



## TREASURY SINGLE ACCOUNT AND FEDERAL GOVERNMENT EXPENDITURE ON INFRASTRUCTURAL DEVELOPMENT IN NIGERIA

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**Abstract:** *The paper examined treasury single account (TSA) and federal government expenditure on infrastructural development in Nigeria. The study adopted Pre – Post Research design. Annual Time series data was extracted from Central Bank of Nigeria (CBN) Statistical Bulletin (2019). Descriptive Statistics was used to ascertain the normality in the distribution of the time series data. Paired sample t-test was used as the data analysis technique with the help of Microsoft Excel programme (version 16). The analysis showed that treasury single account application has positive but insignificant effect on federal government expenditure on healthcare; treasury single account application has positive but insignificant effect on federal government expenditure on education; and treasury single account application has positive but insignificant effect on government expenditure on road construction. Therefore, the study concluded that the application of Treasury Single Account has not improved federal government expenditure on healthcare, education and road construction. The study recommended that TSA account should be maintained, monitored, and well accounted to enable government carry out more of project on education which can improve the manpower development in the country. Also, treasury single account revenues should be used to provide more road construction to Nigerians, particularly in the rural areas, etc.*

**Keywords:** Treasury Single Accounts, Infrastructure, Development, Federal Government Expenditure

### INTRODUCTION

The concept of Treasury was first used in the Classical Management Era to describe buildings erected to accommodate gifts to the gods such as Delhi treasury. In many countries, the treasury is referred to as Ministry of Finance and the head is known as Finance Minister. This is true in countries like New Zealand, Canada, Malaysia, India, Japan and Nigeria (Imandojemu, 2016). It may be safe to say that TSA is derived from this treasure of financial management idea.

Financial development, management and integration, Chima and Obiah (2018) noted are indispensable if Africa is to increase its economic growth rates and reduce poverty. Because prioritized interventions establish

obtainable objectives with useful measurement of progress has helped emerging economies with limited resources to make decisions about allocating their resources (Nwaneri & Obiah, 2016). The central theme of these concerns, in the words of Chima (2017), is the realization of correct and prompt discharge of public sector obligations, with potential for cost reduction and returns maximization. To facilitate these concerns it is necessary to have banking infrastructure. On this we have the prevalence of the system of fragmentation and decentralization of government activities in commercial banking in the pre-TSA era he added. Regrettably, Chima (2017) further said, this system has been found to have shortcomings arising from multiple institutional

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deficiencies that weigh against the government that holds the funds in trust for the citizenry.

It is on this development that a system of unified structure of government bank accounts through the Treasury Single Account (TSA) evolved. Treasury Single Account (TSA) is a single bank account through which the government transacts all of its receipt and payments and gets a consolidated view of its cash position at any point in time for proper accountability; it is a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources (Eme & Chukwurah, 2015; Adeolu, 2015)

In expressing his dissatisfaction Soludo (2015), stated that TSA is a great initiative, however, we do not have to return to the past by having every penny of government largely redundant in the central bank. For any economy desperately in need of stimulation, piling up idle cash balance at the CBN is not sound economics. In the nutshell, the obvious fact about the introduction of TSA, Imandojemu (2016) captured is that the management of the collective patrimony in Africa is fraught with the prevalence of misappropriation of public funds by public servants, delays in fund disbursement, low absorption capacity by some departments, and idle, dormant bank accounts.

However, successive governments have continued to operate multiple accounts for the collection and spending of government revenue in flagrant disregard to the provision of the constitution. This singular loophole has made it possible for revenue generating MDAs to have reportedly generated N3.06Trillion in 2009, but only remitted N46.80Billion to government account; generated N3.07Trillion in 2010 but remitted mere N54.10Billion. Same agencies generated N3.17Trillion in 2011 and remitted a meager N73.80Billion. Okwe, Nelson, Adeoye and Ogah (2015) said that NNPC and its subsidiaries, which, having internally generated N6.132Trillion between 2009 and 2011 remitted zero Naira to the government treasury. In 2012 about N120Billion was

forcefully collected by government from MDAs being 25% of their gross revenue to the treasury with another N34Billion collected in 2013 (Abayelu, 2015). At this time, there were more than 10,000 bank accounts in multiple banks, which made it impossible to establish government consolidated cash position at any point in time (Obinna, 2015). Earlier in 2008, the Revenue Mobilization and Fiscal Commission released an audit report which indicted some banks withholding about N12Billion revenue collected on behalf of the Nigerian Customs Service and Federal Inland Revenue Service. The revenue according to the commission is stashed in 19 banks from January 2008 to June (Akujuru & Enyioko, 2017). Thus, the idea of TSA came into being when some agencies refused to declare and remit the 25% of their annual revenue they generated to the treasury as required by law.

Implementationally, the practice of TSA dates back to the administration of President Olusegun Obasanjo, who was informed by the need for a Consolidated Federation Account established Government Integrated Financial Management Information System (GIFMIS). On 30<sup>th</sup> of December 2011, President Goodluck Jonathan issued a circular for the commencement of the GIFMIS domiciled in the office of the Accountant General of the Federation and with the TSA. In January 2012 the TSA became operational with some pilot outlets (Chima, 2017). Therefore, it was President Goodluck Jonathan who piloted the TSA in its present form, when he commenced implementation with about 42 public institutions comprising MDAs, with the implementation deadline fixed for February 28, 2015. But he could not implement it before he left office on May 29, 2015. Equally, introduced by Jonathan is Integrated Personnel and Payroll Information System (IPPIS) in the public institutions to block ghost workers' syndrome.

In November 2013, in a Communiqué at the end of its 235<sup>th</sup> Monetary Policy Committee (MPC) meeting, the Central Bank of Nigeria called for an urgent



implementation of the TSA to manage the country's revenue properly. They noted that "A TSA is an essential tool for consolidating and managing governments' cash resources. In countries with fragmented government banking arrangement, the establishment of a TSA receives priority in the public financial management reform agenda. The CBN erosion of the fiscal buffers through the depletion of the Excess Crude Account (ECA) has further exposed the economy to vulnerabilities, while the fall in oil revenue has left capital inflows as the only source of external reserve accretions" (CBN, 2014).

To put the scheme in electronic system, which is the basis, the government/CBN engaged REMITA, an ICT Company, developed by SYSTEM SPECS LTD, for the payment and collection of funds on behalf of the federal government. Remita thus provides a "cutting-edge technology" for e-payment and e-collection on a single multi-bank platform (Chima, 2017). This makes it a system of aggregative financial inclusion, being a nationally organized and particular way of connecting all the divergent federating units on 3-by-3 matrix, federal, state and local governments and their respective MDAs to account for all their incomes and revenue via TSA designated bank accounts with commercial banks and channeling same to a consolidated single account deposited at the Central Bank of Nigeria (Prince, 2015 in Imandojemu, 2016).

According to Adebayo (2015) in Imandojemu (2016) TSA is a federal government independent revenue e-collection initiative that will automate revenue collections of MDAs directly into the federal government consolidated revenue fund (CRF) account at the CBN through the REMITA e-collection platform and other electronic payment channels. Since the introduction of TSA by the government, it has generated a lot of controversies and contentious debate with some agreeing on the full implementation and some neglecting to queue into the policy. TSA is a unified structure of government

bank accounts enabling consolidation and optimal utilization of government cash resources, execution of financial strategy and guarantee accountability in management of public funds; in order to provide the necessary infrastructures for the citizens.

#### **Statement of Problems**

TSA as a principle of public financial management and accounting system and revenue management has been a constitutional provision and an extant fiscal practice. Section 80 of the 1999 constitution, which gives legal backing to the TSA reads: "All revenues or other moneys raised or received by the Federation (not being revenues or other moneys payable under this constitution or any Act of the National Assembly into any other public fund of the Federation established for specific purpose) shall be paid into and form one Consolidated Revenue Fund (CRF) of the Federation." Other subsections of the provision explain restrictions regarding the withdrawal of money from this Consolidated Revenue Fund (CBN, 2015). With all revenues going into a single treasury account, government will have an overview of the money it has in its account and better plan its expenditure. So, the leakages that used to be there in the system where people used money as they want and decided what to return to the government will no more be there. So, there is a better control and management of government revenue (Akujuru & Enyioko, 2017).

Federal establishments affected by the directive include all fully funded organs of government MDAs, foreign missions and partially funded government establishments. Accountant General of the Federation reports that out of 900 MDAs, about 600 of them have so far fully complied with the directive on TSA, while others are still at different stages of compliance (Obinna, 2015). Olanipekun, Brimah and Owoleni (2015) stressed that the TSA is a financial programme for conducting the internal and external cash flows necessary for executing the public budget of the country, and it realizes the premium utilization of available liquidation. However, following



the application of TSA in the country, opinions and perception about its merit or demerit varies significantly across the country and among professionals in the country.

The present study is unique as it examined the effect of pre- and post-treasury single account application on government spending in Nigeria, using federal government expenditure as a case study. Previous studies ignore pre-TSA period. This study then overcomes this weakness by extending it to pre- and post-TSA application on infrastructural development.

The main reasons for TSA application in Nigeria is to maximize the use of cash resources through concentration and reduction in float costs, this is consistent with government policy to ensure prudence in the management of financial resources (Taiwo, 2016), to block all loopholes and leakages of financial resources of the government and also ensure a robust financial management system (Isa, 2016). As observed by Ocheni (2016), the Federal Ministry of Finance in Nigeria lacks a unified view and centralized control over government cash resources.

Meanwhile, Nigeria with its abundance of natural resources should be among the leading countries of the world in the area of infrastructural development. By now in Nigeria, basic amenities should be easily assessable in all hooks and crannies of the country. The amount generated from crude oil sales is more than enough to cater for the timing population, if the resources are utilized in its full capacity. The income generated in different ministries departments and agencies should be enough to ensure that Nigeria has good roads, well equipped hospitals and schools, and so on. Federal government should from time to time publish to its citizens how the revenue generated in the country are utilized. Nigerians should be made aware of the additional government spending on infrastructure caused by cutting off the loopholes and misappropriation funds using the implementation of treasury single account.

However, Nigerians cannot gauge the economic impact of treasuring single account application because the hardship has not reduced and living standard of citizens have not improved. Public schools and hospitals are in a critical condition. Death toll from road accidents and terrorism continues to increase. Hence, the essentiality of treasury single account is being questioned. Lack of basic infrastructures like good roads, pipe-borne water, electricity, hospitals, schools, and so on has been undermining the impact of treasury single account on the economy.

Consequently, the study attempts to appraise federal government expenditure on infrastructure pre- and post-TSA application in Nigeria. This is to ascertain the effect of treasury single account on government capital expenditure on administration, economic services, and social community services.

#### **Objectives of the Study**

The main objective of the study is to ascertain the effect of Treasury Single Account (TSA) on federal government expenditure on infrastructure. The following specific objectives guided the study to:

- Determine the effect of treasury single account (TSA) application on federal government expenditure on healthcare.
- Examine the effect of treasury single account (TSA) application on federal government expenditure on education.
- Evaluate the effect of treasury single account (TSA) application on federal government expenditure on road construction.

#### **Research Questions**

The study achieved the above specific objectives by providing answers to the following pertinent questions:

- To what level does treasury single account (TSA) application affect federal government expenditure on health?



- To what degree does treasury single account (TSA) application affect federal government expenditure on education?
- To what degree does treasury single account (TSA) application affect federal government expenditure on road construction?

### Statement of the Hypotheses

To proffer useful answers to the research questions and realize the study objectives, the following hypotheses stated in their null forms was tested:

H1: Treasury single account (TSA) application do not significantly affect federal government expenditure on education.

H2: Treasury single account (TSA) application do not significantly affect federal government expenditure on health.

H3: Treasury single account (TSA) application do not significantly affect federal government expenditure on road construction.

### REVIEW OF RELATED LITERATURES

#### Conceptual Framework

#### Treasury Single Account (TSA)

It has been proved that the exploration of knowledge is evident in the academic world. The ancient renowned Greek philosopher Socrates said, “Define your word and I will argue with you.” Bringing to perspective the need to define a concept in writing a paper like this. Treasury Single Account have had a surgery of definitions. Some in attempting to define them raise many people’s blood pressure. Rightly so, because there is hardly any author who does not define it in his/her own way. On this premise therefore, the paper will define the major concepts as it will reflect in the study.

Treasury Single Account (TSA) is a public accounting system under which all government revenue, receipts and income are collected into one single account, usually maintained by the country’s central bank and all payments done through this account as well. The purpose is primarily to ensure accountability of government

revenue, enhance transparency and avoid misapplication of public funds. The maintenance of TSA will help to ensure proper cash management by eliminating idle funds usually left with different commercial banks and in a way to enhance reconcialization of revenue e-collection and e-payment (Adeolu, 2015 in Akujuru & Enyioko, 2017). Based on cash management, Chima (2017) agreed with Dikwa (2014); Nwaze (2015); Erne and Chukwurah (2015); and Tari, Myatafadi and Kibikwa (2016) that TSA is a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources and as a bank account or a set of linked accounts through which the government transacts all its receipts and payments and gets a consolidated view of cash position at the end of every day.

TSA is a restructuring system, which from the financial angle, Chima, Obiah and Ezedike (2018) propels economic efficiency, and economic efficiency is simply impossible without a good system for mobilizing and allocating capital resources within the economy. According to Chukwu (2015), Treasury Single Account (TSA) is a network of subsidiary accounts connected to a main account, with transactions taking place in the subsidiary accounts but closing balances being transferred to the main account at the end of each business day. It is an account, as Akande (2016) posits, that connects all government revenues from across the federation to the federal government’s consolidated revenue fund account, which is currently domiciled at the CBN through the Remita e-collection payment system. Yusuf (2015) opined that Treasury Single Account is a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources. According to Okerekeoti and Okoye (2017), TSA also is part of the Public Financial Management reforms which falls under Pillar 3 of the National Strategy for Public Service Reforms towards Vision 20:2020. The public



financial management reforms were designed to address impediments to effective and efficient cash management.

#### **Federal Government Expenditure on Infrastructure**

The sum spent on the construction of fixed (productive) assets (whose useful life lasts beyond the accounting or fiscal year), as well as the upgrade/improvement of existing fixed assets such as healthcare, education, road constructions are regarded as federal government expenditure on infrastructure. Since there may be some lags between when this infrastructural expenditure is incurred and when it has an effect on the economy, federal expenditure is typically viewed as an investment that generates potential benefits to the citizens.

The argument on whether federal government expenditure has positive or negative impact on economic growth has, for years, continued to provoke series of economic controversies and debates among economic scholars in the public finance literature. In theory, generally, the relationship between federal government expenditure and economic growth is ambiguous as well. Therefore, government can enhance growth through efficient provision of infrastructure, such as healthcare, education, roads, etc.

#### **Theoretical Framework**

This work is underpinned by Stakeholder Theory, and Public Finance Management Theory.

#### **Stakeholder Theory**

The stakeholder theory has its roots from strategic management. It is a theory of organizational management and business ethics invented by Edward Freeman (1984), which he says is an integrated normative, positive and instrumental theory. That means it says what ought to be, it says what already is and it also says how to convert what is into what ought to be. Stakeholders are defined as individuals or groups with legitimate interests in procedural and substantive aspects of the activity of the firm (Alayemi & Abdul-Lateef, 2017) or who affect the firm or whom the firm affects. The stakeholder theory explains the relation between the company and its

external and internal stakeholders. It clarifies why stakeholders' information expectations imply a multidimensional presentation of the economic, social and environmental potential delivered through sustainability reporting (Zyznarska-Dworczak, 2018). Popa, Blidisel and Bogdan (2009) maintain that stakeholder theory is based on the premise that the stronger the firms' relationships are with other interest parties, the easier it will be to meet its business objectives. It based on the principle of corporate accountability which emphasizes the need for a company to recognize its broad range of stakeholders, such as owners, directors, managers, employees, customers, creditors, suppliers, and the host community. Freeman (1984) argues that managers in firms are not only responsible for satisfying the interests of shareholders but also for acting in the best interests of all the stakeholders including the society as a whole.

This theory is conceptualized on the assumption that the adoption of Treasury Single Account (TSA) by the FGN was as a result of the pressure mounted on the government by the stakeholder for the eradication of corruption. The researcher argued that the emergence of TSA was as a result of government response to the yearnings, demands and aspirations of critical stakeholders by way of developing strategic options towards eliminating corruption. The stakeholder's theory therefore explains the motivating factors that made the government to adopt and implement the TSA.

#### **New Public Management (NPM) Theory**

The various theories of governance accommodate that social conflicts are resolved by a sovereign from a perspective of responsibility as guided by the New Public Management theory. The NPM initiative was founded in UK in 1979 and by the year 1991, it become a major reform strategy which was adopted by many countries all around the world and practiced by most member states of the Organization for Economic Cooperation and Development (OECD). The NPM techniques for the



public sector are to facilitate more transparency in government activities, to strengthen the accountability of government, and improve decision-making. This theory presumes that the government should endeavor to prudently manage her expenditure to the benefit of the citizenry. The theory also stress that the government's revenue should be well mobilized to disallow the looting of such into private pockets (Udo and Esara, 2016). These consist of resources prioritization, prioritization of programmes the budgetary process, efficient management of resources etc. (Bashir, 2016), therefore, the essence of TSA is to avoid misapplication of public fund. Therefore, NPM is a historic opportunity for developing countries to develop a more democratic political system and to improve transparency and accountability.

TSA applies to the underlying principles of recent social, economic, public sector reforms as means to improve the accountability, transparency and public sector governance. The application of TSA as part of broader financial management and public sector reforms in line with the doctrine of NPM in the developing countries may still be a mirage (Babatunde, 2017). This work is therefore anchored on Public Finance Management Theory and Stakeholders Theory because it focuses majorly on the management of revenue accruing to the government for the good of the citizenry of which Treasury Single Account is a tool.

#### **Empirical Review**

Ratua (2016) examined the effects of Treasury Single Account (TSA) on the economic development of Nigeria. The methodology is explorative, hence a thorough review of secondary data which were derived from library and internet sources. Findings from the review show that TSA policies, which have to do with uniformity of record keeping and bank accounts, consolidation of Government accounts, optimal utilization of Government cash resources and minimization of fraud and corruption in the financial system among others, are perceived to have positive effects on economic development.

Oguntodu, Alalade, Adekunle, and Adegbe, (2016) assessed the relationship between Treasury Single Account and Nigeria's Economy from 1999 to 2015. They employed a longitudinal research design to examine the relationship between Treasury Single Account and economic performance in Nigeria. Their study made use of secondary data from CBN statistical bulletin from 1999 to 2015. The study used GDP which represents Nigeria economic performance as the dependent variable while TSA which was represented by Money Supply (MS), Credit with CBN (CR) and Deposit to CBN (DP) as the independent variables. OLS regression technique was employed to show the extent or degree of relationship between the independent and the dependent variables. The result shows that the Treasury Single Account has a positive significant impact on the country's economic growth.

Ndubuaku, Ohaegbu, and Nina (2017) examined how the introduction of Treasury Single Account has affected banks Credit to private sector, Deposit Mobilization, and Loans and advances. The study employed descriptive and ex post facto research design. The population of the study was made up of the 24 commercial banks in Nigeria. The Time Series data used for the study were obtained from Central Bank of Nigeria Statistical Bulletin for the period 2010 – 2015. OLS Regression and correlation analysis were used to analyse the data. The study concludes that the introduction of Treasury Single Account significantly reduced Credit to private sector, Deposit Mobilization, and Loans and advances. The study recommends that the banks should avoid over-reliance of government funds and source for funds from other sectors of the economy.

Bashir (2016) examined the effect of Treasury Single Account on public finance management in Nigeria. The study population covers Ministries, Department and Agencies within Bauchi metropolis using a sample of 72 respondents through judgment sampling. A Pearson correlation technique was employed as the data analysis method. The study result shows that Treasury Single



Account (TSA) is capable of plugging financial loopholes, promoting transparency and accountability in the public Financial System. Thus, the researchers recommend that for the success of this policy government should promulgate more legislation to make it mandatory for all the three tiers of government in Nigeria. (see Ekubiat & Edet (2016; Mutalib, Bulkachuwa, Uarame & Chijioke, 2015; Udo & Esara, 2016; Yusuf, 2016; Akujuru & Enyioko, 2017)

Ahmed (2016) carried out research on Treasury Single Account (TSA) as an Instrument of Financial Prudence and Management: Prospects and Problems. It was concluded that the system requires political will, honesty and determination so as to overcome the various challenges identified in the paper in order to achieve the expected benefits of the system.

Tari, Myatafadi & Kibikiwa (2016) considered Treasury Single Account (TSA) Policy in Nigeria: Reviving Jonathan's 'Dead' Policy Directives. The paper relied on secondary methodology to effectively examine the fiscal impact of reviving the TSA policy and anchored on incremental model as a framework of analysis. The paper suggests better ways of making the policy effective amidst the dwindling oil price and the superiority of Dollar against the Naira. Hence, the research concluded that except proper monitoring of government account is carried out, in all government institutions and strong punitive measure applied against defaulters and corrupt officers, that TSA will be a failure in Nigeria.

Abiola (2018) investigated opinion and perception of Treasury Single Account (TSA) adoption in Nigeria. Data were collected through the administration of structured questionnaire. The study analyzed a total sample size of 200 purposively selected among Federal, State, Local Government and Private Sector Employees. The outcome variable was perception dichotomized into positive and negative perception. Data were analyzed using frequency and percentages, as well as analytic weighted mean. Result showed variation in acceptability attitude towards

TSA implementation in Nigeria; 23.4% of respondents reported negative perception (non-acceptability); and 76.6% of respondents reported positive perception (acceptability) and ( Nwankwo, 2017)

Igbekoyi and Agbaje (2017) assessed the implication of adoption of TSA on accountability and transparency in the Nigerian public sector; with a view to find out if the policy is capable of promoting government accountability function. The study consist of all ministries, departments and agencies (MDAs) in the public service with sample size of ten (10) MDAs involved in revenue generation selected using purposive sampling technique. The hypotheses were tested using regression analysis (ANOVA). The finding of the study showed that, TSA significant positive impact on financial leakages, transparency and curb financial misappropriation.

Similar studies have been researched by Adebayo, Akinleye, and Adeduro (2020) Clementina (2016); Ogbonna and Amuji (2018); Kanu (2016); Omodero and Okafor (2016); Akhidime, (2015); Agbonkhese and Asekhome, (2014); Fatile and Adejuwon (2017); Onyeizugbe, Igbodo, and Enaini (2017); Ikya, Akaa, and Ucherwuhe (2017); Olugbenga and Owoeeye (2017); Gregoriou and Ghosa (2017); Njoku, Ugwu, and Chigbu (2014), most of them relate it to economic growth or development.

#### **Instrumentation**

A Pre – Post Research design was adopted for this study. A pre-test and post-test otherwise called “difference in mean” design is an experiment where measurements are taken both before and after a treatment. The rationale for this design is because the study will compare the past government capital expenditure in Nigeria before the operation of TSA and federal government expenditure after the operation of TSA, so as to ascertain the effect TSA has on federal government expenditure. The research was conducted in Nigeria using its federal government expenditure on health, education and road construction as benchmark to measure the impact of



treasury single account in Nigeria. This study covered a period of eight (8) years. Annual Time series data was extracted from Central Bank of Nigeria (CBN) Statistical Bulletin (2019). The choice of the period is to appraise federal government expenditure four years (2011-2014) before operation of TSA and four years (2016-2019) after its operation. 2020 could not form part of the study because data for 2020 was not yet published by CBN. All federal government expenditure heads in the ministries of health, education, and works and housing formed the population of the study. Paired sample t-test was used as the data analysis technique with the help of Microsoft Excel programme (version 16). The appropriateness of this method can be justified from the fact that each data was grouped into two observations: (before TSA application and after TSA application) hence the research design name “Pre-Post”. The objectives of the study will be accomplished in the following manner. Descriptive Statistics to ascertain the normality in the distribution of the time series data. A Paired sample t-test analyze if there is a difference in the capital expenditure before the application of TSA and after the application.

### 3.8 Model Specification

To analyse the respective differences, the mathematical representation of the null and alternative hypotheses is defined as follows;

$$H_0: \mu d = 0$$

$$H_1: \mu d \neq 0 \text{ (two-tailed)}$$

$$H_1: \mu d > 0 \text{ (upper-tailed)}$$

$$H_1: \mu d < 0 \text{ (lower-tailed)}$$

The assumptions are as follows:

1. The null hypotheses (H0) assumes that the true mean difference ( $\mu d$ ) is equal to zero.
2. The two-tailed alternative hypotheses (H1) assumes that ( $\mu d$ ) is not equal to zero.
3. The upper-tailed alternative hypotheses (H1) assumes that ( $\mu d$ ) is greater than zero.
4. The lower-tailed alternative hypotheses (H1) assumes that ( $\mu d$ ) is less than zero.

### Description of Variables

The variables are structured into dependent and independent variables. Treasury single account (TSA) form the independent variable of the study. While federal government expenditure on education, health, and road construction are the dependent variable of the study. TSA = FGEH, FGEE & FGERC

Where:

**FGEH** = Federal Government Expenditure on Health

**FGEE** = Federal Government Expenditure on Education

**FGERC** = Federal Government Expenditure on Road Construction

**Table 1: Time Series Data of Government Capital Expenditure**

PERIOD	FGEH N'B	FGEE N'B	FGERC N'B
<b>Before the Application of TSA</b>			
2011	231.80	386.40	92.85
2012	190.50	320.90	97.40
2013	283.65	505.77	154.71
2014	229.63	393/45	111.25
<b>After the Application of TSA</b>			
2016	147.72	278.95	68.80
2017	328.94	542.19	167.66
2018	446.25	753.49	203.42
2019	591.26	994.19	264.69

Source CBN Statistical Bulletin (2011-2019)

**Table 2: Descriptive Statistics for the Focal and Explanatory Variables**

	FGEH	FGEE	FGERC
Mean	306.2188	521.9175	145.1025
Median	257.7250	449.6100	133.0000
Maximum	591.2600	994.1900	264.6900
Minimum	147.7200	278.9500	68.80000
Std. Dev.	147.2605	242.5015	65.76414
Skewness	0.933152	0.971145	0.637263
Kurtosis	2.729442	2.754752	2.306001



Jarque-Bera	1.185430	1.277546	0.702017
Probability	0.552824	0.527940	0.703978
Sum	2449.750	4175.340	1160.820
Sum Sq. Dev.	151799.5	4116490	30274.45
Observations	8	8	8

Source: Eviews 10.0 Statistical Software

Table 2 above reveals the variable of the 8 observations of the time series data collected from CBN Statistical Bulletin. The normality of the distribution of the data series is shown by the coefficients of Skewness, Kurtosis and Jarque-Bera Probability. From the table 2, the

probability of the Jarque-Bera Statistics for all the explanatory variables have insignificant p-values as follows: Federal Government Expenditure on Health (0.552824), Federal Government Expenditure on Education (0.527940), and Federal Government Expenditure on Road Construction (0.703978). The insignificance of the p-values depicts normal distribution for all the variables. This is further confirmed by the skewness coefficients which is less than the figures one in all the explanatory variables are normally distributed with Kurtosis coefficient that is less than three.

Table 3 Test Paired two samples for Means

	FGEE AFTER	FGEE BEFORE
Mean	378.5425	233.895
Variance	35190.82496	1460.421767
Observations	4	4
Pearson Correlation	0.237024011	
Hypothesized Mean Difference	0	
d/f	3	
t Stat	1.586450771	
P(T<=t) one-tail	0.105413607	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.210827215	
T Critical two-tail	3.182446305	

Source: Computed by Researcher using Microsoft Excel 2016 Software

The t-Test result in table 3 reveals that Federal Government Expenditure on Health before application of TSA has a means of N233.895, while the mean after application of TSA is N378,5425. Furthermore, a variance of N1,460.42 and N35,190.8 were obtained for Federal Government Expenditure on Health before and after application of TSA respectively. At two-tailed, the t-calculated of 1.5865 is less than the t-tabulated of 3.1824.



**Table 4 t:-Test: Paired Two Sample for Mean**

	<b>FGEE AFTER</b>	<b>FGEE BEFORE</b>
Mean	642.205	401.63
Variance	92744.99557	5887.1126
Observations	4	4
Pearson Correlation	0.318353569	
Hypothesized Mean Difference	0	
d/f		3
t Stat	1.662557532	
P(T<=t) one-tail	0.097493824	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.194987647	
T Critical two-tail	3.182446305	

**Source: Computed by Researcher using Microsoft Excel 2016 Software**

The t-Test result in table 4 shows that Federal Government Expenditure on Education before application of TSA has a mean of N401, 63, while the mean after application of TSA is N642,205. Furthermore, a variance of N92,745 and N5,887 were obtained for Federal Expenditure on Education before and after application of TSA respectively. At two-tailed, the t-calculated of 1.6626 is less than the t-tabulated of 3.1824.

**Table 5 t:-Test: Paired Two Sample for Mean**

	<b>FGERC AFTER</b>	<b>FGERC BEFORE</b>
Mean	176.1425	114.0625
Variance	6726.362292	795.838583
Observations	4	4
Pearson Correlation	0.472783934	
Hypothesized Mean Difference	0	
d/f		3
t Stat	1.699950814	
P(T<=t) one-tail	0.093850011	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.187700022	
T Critical two-tail	3.182446305	

**Source: Computed by Researcher using Microsoft Excel 2016 Software**



The t-Test result in table 5 shows that Federal Government Expenditure on Road Construction before application of TSA has a mean of N114,0625, while the mean after application of TSA is N176,1425. Furthermore, a variance of N6,726.36 and N795.83 were obtained for Federal Government Expenditure on Road Construction before and after the application of TSA respectively. At two-tailed, the t-calculated of 1.6999 is less than the t-tabulated of 3.1824.

**Table 6 Test of Mean Difference in the Variables**

	<b>FGEH</b>	<b>FGEE</b>	<b>FGERC</b>
Mean Difference	₦ 144.6475	₦ 240.575	₦ 62.08
Stand. Dev. of Difference	₦ 182.35	₦ 289.4	₦ 73.03
Standard Error of Difference	₦ 91.175	₦ 144.7	₦ 36.515
T alpha half 95% Confidence Level	3.1824	3.1824	3.1824
Lower Confidence Level	₦ -145.50782	₦ -219.91828	₦ -54.125336
Upper Confidence Level	₦ 434.80282	₦ 701.06828	₦ 178.285336

**Source: Computed by Researcher Using Microsoft Excel 2016 Software**

The mean difference between Federal Government Expenditure on Health before the application of TSA and after the application of TSA is N144,6475. While the mean difference between Federal Government Expenditure on Education before application of TSA period after application of TSA is N240,575. However, Federal Government Expenditure on Road Construction has a mean difference of N62.08 for period before application and after application of TSA. At lower confidence level Federal Government Expenditure on Health, Education and Road Construction are N-145.50782, N-219.91828 and N-54.125336 respectively. While at upper confidence level, Federal Government Expenditure on Health, Education and Road Construction are N434.80282, N701.06828, and N178.285336 respectively.

The mean difference in federal government collected revenue before the application of TSA and after application of TSA is N2,623.40. While the mean difference in Gross Domestic Product before application of TSA and after application of TSA is N8,698.48. However, inflation rate and interest rate have a mean

difference of 5.753 and 0.23 respectively for before application and after application of TSA. At lower confidence level the federal government collected revenue, Gross Domestic Product, inflation rate, and interest rate are N-3031.48, N2392.078 2.002340 and -1.5020 respectively. While at upper confidence level, the federal government collected revenue Gross Domestic Product, inflation rate, and interest rate are N8278.27140, N15004.889, 7.498945833 and 1.961962476 respectively.

#### **Test of Hypotheses**

**Decision Rule:** If the P-value is greater than Alpha Level of 0.05, the null hypothesis of no significant effect will be accepted; if otherwise, reject the null and accept alternative. Also, if the t-tabulated is less than t-calculated null hypotheses should be accepted.

**Hypothesis One:** Treasury single account (TSA) application do not significantly affect federal government expenditure on Health.

The t-test for the paired two sample for means in table 3 shows a two-tail probability of 0.2108 which is greater than the alpha value of 0.05. Therefore, the null hypothesis is accepted and the alternative hypotheses



rejected. The t-tabulated (1.58645) which is less than t-calculated (3.1824) also suggest that the null hypotheses should be accepted. This implies that TSA do not significantly affect federal government expenditure on health.

**Hypothesis Two:** Treasury single account (TSA) application do not significantly affect federal government expenditure on education.

The t-test for the paired two sample for means in table 4 shows a two-tail probability of 0.19499 which is greater than the alpha value of 0.05. Therefore, the null hypothesis is accepted and the alternative hypotheses rejected. The t-tabulated (1.6626) which is less than t-calculated (3.1824) also suggest that the null hypotheses should be accepted. This implies that TSA do not significantly affect federal government expenditure on education.

**Hypotheses Three:** Treasury single account (TSA) application do not significantly affect government capital expenditure on road construction.

The t-Test for the paired two sample for means in table 5 shows a two-tail probability of 0.1877 which is greater than the alpha value of 0.05. Therefore, the null hypothesis is accepted and the alternative hypotheses rejected. The t-tabulated (1.69995) which is less than t-calculated (3.1824) also suggest that the null hypotheses should be accepted. This implies that TSA do not significantly affect government capital expenditure on road construction.

### Discussion of Result

The t-Test for the paired two sample for means in table 4.2.2 reveal that treasury single account has a positive and insignificant (P-value 0.2108) effect on federal government expenditure on health. While the mean value of federal government expenditure on health before TSA's application was ₦378.5425 billion, federal government expenditure on health after TSA's application has a mean value of ₦233.895 billion resulting to an increase of ₦144.6475 billion (see Table

6). This result shows that TSA's application has not significantly increased federal government expenditure on health. The result is consistent with the finding of Adebayo, Akinleye, and Adeduro (2020) who found treasury single account to have a positive and insignificant effect on federal government expenditure in Nigeria.

The t-test for the paired two sample for means in table 4 reveal that treasury single account has a positive and insignificant (P-value 0.1949) effect on federal government expenditure on education. While the mean value of federal government expenditure on education before TSA's application was ₦401.63 billion, federal government expenditure on education after TSA's application has a mean value of ₦642.205 billion resulting to an increase of ₦240.575 billion (see Table 6). This result shows that TSA's application has not significantly increased federal government expenditure on education. The finding is in line with the findings of Adebayo, Akinleye, and Adeduro (2020), Udo and Esara (2016), and Ekubiat and Edet (2016), Ratua (2016), who confirmed that Treasury Single Account has a positive impact on the country's economic growth.

The t-Test for the paired two sample for means in table 5 reveal that treasury single account has a positive and insignificant (P-value 0.1877) effect on federal government expenditure on road construction. While the mean value of federal government expenditure on road construction before TSA's application was ₦114.0625 billion, federal government expenditure on road construction after TSA's application has a mean value of ₦176.1425 billion resulting to an increase of ₦62.08 billion (see Table 6). This result shows that TSA's application has not significantly increased federal government expenditure on road construction. The finding is in line with the findings of Adebayo, Akinleye, and Adeduro (2020), Oguntodu, et al. (2016), Udo and Esara (2016), and Ekubiat and Edet (2016), Ratua (2016),



who confirmed that Treasury Single Account has a positive impact on the country's economic growth.

### Summary of Findings

These are the summary of findings from the data analysis:

1. Treasury single account application has positive but insignificant effect on federal government expenditure on healthcare.
2. Treasury single account application has positive but insignificant effect on federal government expenditure on education.
3. Treasury single account application has positive but insignificant effect on government expenditure on road construction.

### Conclusion

This study empirically examined the effect of TSA on the federal government expenditure on some infrastructures in Nigeria. Based on the result of the pre-post analysis carried out on the effect of TSA on the country's federal government expenditure, the study concludes that the application of Treasury Single Account has not improved federal government expenditure on healthcare, education and road construction.

### Recommendation

Consequent to the findings of this study, the paper therefore recommends the following:

- TSA account should be maintained, monitored, and well accounted to enable government carry out more of project on education which can improve the manpower development in the country.
- Also, the federal government should make policies and means to ensure that proper accounting of the funds into the Treasury Single Account follows due process and any subsequent foul play by the relevant agencies or even the CBN should be duly prosecuted. This will ensure efficient use of the revenue collected using TSA and subsequently increase government expenditure on healthcare.

- Treasury single account revenues should be used to provide more road construction to Nigerians, particularly in the rural areas.

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