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Capital Budgeting and Health Sector Performance in South West Nigeria

Olurankinse, Felix[1]
Awogbemi, Ola Emmanuel[2*]

[1,2]*Accounting Department, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria.*
[1]*Email: olurankinsefelix8@gmail.com*
Tel: 08033818613
[2]*Email: emmanuelola84@gmail.com*
Tel: 07030496728

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(Corresponding Author)*

Abstract

This study examined the relationship between budgeted capital and health sector performance in South West Nigeria. The study adopted statistical tools to analyse the data that were sourced from the approved budget estimates of the six South Western States. The descriptive statistics showed that on an average level, all the selected capital expenditures contributed approximately 99.9% to their capital budgetary allocations. Jarque-Bera test statistics reveals that capital budgetary allocation and all other variables were normally distributed. The covariance analysis showed that all the variables were significant with a positive association with capital budgetary allocation. Based on the findings, the study concludes that there is poor allocation of budget for health sector and water resources, while expenditure on environmental sanitation was significant at 5%. The study recommends that government should increase the intervention budgetary allocation to health sector for general well-being of citizens.

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1. Introduction

Many developing countries, such as Nigeria, are undergoing reforms to improve governance by implementing new institutional and technical systems aimed at making governments more transparent and accountable to their citizens. Governments are pushing change in governance structures to rethink the interaction between governments and their populations through these changes (Schaeffer & Yilmaz, 2008). The success of these reorganizations is contingent on the existence of sound public financial systems at both the national and local levels, which ensure that projects are completed within the annual budgetary constraints (Kąsek & Webber, 2009). However, the benefits of bringing public services closer to people are likely to be negated by weak or non-existent public financial management functions and institutions (Ahmad, Albino-War, & Singh, 2006).The annual budget is a sensible place to focus reform efforts because it is a fundamental financial management tool for governments.

Budgeting is a set of activities that connect policy (people's preferences and needs) with financial planning (budget) and budget implementation (service delivery, operations). Budgeting is regarded as an important aspect of an organization; it can be viewed as the establishment's lifeline (blood) because it deals with the distribution of limited resources to various demands. Budgeting ensures that an organization's resources are used effectively and efficiently by allowing for an assessment of the budget's link to the actual output resulting from resource use (Faleti, Faleti, & Ojeleke, 2014). Without budgeting, it is impossible to assess the efficacy and efficiency of resource performance in relation to their usage. A budget is a precise financial plan that forecasts future inflows and outflows. It's a financial forecast of what's likely to happen in the future. It's also a detailed financial plan that defines future expectations and actions in terms of obtaining and using resources (Hamid, 2012).

On the other hand, performance can be defined as the practice of analyzing the outcome of a certain process or procedure and then adjusting the process or method to maximize output, efficiency, or effectiveness of the practice or procedure. Individual performance, such as that of an athlete, or corporate performance, such as that of a racing team, a commercial organization, or even livestock farming production, might benefit from institutional performance theory (Mrongo, Iravo, & Nyagechi, 2016).

Project performance is the evaluation and measurement of the actual output of project execution compared to the capital allocation for such projects in the annual budget. The majority of projects fail, yet sponsoring organizations continue to waste money when there are approaches, resources, and strategies available to assist them (Mrongo et al., 2016). Enhancing Project Performance improves project completion by stepping away from the hypothetical and into a brave new field of advanced project management experiences and learning (Mrongo et al., 2016).

In the global scene, accountability has been a serious problem for the system of governance, and Nigeria is no exception (Bouchat, 2013). Huge sums of money, in the billions and trillions of dollars, have been reported in the press and tossed around as capital allocation in the annual budget in recent years, with an upward trend as the years pass (Okeowo, Uche, & Olaleye, 2020). Every year, the amount of paper money available for capital projects grows, but residents are left in a state of awe and wonder as they try to find answers to pressing questions like, "What happens to the money? What was it used for? Where is the location of the project? What benefit has it brought to the residents in the neighborhood?" and so forth (Mrongo et al., 2016). Developmental activities have dwindled in recent years, making the democratic dividend inaccessible to individuals at the grassroots of the society (Olurankinse, 2011). To attain the stated goal of government, instruments for measuring the performance of government developmental efforts must be put in place. Budgeting for developmental activities is an excellent instrument for accomplishing this, as it allows actual developmental activities to be compared to past estimates (Hamid, 2012).

Most of the literature reviewed (Abu & Usman, 2010; Gukat & Ogboru, 2017) generalized their scope on capital expenditure and economic growth, while some of the reviewed literature focused on Nigeria as their scope, Obi and Obi (2014) that investigated the impact of government expenditure on education and also (Babatunde, 2018) examined government spending on infrastructure and economic growth in Nigeria, however this study concentrated on capital expenditure allocation on health sector intervention projects in the South Western States of Nigeria. Against the back drop of the above, the following research question is addressed: What is the effect of health sector intervention budgetary allocation on project performance in South West Nigeria? The broad objective of the study is to examine the relationship between capital budget and health sector performance in Southwest Nigeria**.** The specific objective is to examine the relationship between health sector intervention budgetary allocation and project performance in South West Nigeria. The hypothesis developed in line with the objective of the study was stated as Ho: There is no significant relationship between health sector intervention budgetary allocation and project performance in South West Nigeria. The scope of the study covers the period of ten (10) years from 2011 to 2020.

2. Literature Review

2.1. Conceptual Review

A. Capital Budget

Budgets are a precise financial plan for the future. Budgets are created to achieve specific goals, such as planning policies for a specific period of time, coordinating all functions of an organization, enabling performance evaluation and control, controlling activities by clearly defining outputs, inputs, and expenditures for each program, activity, or department, providing a formal way of translating goals into specific plans, and serving as a medium of communication for organizations plans, programs and activities, to reduces fire brigade approaches to decision making, to reduces the problem of uncertainty about organizational objectives, as a way of motivating managers to achieve the targets set for their units, as a benchmark for controlling ongoing operations, to help develop a team spirit among personnel, to bring about efficiency and improvement in the working of the organization, and so on (Hamid, 2012). A fund dedicated to financing fixed and long-term assets is referred to as capital (that is, expenditures on assets that can outlive twelve calendar months) As a result, capital budget is the planning of expenditures that generate cash flows/benefits that are projected to last longer than a year (Olurankinse, 2011).

B. Capital Expenditure Budget

A capital expenditure budget is a formal plan that states the amounts and timing of fixed asset purchases by an organization. This budget is part of the annual budget used by a firm, which is intended to organize activities for the upcoming year. Normally, a capital expenditure is one that will benefit over a longer period of time, such as more than a year.

C. Project

A project is defined as a planned endeavor, usually with a specific goal and accomplished in several steps or stages. Projects constitute a meeting place for different stakeholders such as project owners, financiers, contractors, users, opponents and public authorities. These can have shared or conflicting interests – often a combination of both. Much of media's discussion of projects is limited to the implementation of the project itself seen in a short-term perspective, notably with regard to delays and expenditures over budget. These aspects can easily be measured and are usually the first criteria against which the project can be assessed. The effects of the project and whether it attains its goal can only be verified at a later stage (Samset, 2010).

D. *Project Performance*

Project success has been linked to project performance, which is also linked to project objectives (Chan & Chan, 2004). The success of a project has been measured in a variety of ways. The following five dimensions were used by Dayananda (2011) to determine project success: Meeting design objectives, end-user benefit/advantage, evolving organization benefit/advantage, defence and national infrastructure benefit/advantage, overall success (a combined measure for project success). Project performance methods, for example, are used to make information available to management so that they can regulate the project.

E. *Health Sector Intervention Projects*

These are capital projects that are focused on the health sector, and are undertaken by the government. These initiatives strive to improve health-care facilities and services. Construction of health facilities, drug procurement, and medical laboratory equipment are among them.

2.2. Theoretical review

The theory reviewed for this study is Fiscal illusion theory. The theory originated from the work of Puviani (1903) (as cited in Mourao (2008)) and with additional impetus from Buchanan (1967). Fiscal illusion is about the misperception of fiscal parameters. According to Oates (1975) fiscal illusion implies persistent views and biases about public budgetary decisions in any direction based on imperfect information. Afonso (2014) argues that the benefits of government programmes appear to be remote and unrecognised by citizens, while citizens feel more directly the impact of sources of financing the budget, such as taxes. The essence of the theory is to expose the fact that sometimes the real programme of government is concealed to accommodate unnecessary spending.

2.3. Empirical Review

Bendoly, Thomas, and Capra (2010) used data from many levels of analysis to better understand multilevel interdependencies in project management settings from the standpoint of social aspects. The authors examine the importance of individual behaviour in project dynamics and performance, offering crucial insights into project team members' and project managers' actions. Larger projects having longer durations, according to Gefen, Gefen, and Carmel (2016), are more likely to succeed since they are meant to be minutely detailed, with a higher likelihood of being understood correctly and estimated more precisely. Unexpected challenges, such as misread specifications, technical difficulties, inconclusive testing, and a slew of other issues, are all too typical in software development. Longer projects provide the team more time to deal with these unforeseen issues, reducing the impact on costs and timeliness. In the same vein, Liu, Xia, Zhang, Pan, and Zhang (2016) concluded that in crowdsourcing projects, the complexity risk associated with larger projects can be easily mitigated because crowdsourcing can recruit a group of trained individuals to accomplish the project tasks.

Babatunde (2018) investigated Nigerian government infrastructure spending and economic growth. The research problem is to look into government infrastructure spending in Nigeria and how it affects economic growth. For the study, he employed both primary and secondary data. Descriptive statistics were used to analyze the data. The findings show that government spending on education and health infrastructure has a direct impact on economic growth at the 1% and 5% significance levels, respectively. In the model, co-integration is displayed. It demonstrates that the dependent variable and its explanatory variables have a long-term relationship.

Using a sequential testing technique, Mahdavi and Westerlund (2017) discovered that spending on highways, sanitation, utilities, and education were considerably more convergent (narrowing in expenditure gaps over time) than spending on health and hospitals, police and fire protection, and public welfare. The research is of the sort that looks at the spatial distribution of government spending.

3. Methodology

The research was conducted using an ex-post facto research design. The target population of the study comprised of the six states in south west Nigeria, which are: Ondo State, Ekiti State, Lagos State, Ogun State, Oyo State, and Osun State. Data was gathered from secondary sources, using approved budget estimates for the years 2011 to 2020. The annual reports estimates were taken from the statistics bulletins of the various states' ministries of finance. The sample size was made up of all the States in Southwestern Nigeria that have their data available for the ten-year period under consideration using Purposive Sampling Technique.

The study adopts Olurankinse (2012) model with modification. The basic model for Olurankinse (2012) is given below as;

$$PRO_{ni} = f(CBA_{ni}) \quad (1)$$

Where;
PRO = Particular capital project value observed.
CBA = Capital Budget Allocation on the particular project.
n = period (1999 to 2010).
i = individual local government.

In order to capture the objective of the study, Olurankinse (2012) model is extended with modification. Therefore, the modified model is given as

$$CBA = f(HEALTH, EXWR, ENVIR) \quad (2)$$

Where; *HEALTH* = Expenditure on health at state level.
EWR = Expenditure on water resources.
ENVIR = Expenditure on environmental sanitation sewage and drainage.

In the Equation 1 above, F Olurankinse (2012) ignored the important role play by both water resources and environmental sanitation sewage and drainage on individual's health status. For instance, a portable water couple with a hygiene environment improve health status. Therefore, the model is re-specified and shown in Equation 2.

Where the econometric form of Equation 2 becomes.

Equation 3 presents the econometric relationship between the dependent and independent variables.

$$CBA = \partial_o + \partial_1 HEALTH + \partial_2 EXWR + \partial_3 ENVIR + \mu_t \quad (3)$$

The related *a priori* expectations are given below:

Table 1 presents the a-priori expectation of the relationship between the dependent and independent variables.

Table 1. The a-priori expectation.

Variable	Expected Sign
$\delta_{1,}$	Positive (+)
∂_1	Positive (+)
∂_2	Positive (+)
∂_3	Positive (+)

4. Data Analysis and Discussion of Findings

The study examined the relationship between capital expenditure and project performance in south western Nigeria. To achieve the set objectives of the study, the following techniques were used; descriptive statistic, correlation matrix, Im-Pesaran-Shin (IPS) and Fisher ADF (Augmented Dickey-Fuller) unit root tests, Kao Residual Co-integration test for co-integration test, panel pool data, fixed effect, random effect and Hausman's test. In addition, E-view-9 package will be used to execute the stated techniques.

Table 2. Descriptive statistics.

Statistics	CBA	Health	EWR	ENVIR
Mean	139	18.1	9.84	9.68
Median	92.5	13.6	11.0	5.99
Maximum	699	56.9	25.1	51.9
Minimum	17.0	3.60	1.34	1.09
Std. Dev.	131	12.2	6.74	11.7
Skewness	2.24	1.26	-0.48	2.14
Kurtosis	8.36	3.82	2.30	6.76
Jarque-Bera	122	17.6	3.55	81.1
Probability	0.12	0.12	0.17	0.51
Sum	836	108	591	581
Sum Sq. Dev.	102	884	268	805
Observations	60	60	60	60

Table 2 shows the descriptive statistics of capital budgetary allocation (CBA), expenditure on health (*HEALTH*), expenditure on water resources (*EWR*), *and* expenditure on environmental sanitation (ENVIR). From the descriptive statistics result above capital budgetary allocation (CBA) ratio had the highest mean value (139.2698), followed by expenditure on health (*HEALTH*) (18.05175), expenditure on water resources (*EWR*)(9.842017), and expenditure on environmental sanitation (ENVIR) (9.682677) with the lowest mean value. The implication of this finding is that on an average level, all the selected capital expenditures contributed approximately 99.9% to capital budgetary allocation in the South West Nigeria.

The median value revealed that capital budgetary allocation (CBA) had the highest median value (92.52468), followed by expenditure on health (13.62947), expenditure on water resources (11.02210), and expenditure on environmental sanitation (5.996145). The implication of this is that both expenditure on water resources (*EWR*) and expenditure on environmental sanitation (ENVIR) had the highest magnitude impact on capital budgetary allocation in the South West states of Nigeria.

Furthermore, capital budgetary allocation (CBA) (699.0820) had the highest maximum value; while expenditure on water resources (*EWR*) had the lowest maximum value, having its value as (25.28080). For the minimum value, capital budgetary allocation had the highest minimum value with a value (17.04362); while

environmental sanitation (ENVIR) had the lowest minimum value (1.090230). Finally, the *Jarque-Bera* test statistics for testing whether the series is normally distributed showed that capital budgetary allocation (CBA), expenditure on health (*HEALTH)*, expenditure on water resources (*EXWR)*, *and* expenditure on environmental sanitation (ENVIR) were normally distributed. Since their corresponding *p*-values were greater than 5%.

Table 3. Covariance analysis.

Variables	CBA	HEALTH	EWR	ENVIR
CBA	1.00			
	0.77	1.00		
HEALTH	0.00			
	0.61	0.73	1.00	
EWR	0.00	0.00		
	0.86	0.83	0.63	1.00
ENVIR	0.00	0.00	0.00	

In Table 3, it was revealed that the capital budgetary allocation (CBA) was in line with the Pearson's correlation assumption that states that there must be a perfect and strong relationship between a variable and against itself (i.e. X1 against X1). The implication of this is that continuous increase in capital budgetary allocation (CBA) yearly in the South Western States is perfectly proportional to the sum of projects budgetary allocation yearly. In term of the degree of association between expenditure on health (*HEALTH)* and capital budgetary allocation (CBA), finding confirmed a strong relationship between the duo with a coefficient value of 76.5 and *p*-value less than 5%. This therefore, confirmed a direct relationship between the duo with expenditure on health having greater effect on it. In economics term, the finding implies that expenditure on health sectors and health care related services promotes project performance.

On expenditure on water resources (*EWR)*, the *p*-value was less than 0.05 with a coefficient value approximate to 61.2%, implying a high degree association. The finding confirmed that expenditure on water resources contributes to capital budgetary allocation. Hence, implies that the contribution of government in terms of provision of portable water for the citizens promotes project performance. Furthermore, a direct relationship was confirmed between expenditure on environmental sanitation (ENVIR) and capital budgetary allocation (CBA) with a high degree association with a *p*-value less than 5%. This established a positive relationship between the duo. From the correlation matrix above it was confirmed that relationship between the variables identified was strong. Hence, implies that assigned funds to environmental sanitation, drainage and other related funds influence project performance in the capital budgetary allocation.

Table 4. Panel unit root tests.

Variables	Levin, Lin & Chu		Decision	ADF - Fisher Chi-square		Decision
	LEVEL	1ST DIFF		LEVEL	1ST DIFF	
CBA	1.29	3.89		11.4	21.5	
	0.01	0.00	I(I)	0.49	0.01	I(I)
Health	3.01	--		21.3	--	
	0.00	--	I(0)	0.04	--	I(0)-
EWR	1.26	3.52		11.4	26.1	
	0.11	0.01	I(I)	0.49	0.00	I(I)
ENVIR	1.72	--		23.6	--	
	0.04	--	I(0)	0.02	--	I(0)

Note: *Stationary at 5% Critical Level (0.05): Probability Value.

Table 4 shows the Levin, Lin, and Chu (2002) and ADF - Fisher Chi-square result of test at level and test at first differences. The findings infered that expenditure on health (*HEALTH)* and expenditure on environmental sanitation (*ENVIR*) were stationary under the Levin, Lin & Chu and ADF - Fisher Chi-square; while, capital budgetary allocation (*CBA*), expenditure on water resources (*EWR)*were confirmed stationanary at first level difference.

Table 5. Panel co-integration tests.

Test	t-Statistic	Prob.
ADF	-1.61	0.04
Residual variance	354	
HAC variance	195	

The result for the Kao Residual co-integration test is presented in Table 5 shows that the p-value of ADF was less than 0.05; which implies that the null hypotheses of no co-integrating vector was rejected. This

shows that co-integrating vectors occurred among the variables of interest, since co-integrating vector could not be rejected at 5% level of significance. Therefore, the findings from the study showed a long-run relationship between capital budgetary allocation (CBA), and expenditures on health (*HEALTH)*, water resources (*EWR)*, and environmental sanitation (ENVIR).

The result revealed that expenditure on health (*HEALTH) and* water resources (*EWR)* was non-significant at 5% significant level. Statistically, this finding implies that expenditure on health (*HEALTH)* had a zero effect on capital budgetary allocation (CBA). The negative sign of government expenditure on health (GEXPH) was contrary with the *a priori* expectation. The implication of the inverse sign of expenditure on health on capital budgetary allocation may be attributed to two factors. First, there is inadequate spending by government on health care services. Also, corruption in the sector does not allow the money spent by government at each level show forth. This therefore, implies that low expenditure on health in all the six state in the South West of Nigeria on capital project was attributed to poor performance of such project at the states' level. Studies such as Nkechukwu and Okoh (2015); Loto (2011) and Sampson (2020) in Nigeria arrived at a similar conclusion that expenditure on health and water resources did not translate to project performance. Also, a study carried out by Musaba, Chilonda, and Matchaya (2013) in Malawi's country obtained a similar finding; while, studies such as Babatunde (2018); Mahdavi and Westerlund (2017); Okeke (2014) and Ude and Ekesiobi (2014) arrived at a conclusion that expenditure on health had a positive and significant effect on project performance. The result showed that the coefficients of expenditure on environmental sanitation (ENVIR) were significant at 5% with a direct effect on capital budgetary allocation (CBA). This indicated that a significant relationship existed between expenditure on environmental sanitation (ENVIR) and capital budgetary allocation (CBA). The mechanical interpretation of the result is that 1% increase in expenditure on environmental sanitation brought about 33.0% increases in capital budgetary allocation (CBA). The implication of this finding is that increase in assigned funds to environmental sanitation increase capital budget which directly promotes project performance. The direct effect of the finding was consistency with the formulated *a priori* expectation.

5. Conclusion and Recommendations

Based on the findings, the study concludes that there is poor allocation of budget for health sector which result in poor project performance because expenditure on health (*HEALTH) and* expenditure on water resources (*EWR)* was negative and non-significant. The study also concludes on the other hand that increase in projects budgetary allocation to environmental sanitation promotes project performance of the six state in the South West because expenditure on environmental sanitation (ENVIR) was significant at 5% with a direct effect on capital budgetary allocation (CBA).

The study recommends that government should increase the intervention budgetary allocation to health sector in order to promote general well-being of the citizen, as well as, ensure that the project achieve the desire result and also ensure that corruption is tackled through appraising each intervention budgetary allocation of government's parastatals regularly after approval by the legislative. Doing this, would go a long way in ameliorating or reducing the corruption that affect implementation of intervention projects budgetary allocation, which will in turn affect project performance in South West Nigeria.

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