
Debt management for sustainable infrastructure development: a systematic review

Oriloye Gabriel Lola ^{*1 A}; Micheal Abiodun Oni ^{2 A};
Olayinka Babatunde Adebogun ^{3 A}

*Corresponding author: ¹ PhD, e-mail: gabriel.oriloye@gmail.com

² PhD, e-mail onim@babcock.edu.ng

³ PhD, e-mail onim@babcock.edu.ng

^A Department of Political Science and Public Administration Babcock University, Ilishan-Remo, Nigeria

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Abstract

Public debt managers coordinate public borrowing and ensure a consistent, sustainable, and methodical debt management practice. Nigeria has been borrowing from sources that include multilateral, bilateral, and commercial lenders in a bid to fill its infrastructural gap. As of 2022, Nigeria's public debt stood at US\$101.9 billion which comprised US\$62.2 billion in domestic debt and US\$39.6 billion in external debt. However, despite the loans contracted over the years, there is an observed gap between her accumulated debt and the level of infrastructural development. The study, therefore, investigated debt management in Nigeria and its imperative for sustainable infrastructural development. The study employed a mixed-methods design. SPSS-based inferential statistics and content analysis were employed in data analysis. The study found that public debt management has no significant effect on sustainable infrastructural development in Nigeria ($\beta = 0.002$, $t(198) = 0.040$, $p > 0.05$). The study concluded that public debt management has no significant effect on sustainable infrastructural development in Nigeria. The National Assembly and the Federal Ministry of Finance should ensure that newly contracted external loans are tied to specific projects. The Federal Ministry of Finance in conjunction with the debt management office should create a special purpose vehicle for packaging domestic infrastructure bonds.

Key words: debt management, Infrastructure development, Gross domestic product, strategy.

Introduction

Globally, public debt management is central to the achievement of the government's fiscal objectives. Since loan proceeds influence the economic output of a country, efficient public debt management becomes cardinal. The achievement of fiscal policy objectives depends on a stable economic environment, efficient resource allocation, and equitable wealth redistribution. To achieve these policy objectives, the adoption of a sound public finance strategy is important. This could be in the form of unambiguous debt limits and budget deficits. Investment in public infrastructure requires a significant amount of financial resources. Hence, countries with insufficient resources borrow to support their investment in sustainable infrastructures. Therefore, public borrowing offers a reliable option to fund public deficits and other development projects.

Ota (2020) argued that investment in public infrastructure is very central to the prosperity of a nation because it is an important element that seeks to raise the productive capacity of an economy and thereby improve the general wellbeing of the citizens. According to Shehu and Aliyu (2004) countries contract sovereign loan for development reasons, which includes financing of productive investment,

higher consumption, and financing of budget deficit. Sub-Saharan Africa's public debt grew to 58% of gross domestic product (GDP) in 2020, the highest in almost two decades.

Analysis of Africa's public debt over the past two decades pinpoints three key drivers: the cumulative devaluation in exchange rates, rising interest payments, and growing deficits. Strong economic performance in some of these countries in the last decade has helped to slow down the visible growth in the debt-to-GDP ratio, but the overall growth in public debt has been much visible due to mounting interest payments.

In the 1970s, Nigeria's domestic debt was just US\$1.1 billion. It gradually accelerated to US\$8.2 billion in 1980. Following that, it soared to US\$84.1 billion in 1990 (Igberi, Odo, Anoke, and Nwachukwu, 2016). However, according to the debt management office (DMO) report, as of December 31st, 2020, the Federal Government had already accumulated over US\$32.8 billion in foreign debt and N16.5 trillion (roughly US\$54.3 billion) in domestic debt. Furthermore, increasing debt levels can limit the government's capacity to invest in more productive infrastructure, education, and public health programs. A country's economic growth can be harmed by poor debt management (Adebusola, Sheu, & Elijah, 2007).

Poor debt management has precipitated a far-reaching economic crisis in Nigeria post-independence these crises include unstable and volatile exchange rates, hyperinflation, low capital inflow, distress in productive investment in infrastructure, and adversely affecting the general wellbeing of a nation. Nigeria's public debt (both external and domestic) has piled up to the extent that a sizable amount of the country's annual budget is spent on debt servicing.

The DMO was created in 2000 to manage Nigeria's public debt and facilitates the judicious contracting of fresh loans either through a bond or direct loan applications.

The Nigerian Budget Office's medium-term 2020 expenditure report indicated that the government incurred N7.63 trillion in domestic debt from June 2015 to N44 trillion as at September 2022. This represents an increase of N36.44 trillion. On external borrowings, the government increased Nigeria's external debt from US\$7.3 billion in 2015 to US\$39.6 billion as of September 2021. The implication is that the government added US\$32.3 billion debt to its external debt portfolio during this period.

While public debt provides additional resources for the government and helps reduce its financing gap, informed Nigerians are generally worried about the mounting level of public debt vis-a-vis the poor level of infrastructural development in the country. It becomes more worrisome when considered against the unabated appetite of the government for external loans. Borrowing in itself is not a bad thing. The problem however is, the utilization of the loan proceeds.

An unchecked appetite for foreign loans is capable of plunging the economy into serious financial difficulties (Ayado, 2019). There is non-commensurate huge gap in public infrastructure to justify current binge-borrowing by the Nigerian authority.

Resulting from the foregoing, the objective of the paper was to examine the effect of public debt management on infrastructural development in Nigeria. The paper has been organized into an introduction, review of literature and hypothesis formulation, theoretical framework, methodology, and discussion of finding and conclusion.

Theoretical background

Conceptual Clarification: Public Debt Management (PDM)

In a far-reaching macroeconomic framework, prudent debt management is one of the government's cardinal responsibilities. This is because PDM authority has an inviolable responsibility to coordinate with other agencies of government to keep a consistent, sustainable, and methodical public debt management practice.

Efficient PDM culture ensures orderly repayment of public debt both interest and principal under many circumstances while ensuring the minimality of both cost and the inherent risk objectives. Public debt managers unavoidably share the government's fiscal concerns by ensuring that the government's debt level remains sustainable. A sound strategy is put in place to ensure public debt does not exceed a given level. Relevant authorities are constantly kept abreast of the fiscal effect of the financing needs of the government, the reasonable level of public debt required, and the cost implication of these needs. (Ifeanyichukwu, Hezekiah, Tochukwu and Chika, 2020).

In a study in 2002 by the IMF and the World Bank, the study contained six strategies for PDM specifically designed to assist public debt managers and policymakers around the world to enable them make sound public debt management strategies and practices. Ganiyev (2021) found that all the surveyed 18 countries had unambiguous public debt management objectives. The surveyed countries' immediate focus was the need to borrow at the lowest cost possible over both medium to long-term time basis while maintaining sustainable public sector debt.

Wolfensohn (2004) cited in Wheeler (2004) concluded that Governments around the globe face different types of difficult competing policy choices in their attempt to improve their citizens' quality of life. Generally, citizens seek to improve their quality of life. This include improvement in health, security, transportation, and other public services available to them.

Mustapha and Prizzon (2015) further reinforced the view that every country has different PDM capacity-building needs. Each country has different market constraints, regulatory policies, exchange rate regime, and implement reforms according to its needs. Country's sovereign credit rating is taken into account when developing capacity building and technical assistance in public debt management. In response to the 2008 financial crisis as well the need to consider the dynamic nature of the financial sector regulatory changes, the IMF and the World Bank (2014) revised their Guidelines for PDM with a view to ensuring continued relevance to emerging market realities.

This review was consequent to the post-2008 recession period which saw an unprecedented cross border capital flow in search of higher yields. The cross-border capital flight constituted a much higher volatility in investors' risk appetite in years after the global financial crisis. This influx caused extensive modifications in many countries' size and nature of debt portfolios. According to the world bank, this period witnessed a geometric rise in the development of the bond market majorly because of its substantial benefits. Traditionally, the government seeks to play its catalytic role by nurturing market growth. These markets include the short-term money market (for treasury bills and other short-term instruments), interbank market, and fixed-income market. The maintenance and development of these markets is an important part of government balance sheet management. Highlighting the benefit of an efficient bond market, Wheeler (2004) suggested that:

Well-developed money and bond markets permit the independent operation of monetary policy and debt management policy. Government debt managers can issue securities directly in the primary market, while the central bank can alter monetary conditions by buying and selling securities in the secondary market. (p.149)

The Nigeria debt management office was established on October 4, 2000, to coordinate the management of Nigeria's debt, which up till then was managed haphazardly by many government agencies. This uncoordinated debt management strategy led to deeply rooted inefficiencies and debt management failure that led to the debt defaults witnessed in the late 1980s and late 1990s.

Sustainable Infrastructural Development

Infrastructural development is identified as a critical key propeller for sustainable development. A vision of sustainable development is dependent on the development of sustainable infrastructures, such as public investment in public projects such as road networks, air transport, power stations, hospitals, rail network, bridges, and others (Udeh, Ugwu & Onwuka, 2016). Nkechi

& Onuora (2018) postulated that the infrastructure of a country involves the reasonably permanent and foundation capital investment of a country and private firms enable its economic activities.

These include other amenities necessary for the orderly administration of Methodical a state. borrowing enables the economy to grow at a faster rate because it enables the state to access additional resources and thereby create an enabling environment for sustainable economic development. This is perhaps the most important role of government in creating sustainable infrastructural development. Citizens' living conditions are improved when an enabling environment is created through the provision of necessary infrastructure in an economy. Most first-world economies appear to have overcome this challenge hence the ability of the economies to generate multiple opportunities for the improvement of the living standard of the citizen.

A well-utilized external borrowing increases productive investment in the infrastructure of a state. This has both short- and long-term effects. The direct implication is that it increases the internally generated revenues of a state because it stimulates economic activities whose impact is felt in the short run via improvement in the revenue of the state. The development of sustainable infrastructure is very crucial to the continued health of an economy. Akpan & Nwanseh (2013) asserted that infrastructure is the vital oil that propels the wheel of development of a country's economy. Consequently, there can be no development without the availability of a certain level of public infrastructure.

These Infrastructures include but are not limited to the following: good road networks, access bridges, stable electricity supply, and others. Hence, adequate revenue generation is important to the provision of sufficient and sustainable public infrastructural development (Nkechi & Onuora, 2018). However, for developing countries, external debt poses major challenges, particularly in the context of floating exchange rate systems to the provision of adequate public infrastructure (Uguru, 2016). This is because the maintenance and servicing of external debts ultimately require sufficient income to be able to honor matured obligations – interest and the principal. Emphasizing the need for sustainable infrastructure is not enough. Such emphasis must be accompanied by the availability of sufficient revenue. Due to the huge financial outlay required, a lot of time is needed to plan and execute them. Government projects are either financed via externally generated or internally generated revenue.

The external source of revenue to the government includes grants and aids, individual / corporate donations, public borrowing (domestic and Foreign), etc. During the oil boom, the Nigerian government depended exclusively on revenue generated from oil sales to solve most of its needs. This reliance on oil revenue changed with the instability experienced in commodities prices starting from the late 1970s to date. With the level of government borrowing since 2015, it is obvious that the oil revenue has not been sufficient in meeting Nigeria's fiscal needs. Nigeria has operated a consistently fiscal deficit since the turn of the 21st century except in 2000, 2002, 2004-2006, 2008 and 2011.

Theoretical Framework

The study adopted a debt overhang theory to explain the effect of public debt management on sustainable infrastructural development in Nigeria. The debt overhang theory gained popularity following the work of Krugman (1988) even though the theory was first propounded in 1977 by Stewart Meyer. The theory stated that sooner rather than later, a country's degree of aggregated debt may exceed the country's ability to repay. Debt overhang theory reveals a state of affairs in which a country's debt becomes excessively enormous for such a country to repay (Burhanudin, Muda, Nathan, & Arshad, (2017). Krugman (1988b) argued that there is an important difference between the revenue streams, the current and future investments, of corporations and countries.

A sovereign can on the other hand not be forced into servicing their debt or be liquidated. There are however negative effects associated with defaulting for countries. Trust is an important

aspect of lending and a country that defaults might find their future access to credit constricted. It could also find its assets in foreign countries seized. Despite the theory's relevance to the study, Douglas & Zhigou (2012) showed that debt overhang can lead to under-investment. During the public debt repayment crisis, any additional funds mobilized will be mostly used to repay the existing debt instead of embarking on new investment.

Debt overhang is usually alleviated when the borrower renegotiates with its creditor and restructure the balance sheet. Debt overhang theory is widely applied to the understanding of public debt and its implication for sustainable infrastructural development because it implies that uncontrolled borrowings lead to high public debt and can compromise the ability of the economy to generate enough resources for its repayment. Its relevance to this study lies in its ability to show the danger of growing external public debt at the expense of the overall health of the Nigerian economy

Research Hypothesis

H₁: Public debt management has no significant effect on sustainable infrastructural development in Nigeria.

Data and methods

The paper adopted a mixed-methods design. This enhanced the validity of findings, provided a diversity of views as well as illustrated quantitative findings. For the purpose of credibility of the finding, the paper further adopted the triangulation technique to obtain different but complementary data on the same problem (Creswell, 2003). The population of the study comprised officers from Debt management office-142, Central bank of Nigeria-220, and Fiscal Responsibility Commission-110 with a numerical population of 532. Multistage and stratified sampling techniques were adopted. The sample size was 228 using the Taro Yamane sample size determination formula. The justification for these three agencies was that they are responsible for contracting and managing external loans on behalf of the Nigerian state. Structured questionnaire was self-developed and validated. Interview guide was used to complement the quantitative method. The lowest and the highest values of the Cronbach's Alpha coefficients were 0.758 and 0.842. The response rate for the questionnaire was 90.9% while the interview was 9.1%. The study carried out two forms of data analysis: SPSS-based statistical (inferential) and content analyses. Inferential statistical tools such as simple and multiple regression analysis were used.

Result and Discussion

Analysis of Research Objective

Research objective one examined the effect of public debt management on sustainable infrastructural development in Nigeria.

Response rate

Two sets of data collection instruments were administered. A structured questionnaire was used as the main data collection instrument for the quantitative data while the interview guide complemented the data obtained from the survey. For the survey method, a structured questionnaire was used by the researcher to administer 108 copies of the questionnaire to the target respondents in the Debt Management Office, Central Bank of Nigeria and Fiscal Responsibility Commission. The researcher retrieved 200 copies of the administered questionnaire. Thus, the response rate was 90.9% for the survey. The copies retrieved were properly filled and returned. This feat was achieved using the techniques of 'wait and collect', 'follow up' and 'check' methods. The researcher conducted 12 in-depth interviews with top officials of selected organisation while 28 focus group discussion was held with employees of external loan units of the selected organization.

Result of the Quantitative Data (Survey-Questionnaire) Analysis

The quantitative analysis of the data and interpretation of the respondents' responses to the question on the effect of public debt management on sustainable infrastructural development in Nigeria is presented in this section.

Table 1. Analysis of the effect of public debt management on sustainable infrastructural development in Nigeria

Statements	SA (5)	A (4)	U (3)	D (2)	SD (1)	Mean SD	Remark
Management of public debt has resulted in appreciable improvement in infrastructural development	2	2	10	57	129	1.46	Strongly Disagreed
	1.0%	1.0%	6.0%	28.5%	64.5%	0.728	
A positive image is created globally on account of how Debt is being managed	0	3	21	168	8	2.10	Disagreed
	0.0%	1.5%	10.5%	84.0%	4.0%	0.444	
There is improvement in the productive sector of the economy	1	5	38	95	61	1.95	Disagreed
	0.5%	2.5%	19.5%	47.5%	30.5%	0.800	
Jobs are created from infrastructure projects funded by loans	9	13	20	72	86	1.94	Disagreed
	4.5%	6.5%	10.0%	36.0%	43.0%	1.094	
The loans are used to ensure preservation of natural habitat	17	11	23	52	97	2.00	Disagreed
	8.5%	5.5%	11.5%	26.0%	48.5%	1.262	
Loans do not militate against the growth of next generations	8	12	21	87	72	1.99	Disagreed
	4.0%	6.0%	10.5%	43.5%	36.0%	1.034	
poverty is being eliminated as the government borrows	5	12	19	55	109	1.75	Disagreed
	2.5%	6.0%	9.5%	27.5%	54.5%	1.022	
security of lives and property is guaranteed from used loans	2	20	21	85	72	1.98	Disagreed
	1.0%	10.0%	10.5%	42.5%	36.0%	0.979	
Borrowing will make the development of physical infrastructure an ongoing activity	6	10	103	41	40	2.51	Undecided
	3.0%	5.0%	51.5%	20.5%	20.0%	0.967	

Source: Field Survey Results, 2022

Table 1. shows the effect of public debt management on sustainable infrastructural development in Nigeria. It is revealed that 1.0% of the respondents strongly agreed that management of public debt has resulted in appreciable improvement in infrastructural development, 1.0% of the respondents agreed, 6.0% were undecided, 28.5% of the respondents disagreed and 64.5% of the respondents strongly disagreed.

On average, the respondents disagreed that the management of public debt has resulted in appreciable improvement in infrastructural development (Mean = 1.46, STD = 0.728). Further, 0.0% of the respondents strongly agreed that a positive image is created globally on account of how debt is being managed, 1.5% of the respondents agreed, 10.5% were undecided, 84.0% of the respondents disagreed and 4.0% of the respondents strongly disagreed.

On average, the respondents disagreed that a positive image is created globally on account of how debt is being managed (Mean = 2.10, STD = 0.444). In addition, 0.5% of the respondents strongly agreed that there is growth in the productive sector of the economy, 2.5% of the respondents agreed, 19.5% were undecided, 47.50% disagreed and of the respondents 30.5% strongly disagreed. On average, the respondents disagreed that there is growth in the productive sector of the economy (Mean = 1.95, STD = 0.800). The table reveals further that 4.5% of the respondents strongly agreed that Jobs are created from infrastructure projects funded by loans, 6.5% of the respondents agreed, 10.0% were undecided, 36.0% of the respondents disagreed and

43.0% of the respondents strongly disagreed. On average, the respondents disagreed that Jobs are created from infrastructure projects funded by loans (Mean = 1.94, STD = 1.094). Also, 8.5% of the respondents strongly agreed loans are used to ensure the preservation of natural habitats, 5.5% of the respondents agreed, 11.5% were undecided, 26.0% of the respondents disagreed and 48.5% of the respondents strongly disagreed. On average, the respondents disagreed that loans are used to ensure the preservation of natural habitat (Mean = 2.00, STD = 1.262).

From the analysis 4.0% of the respondents strongly agreed that Loans do not militate against the growth of next generations, 6.0% of the respondents agreed, 10.5% were undecided, 43.5% of the respondents disagreed while 36.0% of the respondents strongly disagreed. On average, the respondents disagreed that loans do not militate against the growth of next generations (Mean = 1.99, STD = 1.034). In addition, 2.5% of the respondents strongly agreed poverty is being eliminated through proper investment in infrastructure, 6.0% of the respondents agreed, 9.5% of the respondents were undecided 27.5% of the respondents disagree, 54.5% strongly disagree. On average, the respondents disagreed that poverty is being eliminated through proper investment in infrastructure (Mean = 2.79, STD = 1.646). The findings revealed further that 1.0% of the respondents strongly agreed that security of lives and property is guaranteed from used loans, 10.0% of the respondents agreed, 10.5% undecided, 42.5% disagree and 36.0% strongly disagreed. On average, the respondents disagreed that security of lives and property is guaranteed from used loans (Mean = 3.50, STD = 0.967).

3.0% of the respondents strongly agreed that borrowing will make the development of physical infrastructure an ongoing activity, 5.0% of the respondents agreed, 51.5% undecided, 20.5% disagree and 20.0% strongly disagreed. On average, the respondents disagreed were undecided that borrowing will make the development of physical infrastructure an ongoing activity (Mean = 2.51, STD = 0.967).

Five of the interviewees contested the claim by the government that borrowing has improved Nigeria's infrastructure. This is respondents said that Nigerians generally condemned these loans. An interviewee declared that he has published not less than three articles in national dailies in a bid to condemn the frequency with which Nigeria takes foreign loans and the long-term negative effects it has on the economy. The interviewees unanimously agreed that the Nigerian government should discontinue to borrow externally under the guise of infrastructure development as the current budgeting practice is unsustainable. An interviewee sought to know what the government did with the funds raised via the Sukuk bond it raised in 2020 to finance infrastructural projects; so which projects are they financing all the time?

The interviewees all agreed that the Nigerian government talks about accessing the international and domestic debt markets always because it seems that the economic managers recommend instead of seeking alternative ways to reduce its interest paying debt. Interviewee B accused the authority of negligence and longing for frequent borrowing. An interviewee noted that Nigeria currently spends about 25% of its budget on servicing its debt annually. An interviewee further expressed his frustration with Nigeria's government for unscrupulously comparing Nigeria with the United States of America by arguing that the USA is the most indebted nation in the known world.

However, the foolishness of such argument lies in the failure to realise that every country in the world works for the United States of America's sustained greatness. This is because every country has US dollar reserves; The United States of America owns the US dollar? Is it not America? So, we are all working for America. Invariably, the USA debt is unwittingly shouldered by other countries because the US is a currency-issuing country. So, it is inconceivable to compare the US to Nigeria. This is because Nigeria and other countries trade in American dollars. While every country works to earn more dollars; the same cannot be said of the Naira?

In summary, the mean value for the responses on the effect of public debt management on sustainable infrastructural development in Nigeria ranges from 1.46 to 2.51. These suggest that respondents generally 'disagreed' that debt management has no lasting effect on sustainable infrastructural development in Nigeria. Although some agree that infrastructural facilities built from loans may have been used to target growth in economic activities in some sectors, however in the long run Nigeria will not be able to pay back such loans or maintain.

These findings imply general acceptability as can be seen in the results. The standard deviation ranges from 0.444 to 1.643. This implies that there is still a difference in agreement on some areas. Nevertheless, the differences were explained by the result of the interview conducted. The interviewees held that infrastructural development pursued through borrowing loans may tend to endanger future generations' ability to satisfy their own needs. They remarked that the government needs to evaluate the manner debt is incurred to address the infrastructural development deficit in the country. This finding provides an answer to research question three.

Finding from the Interview

A sizeable number of the interviewees (86.4%) contested the claim by the government that borrowing has improved Nigeria's infrastructure. This is respondents said that Nigerians generally condemned these loans. An interviewee declared that he has published not less than three articles in national dailies in a bid to condemn the frequency with which Nigeria takes foreign loans and the long-term negative effects it has on the economy. The interviewees unanimously agreed that the Nigerian government should discontinue to borrow externally under the guise of infrastructure development as the current budgeting practice is unsustainable. Another interviewee sought to know what the government did with the funds raised via the Sukuk bond it raised in 2020 to finance infrastructural projects; so which projects are they financing all the time?

The interviewees all concluded that the economic managers are found of recommending taking loans for consumption purpose instead of seeking alternative ways to reduce its interest paying debt. Another interviewee accused the authority of negligence and irresponsible longing for frequent borrowing. The interviewee noted that Nigeria currently spends about 25% of its budget on servicing its debt annually.

An interviewee expressed his frustration with Nigeria's government for unscrupulously comparing Nigeria with the United States of America by arguing that the USA is the most indebted nation in the known world. However, the foolishness of such an argument lies in the failure to realize that every country in the world works for the United States of America's sustained greatness. This is because every country has US dollar reserves;

The interviewee rhetorically asked if the United States of America owns the US dollar? Is it not America? So, we are all working for America. Invariably, the USA's debt is unwittingly shouldered by other countries because the US is a currency-issuing country. So, it is inconceivable to compare the US debt situation to Nigeria. This is because Nigeria and other countries trade in American dollars. While every country works to earn more dollars; the same cannot be said of the Naira.

Summary of the Analysis of Research Objective

The mean value for the responses on the effect of public debt management on sustainable infrastructural development in Nigeria ranges from 1.46 to 2.51. These suggest that respondents generally 'disagreed' that debt management has no lasting effect on sustainable infrastructural development in Nigeria. Although some agree that infrastructural facilities built from loans may have been used to target growth in economic activities in some sectors, however in the long run Nigeria will not be able to pay back such loans or maintain. These findings imply general acceptability as can be seen in the results.

The standard deviation ranges from 0.444 to 1.643. This implies that there is still a difference in agreement on some areas. Nevertheless, the differences were explained from the result of the interview conducted. The interviewees held that infrastructural development pursued through borrowing loans may tend to endanger future generations' ability to satisfy their own needs. They remarked that the government needs to evaluate the manner debt is incurred to address the infrastructural development deficit in the country. This finding provides an answer to research question three.

Restatement of Hypothesis One

Hypothesis Testing

One hypothesis was tested at 5% significance. The decision rule is that we reject the hypothesis if $P < 0.05$

Table 2. Result of Regression of Sovereign loan contracting on sustainable infrastructural development in Nigeria

Variables	B	T	Sig	R	R2	Std. Error of the Estimate
Constant	23.867	16.104	.000	.003a	.000	3.8111
Sovereign loan contracting	.002	0.040	.968			
a. Dependent Variable: sustainable infrastructural development			F (1,199) = .002			

Source: Researcher's Field Results (2022)

Table 2 reveals the result of the simple regression test carried out to test the effect of Sovereign loans on sustainable infrastructural development in Nigeria. The result revealed that ($\beta = 0.002$, $t(198) = 0.040$, $p > 0.05$). The slope coefficient was .003. It represents the strength, amount of change and direction of the relationship between sovereign loan contracting on sustainable infrastructural development in Nigeria. The correlation coefficient reveals that there is no relationship between Sovereign loan contracting and sustainable infrastructural development in Nigeria. The findings indicated that Sovereign loan contracting does not affect sustainable infrastructural development in Nigeria. Hence, sovereign loans do not have any effect on sustainable infrastructural development in Nigeria. Thus, consideration should be given to any other way of building infrastructure.

Furthermore, the result indicated that the Sovereign loan explains 0.0% of the variations that occur in sustainable infrastructural development in Nigeria. ($R^2 = 0.000$). The result revealed that the model was statistically not significant. This was supported by the $F(1,199)$ statistics of .002 and the reported p-value (0.968) which is less than the conventional probability of 0.05 significance level ($t(198) = 0.040$, $p = 0.968$). This shows that the p-value for the analysis was reported to be more than the alpha benchmark of 0.05 thus implying that the analysis is not statistically significant. On that basis, null hypothesis two is accepted and we conclude that Sovereign loan contracting has no significant effect on sustainable infrastructural development in Nigeria.

These findings yielded an optimal regression model for statistically significant construct shown below:

$$SID = 23.867 + 0.002SLC$$

Where:

SLC = Sovereign Loan Contracting

SID = Sustainable Infrastructural Development

The model, shown above indicated a constant parameter value of 23.867, which implied that Sovereign loan when at constant zero, sustainable infrastructural development in Nigeria would be 23.867 which is positive. Furthermore, the results revealed that unit change in Sovereign loan would lead to 0.002 change or increase in Sustainable Infrastructural Development. The results revealed that Sovereign loan contracting has no significant effects on sustainable infrastructural development in Nigeria. Based on the F statistics and coefficient of determination with a p-value more than the conventional probability of 0.05, the null hypothesis (H02) was hereby accepted.

Summary of Hypothesis Testing

In this section, a hypothesis was tested using regression analysis and the table below shows the summary of the result and the decision taken.

Table 3. Summary of the Hypothesis Testing

	Hypotheses	Results	Remarks
H01:	Public debt management has no significant effect on sustainable infrastructural development in Nigeria	$\beta = 0.796$, $t (198) = 6.596$, $p > 0.05$	Accept H01 No Effect

Discussion of Finding

The discussion of the finding is based on the research objective. The study revealed that public debt management has no significant effects on sustainable infrastructural development in Nigeria. The finding of this study agrees with Otonne, Emmanuel and Asogwa, (2019c) whose study found that the Nigerian government's budget policies are unsustainable. The overall result showed that drops in revenue and a significant disparity between government revenue and fiscal spending and the needs of citizens are misaligned. Similarly, Coulibaly, Gandhi, & Senbet (2019b) highlighted that a debt crisis is imminent if urgent actions are not taken. This result corroborates their findings because efficient and strategic debt management is key to sustainable infrastructural development in Nigeria.

Areas of partial disagreement with earlier studies are in the work of Okeke and Idike (2016) who found weak relations between public debt and suitability in infrastructural development. However, areas of agreement range from the emphasis on the importance of public debt to sustainable development in infrastructure. In all, it was scholarly agreed that Nigeria should ensure that its debt is adequately hedged against adverse economic factors such as currency and interest rate risks. Furthermore, the study correlates with the findings of Abada, Ifeanyichukwu, Omeh, Odo, Abada, Chika. (2020) that revealed that the debt restructuring approach offers reprieve because of the economic non-viability of the 'white elephant projects financed with borrowed funds to generate enough income for their repayment since most of the projects are mismanaged, which often result in avoidable debt accumulation. This clearly shows that with proper planning and shrewd resource allocation, sustainable infrastructural development can be achieved. However, if resources raised through public debt instruments are not utilised properly, it would restrict economic growth and become the biggest drawback for the economy.

The finding of the study further agrees with the submission of the Debt Overhang Theory. The theory shows that sooner rather than later, a country, such as Nigeria with a high propensity for public debt may come to a stage where given her degree of aggregated external debt, may struggle or exceed her ability to repay her debt. Debt overhang reveals a situation in which a country's debt becomes excessively enormous for such a country to repay (Burhanudin, Muda, Nathan, & Arshad, 2017). Also, based on Debt Trap Diplomacy Theory, the federal government may have to adopt a superior strategy to negotiate for fixed interest payments and varied amortization

schemes, as well as pursue multi-year rescheduling rather than year-by-year rescheduling. This is to avoid a situation where the postulation of debt-trap diplomacy theorists comes to fruition like what happened in the democratic republics of Uganda and Sri Lanka where China appropriated some of the countries' important national assets. That is a situation whereby a rich country either directly or through its institutions purposely lends excessive funds to other poorer or low-income countries (Nigeria inclusive), thereby trapping the country and taking over some of its important national assets.

Conclusions

The study concluded that debt public debt management has no significant effects on infrastructural development in Nigeria's fourth republic as the finding of the study showed. This is because Nigerians are yet to experience the expected improvement in their quality of life as a result of the mounting external loan. The study further concluded that placing a moratorium on future loans will enable Nigeria to fix its fiscal policy problems by harnessing its resources to fund its infrastructure needs internally.

Recommendation

Based on the finding of the study, the paper recommended that:

1. The national assembly and the ministry of finance should link newly contracted loans to specific public infrastructural projects to avoid diversion of the loans proceeds
2. The Federal Ministry of Finance in conjunction with the debt management office should create a special purpose vehicle for packaging domestic infrastructure bonds.

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