Original Article

Healthcare Policy and Development: The Effect of International Public Sector Accounting Standards (IPSAS) on the Financial Development of Federal University Teaching Hospitals.

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Abstract

Background: Globally, healthcare development faces numerous challenges; emerging economies, particularly those in Africa, appear to be worse off as a result of institutional regulatory weaknesses, infrastructural inadequacies, and system failures. These issues contribute to financial fraud, lack of efficient financial control, and weak financial reporting systems.

Objectives: The objective of the study is to determine the impact of International Public Sector Accounting Standards (IPSAS) on the financial development of the federal university teaching hospitals in Nigeria.

Method: The study adopted a descriptive research design. A sample size of 70 was used, and linear regression was employed to model and predict the relationship between the dependent variable and the independent variables.

Results: The results of the analysis indicate that International Public Sector Accounting Standards (IPSAS) have a significant positive impact on fraud prevention, with an impact of 51.8%. Additionally, the results show that IPSAS significantly positively affects financial control, with an effect of 48.2%. Finally, the analysis reveals that IPSAS has a significant positive impact on the quality of financial reporting, with an effect of 31.1%.

Conclusion: The study concludes that appropriate authorities should make a concerted effort to strengthen the adoption of IPSAS in Nigerian federal university teaching hospitals through regular reviews and staff training. Governments at all levels should ensure IPSAS is fully domesticated and properly implemented in all areas of healthcare management. [*Ethiop. J. Health Dev.* 2024; 38(4): 00-00]

Keywords: Healthcare Development, Fraud control, Fraud prevention, Nigerian, Federal University Teaching Hospital.

Introduction

IPSAS is a set of accounting standards for financial reporting in the public sector entities developed by the International Public Sector Accounting Standard Board (IPSASB). Following its adoption in 2013, Nigeria began implementing IPSAS in public sector reporting after the Federal Executive Council's 2010 adoption of IFRS and IPSAS, respectively (1, 2, 3, 4).

On the other hand, the Nigerian National Health Policy is positioned within the framework of the country's development goals, which includes the Vision 20:2020 plan aimed at improving access to high-quality, reasonably priced healthcare for all Nigerians. The National Health Sector Reform Program (2004–2007), the National Strategic Health Development Plan (2010–2015), and the annual operational plans all served to operationalize the Revised National Health Policy 2004. Since then, Nigeria has aimed to provide accessible and reasonably priced healthcare. The National Health Act of 2014 was passed at a favorable moment, making this new health policy appropriate (timely and relevant) (5, 6).

Globally healthcare policies provide a rapid pathway for healthcare improvement. However, the gap in terms of policy development continues to widen especially between high-income countries and the low- and medium-income countries. Africa appears to be the worst hit due to political instability, and policy inconsistency. However, empirical data suggest that Nigeria is still struggling in this direction (7, 8, 9, 10).

One of the key challenges in public healthcare financing is system corruption, along with a lack of financial control strategies, and lack of quality financial reporting (11,12). When the proper systems are in place, access to information will be easier and more accessible. Additionally, the evaluation of performance plans will become more effective (13,14,15,16,17).

Relevant researches on the effect of IPSAS include studies on assessing its impact on IPSAS on financial reporting and public management in Greece, as well as the effects of implementation of International Public Sector Accounting Standards on Nigeria's financial reporting quality (18,19). It appears that past studies on IPSAS have not addressed the issues around healthcare policy and its impact on the financial development of federal university teaching hospitals in Nigeria.

Methodology

Study Area

The study was conducted in Nigeria, which has a population of 200 million. Nigeria operates a three-tier health care system, with teaching hospitals

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representing the third-tier/ tertiary health management system. These federal teaching hospitals serve as referral and self-accounting units supervised by the Nigerian Federal Ministry of Health located in Abuja, the capital of Nigeria. The study selected at least two federal university teaching hospitals from each of the six geopolitical zones of Nigeria.

Study Design

The study aims to determine the impact of IPSAS on fraud prevention, financial control, and quality of financial reporting in the federal university teaching hospitals in Nigeria.

This study adopted a survey research design and employed quantitative research via a Likert Scale to gather measurable data for analysis.

The units studied within the hospitals include accountants at the payroll unit (PU), the revenue unit (RU), the internal audit unit (IA), and the final account unit (FA). These units are responsible for implementing International Public Sector Accounting Standards (IPSAS) in the hospitals. The target participants are made up of individuals who have put not less than six years in their jobs and also have been in the services of the hospital since IPSAS was finally adopted in Nigeria.

The researchers traveled to administer and collect back completed questionnaires physically and were assisted by other research assistants mostly members of the academia who were engaged as volunteers to assist the team, especially in northern Nigeria which the researchers could not reach as a result of distance and other security challenges. The study used linear regression analysis to predict the linear relationship between the dependent variables and the independent variable, accordingly.

Study Population and Sampling

The population of the study stood at 85. The sample size was determined using the Taro Yamane formula for sample size determination at a 5% error margin. The calculation is as follows,

$n = N/(1+Ne^2)$

Were,

n = estimated simple size

N = population of the study

e = Margin of error (usually 5% or 0.05)

Substituting the values,

$n = 85/ [1+85(0.05)^2]$

Therefore, $n \approx 71$ (or 70 to the nearest ten).

A minimum sample size of 70 was used in this study.

Data Collection Instruments

The data were collected through a questionnaire. To ensure standardization and reliability, questionnaires were administered to all participants, they were asked precisely the same questions in an identical format and responses were recorded and scored in a specific, consistent manner.

Table 1: **The Classification of Completed and Returned Questionnaires**

Name of Federal Teaching Hospital studied		(PU)	(RU)	(IA)	(FA)
Total	Returned	25	13	22	10
1University College Hospital Ibadan		2(8%)	1(7.65%)	2(9%)	1(10%)
2Lagos University Teaching Hospital		2(8%)	1(7.65%)	2(9%)	0(0%)
3 University of Abuja Teaching Hospital		1(4%)	1(7.65%)	2(9%)	2(20%)
4JosUniversityTeachingHospital		1(4%)	0(0%)	1(4.5%)	0(0%)
5 University of Nigeria Teaching Hospital		3(12%)	3(23%)	3(13.5%)	2(20%)
6Alex Ekwueme Federal University Teaching Hospital		3(12%)	3(23%)	4(18%)	2(20%)
7 University of Benin Teaching Hospital		2(8%)	1(7.65%)	2(9%)	1(10%)
8 University of Calabar Teaching Hospital		2(8%)	1(7.65%)	2(9%)	1(10%)
9AminoKanoTeaching Hospital Kano		1(4%)	0(0%)	0(0%)	0(0%)
10Ahmadu Bello University Teaching Hospital Zaria		1(4%)	0(0%)	0(0%)	0(0%)
11AbubakarTafawa Balewa University Teaching		2(8%)	0(0%)	0(0%)	0(0%)
12National Hospital Abuja		2(8%)	1(7.65%)	2(9%)	0(0%)
13University of Port Harcourt Teaching Hospital		3(12%)	1(7.65%)	2(9%)	1(10%)

Source: Field survey, 2024

Table 1 above shows the total of completed and returned questionnaires from 13 federal teaching hospitals. The numbers represent the number of questionnaires returned by the different units including percentages. Where PU = Payroll Unit, RU= Revenue Unit, IA = Internal Audit and FA = Final Account.

Model Specifications and Data Analysis

Model 1: IPSAS and Fraud Prevention in the Nigerian Federal University Teaching Hospitals
FP = f(IP)
The mathematical form of the model can be expressed as,
$FP = \mathfrak{A}_0 + \mathfrak{A}_{1ti\text{-}j}IP + \varepsilon$
Where, IP = IPSAS, FP = fraud prevention, $\mathfrak{A}_0$ = Regression constant, $\mathfrak{A}_{1ti\text{-}j}$ = Host of variables representing IPSAS as captured in the Questionnaire, ε = Error term or regression residuals.

Model 2: IPSAS and Financial Control in the Nigerian Federal University Teaching Hospitals
FC = f(IP)
The mathematical form of the model can be expressed as,
$FC = \beta_0 + \beta_{1ti\text{-}j}IP + \varepsilon$
Where, IP = IPSAS, FC = Financial Control, β_0 = Regression constant, $\beta_{1ti\text{-}j}$ = Host of variables representing IPSAS as captured in the Questionnaire, ε = Error term or regression residuals.

Model 3: IPSAS and Quality of Financial Reporting in the Nigerian Federal University Teaching Hospitals
QFR = f(IP)
The mathematical form of the model can be expressed as,
$QFR = \Sigma_0 + \Sigma_{1ti\text{-}j}IP + \varepsilon$
Where, IP = IPSAS, QFR = Quality of Financial Reporting, Σ_0 = Regression constant, $\Sigma_{1ti\text{-}j}$ = Host of variables representing IPSAS as captured in the Questionnaire, ε = Error term or regression residuals.

In the analysis, the study used descriptive statistics, and regression model was used analysis via E-View. Model 1 addresses Objective 1, model 2 addresses Objective 2, and Model 3 addresses Objective 3. The Endogenous variables are Fraud prevention, financial control, and quality of financial reporting for objectives 1,2 and 3 respectively. The independent (Exogenous) variable is IPSAS for objectives 1,2 and 3. We controlled the confounders through randomization and restriction. We ensured that the chosen sample was representative of the population; and that there was a linear relationship between the independent variables and the dependent variable. All variables are normally distributed.

Results
Effect of IPSAS on Fraud Prevent
Model 1: IPSAS and Fraud Prevention
Fraud Prevention = f(IPSAS)
The mathematical form of the model can be expressed as,
$\text{Fraud Prevention} = \mathfrak{A}_0 + \mathfrak{A}_{1ti\text{-}j}IPSAS + \varepsilon$

Table 2: **Dependent Variable: FRAUD PREVENTION**
Method: Least Squares (Gauss-Newton / Marquardt steps)
Sample: 70
Included observations: 70
FRAUDPREVENTION=C(1)+C(2)*IPSAS
R = 0.921

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.793977	1.396713	-0.568461	0.0016
C(2)	5.179771	0.026604	19.47006	0.0000

R-squared	0.847903	Mean dependent var	26.20000
Adjusted R-squared	0.845666	S.D. dependent var	3.601932
S.E. of regression	1.415031	Akaike info criterion	3.560335
Sum squared resid	136.1572	Schwarz criterion	3.624577
Log-likelihood	-122.6117	Hannan-Quinn criter.	3.585853
F-statistic	379.0832	Durbin-Watson stat	2.155734
Prob(F-statistic)	0.000000		

Source: Analysis Output 2024.

The regression equation in Table 2 above is given below: -

Fraud Prevention = α_0 + α_{1ti-j}IPSAS + ε

$F_{raud}P_{revention}$ = α_0 + $\alpha_{1ti-j}I_{PSAS}$ + ε Hence the model

$F_{raud}P_{revention}$ = 7.9 + 51.8I_{PSAS} + *1.42*

The above model is a linear regression model that defines the effect of IPSAS on fraud prevention. According to the analysis, an IPSAS score of 51.8 with a significant value of 0.000 impacts fraud prevention. This indicates that IPSAS has a 51.8% effect on fraud prevention. β_0 = 7.9 is the overall constant with a significant value of 0.002 < 0.05, indicating that the constant is statistically significant, the constant that defines environmental unseen circumstances is significant. The unseen circumstance is defined to be 7.9% in the model and is significantly small.

The value R = 0.921 with p-value 0.000<0.05 and this value lies between $0.5 \leq R < 1$ indicating a strong positive linear correlation between fraud prevention and IPSAS. The value of the coefficient of determination R-squared is 0.848, this value lies between $0.5 \leq R^2 < 1$ indicating that in the model, the exogenous variable: IPSAS rightly explains its impact on the endogenous variable: Fraud prevention. So, the effect of IPSAS on fraud prevention is 51.8 %, and IPSAS has a strong positive influence on fraud prevention.

Therefore, we reject the null hypothesis, accept the alternative hypothesis, and conclude that IPSAS has impacted positively on fraud prevention in the federal university teaching hospitals in Nigeria.

Effect of IPSAS on Financial Control
Model 2: IPSAS and Financial Control
Financial Control = f(IPSAS)
The mathematical form of the model can be expressed as,
Financial Control = β_0 + β_{1ti-j}IPSAS + ε

Table 3: **Dependent Variable: FINANCIALCONTROL**
Method: Least Squares (Gauss-Newton / Marquardt steps)
Sample: 70
Included observations: 70
FINANCIALCONTROL=C(1)+C(2)*IPSAS
R = 0.9107

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.793977	1.396713	0.568461	0.0016
C(2)	4.820230	0.026604	18.11863	0.0000
R-squared	0.828406	Mean dependent var		25.91429
Adjusted R-squared	0.825883	S.D. dependent var		3.391134
S.E. of regression	1.415031	Akaike info criterion		3.560335
Sum squared resid	136.1572	Schwarz criterion		3.624577
Log likelihood	-122.6117	Hannan-Quinn criter.		3.585853
F-statistic	328.2848	Durbin-Watson stat		2.155734
Prob(F-statistic)	0.000000			

Source: Analysis Output 2024.

The regression equation in table 3 is given below: -

Financial Control = β_0 + β_{1ti-j}IPSAS + ε

$F_{inancial}C_{ontrol}$ = β_0 + $\beta_{1ti-j}I_{PSAS}$ + ε Hence the model

$F_{raud}P_{revention}$ = 7.9 + 48.2I_{PSAS} + *1.42*

The above model is a linear regression model that defines the effect of IPSAS on financial control. According to the analysis, 48.2 IPSAS with a significant value of 0.000 impacts financial control. This indicates that IPSAS has a 48.2% influence on financial control. β_0 = 7.9 is the overall constant with a significant value of 0.002 < 0.05, indicating that the constant is significant, the constant that defines environmental unseen circumstances is significant. The unseen circumstance is defined to be 7.9% in the model and is significantly small.

The value R = 0.911 with p-value 0.000<0.05 and this value lies between $0.5 \leq R < 1$ indicating a strong positive linear core-relationship between financial control and IPSAS. The value of the coefficient of determination R-squared is 0.828, this value lies between $0.5 \leq R^2 < 1$ indicating that in the model, the exogenous variable: IPSAS rightly explains its impacts on the endogenous variable: Financial Control. So, the effect of IPSAS on financial control is 48.2 %, and IPSAS has a strong positive influence on financial control.

Therefore, we reject the null hypothesis, accept the alternative hypothesis, and conclude that IPSAS has impacted positively on financial control in the federal university teaching hospitals in Nigeria.

Effect of IPSAS on Quality of Financial Reporting

Model 3: IPSAS and Quality of Financial Reporting

Quality of Financial Reporting = f(IPSAS)

The mathematical form of the model can be expressed as,

Quality of Financial Reporting = $\Sigma_0 + \Sigma_{1ti\text{-}j}$**IPSAS** + ε

Table 4**: Dependent Variable: FINANCIAL REPORTING**
Method: Least Squares (Gauss-Newton / Marquardt steps)
Sample: 70
Included observations: 70
FINANCIALREPORTING=C(1)+C(2)*IPSAS
R = 0.7169

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.838787	3.129036	3.144351	0.0025
C(2)	3.109323	0.059600	5.217003	0.0000
R-squared	0.514943	Mean dependent var		26.04286
Adjusted R-squared	0.475340	S.D. dependent var		3.723936
S.E. of regression	3.170073	Akaike info criterion		5.173542
Sum squared resid	683.3567	Schwarz criterion		5.237784
Log likelihood	-179.0740	Hannan-Quinn criter.		5.199060
F-statistic	27.21712	Durbin-Watson stat		2.553487
Prob(F-statistic)	0.000002			

Source: Analysis Output 2024.

The regression equation in Table 4 is given below: -

Quality of Financial Reporting = $\Sigma_0 + \Sigma_{1ti\text{-}j}$**IPSAS** + ε

$\mathbf{F_{inancial}R_{eporting}} = \Sigma_0 + \Sigma_{1ti\text{-}j}$**IPSAS** + ε **Hence the model**

$\mathbf{F_{inancial}R_{eporting}} = 8.3 + 31.1\mathbf{I_{PSAS}} + 3.2$

The above model is a linear regression model that defines the effect of IPSAS on financial reporting. According to the analysis, 31.1 IPSAS with a significant value of 0.000 impacts on financial reporting. This indicates that IPSAS has a 31.1% effect on financial reporting. $\beta_0 = 8.3$ is the overall constant with a significant value of 0.003 < 0.05, indicating that the constant is significant, the constant that defined environmental unseen circumstance is significant. The unseen circumstance is defined to be 8.3% in the model and is significantly small.

The value R = 0.717 with p-value 0.000<0.05 and this value lies between $0.5 \leq R < 1$ indicating a strong positive linear core-relationship between financial reporting and IPSAS. The value of the coefficient of determination R-squared is 0.514, this value lies between $0.5 \leq R^2 < 1$ indicating that in the model, the exogenous variable: IPSAS rightly explains its impact on the endogenous variable: Financial Reporting. So, the effect of IPSAS on financial reporting is 31.1%, and IPSAS has a strong positive influence on financial reporting.

Therefore, we reject the null hypothesis, accept the alternative hypothesis, and conclude that IPSAS has impacted positively on financial reporting in the federal university teaching hospitals in Nigeria.

Discussion

From the results of the analyses in Tables 2-4, it is evident that IPSAS has a strong and positive impact on fraud prevention, financial control, and Quality of financial reporting in federal university teaching hospitals in Nigeria. The coefficient (R) which is 0.921, 0.911, and 0.717 of objectives 1-3 respectively are clear demonstrates that various groups of studies appreciate the impact of IPSAS towards repositioning the financial policies of healthcare management in Nigeria. Specifically, the study has determined that

IPSAS has a strong and positive impact on fraud prevention, financial control, and quality of financial reporting. This is in line with previous studies done outside the healthcare sectors by Ogbuagu & Onuora, Tawiah, and Efuntade, Lalani et al, Gajadien et al, Tormusa & Idom on the impact of IPSAS (1,2,3, 20,21).

Financial experts in the healthcare sector must ensure the effective implementation of IPSAS in their daily administration of healthcare operations . Adequate financial control measures should be put in place by experts in line with the prescriptions of IPSAS for the development of the healthcare sector in Nigeria. Regular monitoring of financial policies will ensure progressive healthcare development. Healthcare financial budgets should follow due process. The two-way concept of responsibility and accountability will guarantee financial control and by extension healthcare development, as shown by this study.

Conclusion:

IPSAS has a strong and positive effect on fraud prevention, financial control, and Quality of financial reporting. Therefore, the study recommends that the appropriate authorities make a concerted effort to strengthen the adoption of IPSAS in the federal teaching hospitals of Nigeria. Sub-national governments should also make sure that IPSAS is fully domesticated and properly implemented in all areas of healthcare management in all of their different states, provinces, and regions.

Declaration of Competing Interest: The authors declare no conflict of interest to this work.

Ethical Clearance

Not applicable

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