlation Matrix(Pre-GIFMIS 2001-2011)

Correlation t-Statistic Probability	lnAE	lnBE	GIFMIS
lnAE	1.000000 ----- -----		
lnBE	0.830013 10.83399 0.0000	1.000000 ----- -----	
GIFMIS	0.068645 0.500922 0.6185	0.156506 1.153597 0.2538	1.000000 ----- -----

Source: Eviews (v.12)

Inter-Item Correlations (Post-GIFMIS; 2012-2022)

Table 4. shows the results of the correlation between the variables of the study for the post-GIFMIS era (2012-2022). The results from the estimated regression show that there is a statistically significant positive correlation between actual expenditure and budgeted expenditure ($r = 0.796350$; $p = 0.0000$). This means that as budgeted expenditure increases, then the actual expenditure also increases. No statistically significant relationship was found between budgeted expenditure and GIFMIS ($r = -0.796504$; $p = 0.8047$); and between actual expenditure and GIFMIS ($r = -0.152001$; $p = 0.2679$).

Table 4. Result of Correlation Matrix(Post-GIFMIS – 2012-2022)

Correlation t-Statistic Probability	lnAE	lnBE	GIFMIS
lnAE	1.000000 ----- -----		
lnBE	0.796350	1.000000	

	9.585284 0.0000	----- -----	
GIFMIS	-0.152001 -1.119591 0.2679	-0.796504 -0.248468 0.8047	1.000000 ----- -----

Source: Eviews (v.12)

Test for Normality

Kolmogorov-Smirnov (K-S) test for normality was adopted. The Kolmogorov-Smirnov (K-S) test is a statistical test used to determine whether a sample comes from a specific distribution, such as a normal distribution. It compares the sample data's empirical cumulative distribution function (ECDF) to the cumulative distribution function (CDF) of the reference distribution.

Test for Normality

H_0 :The sample follows a normal distribution

H_a :The sample does not follow a normal distribution

Table 5 shows the result of normality tests for pre-GIFMIS: 2001-2011. The results represent several empirical distribution tests assessing the normality of the residuals ("RESID"). The Kolmogorov Tests show: $D^+ = 0.073848$, $p = 0.5369$; $D^- = 0.054074$, $p = 0.7165$; and Combined $D = 0.073848$, $p = 0.9150$. The high probabilities (all above 0.05) mean that we do not reject the null hypothesis (H_0). Thus, the residuals are consistent with a normal distribution. For the Kuiper Test, the $V = 0.127922$; $p = 0.8541$ shows that there is no significant deviation from normality since the probability value is high. The Cramer-von Mises (W_2) probability value of 0.9395 also supports strongly the normality of the residuals.

Table 5 Test for Normality (Pre-GIFMIS: 2001-2011)

Method	Value	Adj. value	Probability
Kolmogorov (D+)	0.073848	0.557626	0.5369
Kolmogorov (D-)	0.054074	0.408317	0.7165

Kolmogorov (D)	0.073848	0.557626	0.9150
Kuiper (V)	0.127922	0.972663	0.8541
Cramer-von Mises (W ₂)	0.039053	0.032560	0.9395
Watson (U ₂)	0.036410	0.035128	0.8675
Anderson-Darling (A ₂)	0.302175	0.302175	0.9365

Source: EViews (v.12)

The Watson (U₂) high probability value of 0.8675 and the Anderson-darling (A₂) high probability value of 0.9365 also support the null hypothesis because the residuals appear consistent with normality based on these tests. All the tests return high probabilities (greater than 0.05), meaning we fail to reject the null hypothesis of normality for the residuals. Therefore, the residuals appear to follow a normal distribution, and no significant deviation from normality is detected.

Test for Normality (Post-GIFMIS: 2012-2022)

H₀:The sample follows a normal distribution

H_a:The sample does not follow a normal distribution

Table 4.8 shows the result of normality tests for pre-GIFMIS: 2001-2011. The results represent several empirical distribution tests assessing the normality of the residuals ("RESID"). The Kolmogorov Tests show: $D^+ = 0.13909$, $p = 0.1090$; $D^- = 0.093266$, $p = 0.3709$; and Combined $D = 0.139404$, $p = 0.2170$. The high probabilities (all above 0.05) mean that we do not reject the null hypothesis (H₀). Thus, the residuals are consistent with a normal distribution. For the Kuiper Test, the $V = 0.232669$; $p = 0.0441$. The probability (0.0441) is less than 0.05, suggesting evidence against normality. The Cramer-von Mises (W₂) probability value of 0.3123 also supports the normality of the residuals.

Table 6. Test for Normality (Post-GIFMIS: 2012-2022)

Method	Value	Adj. value	Probability
Kolmogorov (D ⁺)	0.139404	1.052640	0.1090
Kolmogorov (D ⁻)	0.093266	0.704254	0.3709
Kolmogorov (D)	0.139404	1.052640	0.2178
Kuiper (V)	0.232669	1.769116	0.0441
Cramer-von Mises (W ₂)	0.179183	0.175237	0.3123
Watson (U ₂)	0.157530	0.158010	0.0885
Anderson-Darling (A ₂)	0.957169	0.957169	0.3085

Source: EViews (v.12)

The Watson (U₂) high probability value of 0.0885 is above 0.05 but marginally close, suggesting weak evidence against normality. The Anderson-darling (A₂) probability (0.3805) is well above 0.05, indicating no evidence against normality. Most of the tests (Kolmogorov-Smirnov, Cramer-von Mises, Watson, and Anderson-Darling) suggest that the null hypothesis of normality cannot be rejected since their probabilities exceed 0.05.

However, the Kuiper test indicates a significant deviation from normality ($p=0.0441$). Despite this, the overall evidence leans towards normality, though some caution may be warranted given the result from Kuiper's test.

Test of Hypotheses

Proposed model: The paired t-test model focuses on the variations between paired observations.

$$\text{Let } D_i = X_{1i} - X_{2i}$$

where:

X_{1i} : The i -th observation of the pre-implementation of GIFMIS

X_{2i} : The i -th observation of the post-implementation of GIFMIS

D_i : The difference for each pair of observations.

Statement of hypothesis One

$H_0: \mu D = 0$: There is no significant variation between budgeted and actual administrative sector capital expenditure pre-and-post-implementation of GIFMIS.

$H_a: \mu D \neq 0$: There is a significant variation between budgeted and actual administrative sector capital expenditure pre-and-post-implementation of GIFMIS.

Table 7. Test of Hypothesis One (Paired Sample T-Test)

	Pre-GIFMIS: 2001-2011 – Administration Sector				T
	Mean	Standard Deviation	Standard Error of Mean	Probability	
lnAE	11.3359	0.35728	0.10773	0.4412	-
lnBE	11.1846	0.57885	0.57885	0.3452	-
$X_{1i}(\ln AE \& \ln BE)$	1.15138	0.40349	0.12166	0.4660	21.244
Variables	Post-GIFMIS: 2012-2022 – Administration Sector				
	Mean	Standard Deviation	Standard Error of Mean	Probability	
lnAE	11.4733	0.63003	0.18996	0.0042	-
lnBE	11.3501	0.29772	0.08977	0.0000	-
$X_{2i}(\ln AE \& \ln BE)$	3.12325	0.49088	0.14800	0.0000	26.833
$D_i = X_{1i} - X_{2i}$	2.02813	0.08739	0.02634	0.0000	5.5890

Source: SPSS (v.24)

Statement of Decision Criteria

The decision criteria are to reject the null hypothesis (H_0) if the p – value of $\mu D = 0$. This implies that the means are significantly different. Do not reject the null hypothesis (H_0) if otherwise. This suggests that there is no significant variation between the means.

Based on Table 7, there was no statistically significant variation between the means of the budgeted and actual expenditures for the pre-GIFMIS era ($X_{1i} = 1.15138$; $p > 0.05$; $t = 21.244$). Instead, there was a variation between the means of the budgeted and actual administrative sector capital expenditure for the post-implementation of GIFMIS ($X_{1i} = 3.12325$; $p < 0.05$; $t = 26.833$). The t-value of 26.833 indicates the high magnitude and direction of the difference, calculated using a t-test. This means that there is a significant variation between budgeted and actual administrative sector capital expenditure for the post-implementation of GIFMIS but not for the pre-implementation of GIFMIS.

Statement of Hypothesis Two

$H_0: \mu D = 0$: There is no significant variation between budgeted and actual economic sector capital expenditure pre-and post-implementation of GIFMIS.

$H_a: \mu D \neq 0$: There is a significant variation between budgeted and actual economic sector capital expenditure pre-and post-implementation of GIFMIS.

Table 8. Test of Hypothesis Two (Paired Sample T-Test)

Variables					
	Pre-GIFMIS: 2001-2011 – Economic Sector				
	Mean	Standard Deviation	Standard Error of Mean	Probability	T
lnAE	15.1689	0.41067	0.12382	0.0000	-
lnBE	10.9807	0.48121	0.14509	0.0000	-
X ₁ i(lnAE&lnBE)	4.18820	0.18839	0.05680	0.8780	3.313
Variables	Post-GIFMIS: 2012-2022 – Economic Sector				
lnAE	12.6586	0.35991	0.10852	0.0230	-
lnBE	11.8132	0.42309	0.12757	0.0230	-
X ₂ i(lnAE&lnBE)	0.84540	0.32092	0.09676	0.0000	1.598
Di=X ₁ i–X ₂ i	3.34280	0.13253	0.03046	0.0000	1.715

Source: SPSS (v.24)

Statement of Decision Criteria

The decision criteria are to reject the null hypothesis (H_0) if the *p-value* of $\mu D = 0$. This implies that the means are significantly different. Do not reject the null hypothesis (H_0) if otherwise. This indicates that there is no significant variation between the means.

Based on the result of Table 8, there was no statistically significant variation between the means of the budgeted and actual economic sector capital expenditures for the pre-GIFMIS era ($X_{1i} = 4.18820$; $p > 0.05$; $t = 3.313$). Instead, there was a variation between the means of the budgeted and actual economic sector capital expenditure for the post-

implementation of GIFMIS($X_{1i} = 0.84540$; $p < 0.05$; $t = 1.598$). The t-value of 1.598 indicates the magnitude and direction of the difference, calculated using a t-test. This also means that there is a significant variation between budgeted and actual economic sector capital expenditure for the post-implementation of GIFMIS but not for the pre-implementation of GIFMIS.

Statement of Hypothesis Three

$H_0: \mu D = 0$: There is no significant variation between budgeted and actual social sector capital expenditure pre-and post-implementation of GIFMIS.

$H_a: \mu D \neq 0$: There is a significant variation between budgeted and actual social sector capital expenditure pre-and post-implementation of GIFMIS.

Table 9. Test of Hypothesis Three (Paired Sample T-Test)

Variables					
	Pre-GIFMIS: 2001-2011 – Social Sector				
	Mean	Standard Deviation	Standard Error of Mean	Probability	T
lnAE	10.9681	0.27170	0.08192	0.0020	-
lnBE	10.7786	0.45035	0.13578	0.0020	-
X ₁ i (lnAE&lnBE)	0.18947	0.27585	0.08317	0.4460	2.278
Variables	Post-GIFMIS: 2012-2022 – Social Sector				
lnAE	11.2527	0.44961	0.13556	0.0040	-
lnBE	11.1997	0.44321	0.13363	0.0040	-
X ₂ i(lnAE&lnBE)	0.05297	0.29208	0.08807	0.0000	0.602
Di =X ₁ i–X ₂ i	0.1365	0.01623	0.05271	0.0000	1.676

Source: SPSS (v.24)

Statement of Decision Criteria

The decision criteria are to reject the null hypothesis (H_0) if the *p-value* of $\mu D = 0$. This implies that the means are significantly different. Do not reject the null hypothesis (H_0) if otherwise. This indicates that there is no significant difference between the means.

Based on the result of Table 9, there was no statistically significant variation between the means of the budgeted and actual social sector capital expenditures for the pre-GIFMIS era ($X_{1i} = 0.18947$; $p > 0.05$; $t = 2.278$). Instead, there was a variation between the means of the budgeted and actual social sector capital expenditure for the post-implementation of GIFMIS ($X_{1i} = 0.05297$; $p < 0.05$; $t = 0.602$). The t-value of 0.602 indicates the magnitude and direction of the variation, calculated using a t-test.

Discussion of findings

The analysis reveals variations in the budgeted and actual capital expenditures across the administrative, economic, and social sectors in the pre- and post-GIFMIS eras.

For the **pre-GIFMIS era**, there was no statistically significant variation between the means of the budgeted and actual expenditures across all sectors. The administrative sector recorded a mean difference of $X_{ii}=1.15138$ ($p>0.05$, $t=21.244$), the economic sector had a mean difference of $X_{ii}=4.18820$ ($p>0.05$, $t=3.313$), and the social sector showed a mean difference of $X_{ii}=0.18947$ ($p>0.05$, $t=2.278$). In contrast, the **post-GIFMIS era** revealed statistically significant variations in the budgeted and actual expenditures across all sectors. In the administrative sector, the mean difference was $X_{ii}=3.12325$ ($p<0.05$, $t=26.833$), reflecting a high magnitude and direction of the variation. The economic sector exhibited a significant variation with a mean difference of $X_{ii}=0.84540$ ($p<0.05$, $t=1.598$), while the social sector recorded a mean difference of $X_{ii}=0.05297$ ($p<0.05$, $t=0.602$), highlighting a notable variation.

These findings indicate that while the pre-GIFMIS era showed no significant differences, the post-GIFMIS era demonstrated substantial variations in budgeted and actual expenditures across all sectors analyzed.

Conclusion

The analysis underscores the transformative impact of GIFMIS implementation on capital expenditure management. While the pre-GIFMIS era exhibited no significant discrepancies between budgeted and actual expenditures across the administrative, economic, and social sectors, the post-GIFMIS era revealed statistically significant variations in all sectors. This shift highlights GIFMIS's role in enhancing financial transparency and accountability, though the variations also suggest potential challenges in aligning budgeted and actual expenditures that warrant further investigation.

Recommendations

It is recommended that the government and relevant stakeholders enhance the implementation of GIFMIS by addressing factors contributing to variations in budgeted and actual expenditures. Strengthening budget planning, monitoring, and execution processes, particularly in the administrative, economic, and social sectors, can help minimize discrepancies. Additionally, regular training for personnel and the integration of performance evaluation mechanisms will ensure that GIFMIS achieves its intended objectives of improving transparency and accountability in financial management.

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