



Tax Collection Efficiency and Tax Revenue Generation in Nigeria

Ibrahim Solomon Audu^(1*), Olalekan Akinrinola⁽²⁾, Teju Somorin⁽³⁾

^{1,2,3}Department of Accounting, Finance & Taxation Caleb University, Imota, Lagos State, Nigeria
E-mail: solomon.audu@calebuniversity.edu.ng

^(*) Corresponding Author

ARTICLE HISTORY

Received : 30-07-2023

Revised : 23-08-2023

Accepted : 06-09-2023

KEYWORDS

Accountability

Budget Estimate

Direct Tax Revenue

Indirect Tax Revenue

Tax Collection Efficiency



ABSTRACT

When compared to other African countries, Nigeria has one of the lowest tax to GDP ratios among the top ten largest countries in Africa. Hence, this study assessed the effect of tax collection efficiency on the level of tax revenue in Nigeria. The study is built theoretically on the cost-benefit theory of taxation. Secondary data was collected in this study over an eleven-year time period which range over 2011 to 2021. The data were processed analytically using the regression model to measure the effect of the independent variable which is tax cost of collection efficiency on the dependent variables which are direct cost and indirect taxes and moderated by accountability of the collecting agency. The outcome of the study shows the regression result of 74.3% and a calculated p-value of 0.002 which shows that tax collection cost efficiency have a high level of significance effect on direct tax revenue generation in Nigeria. It is concluded from the result that tax collection cost efficiency does have a significant effect on tax revenue generation in Nigeria. Based on the outcome of the study, it is advised that more prudent measures be set up so as to ensure improvement in the tax collection process in order to manage tax collection cost efficiently and improve tax revenue generation in Nigeria.

Introduction

Tax revenue is the mainstay of any economy and is crucial to the sustainability of an economy. The Organization for Economic Co-operation and Development (OECD) in 2018, the top ten economies in the world have an average tax to GDP ratio of 33.8%. It is also citall to state that to point out that the average tax to GDP ratio of the top 26 largest economies in Africa for the same period is put at 17.2% while Nigeria is estimated at 6% which is far below her contemporaries on the African continent (Audu, 2020). This can partly be one of the causes of rising debt level in Nigeria and if not watched can threaten the sustainability of the country.

The low and continuing dwindling of the oil prices has made government of Nigeria to put in extra effort to increase tax revenue. Various tax reforms to enhance tax revenue have been centered on the traditional approaches of tax obligation, awareness, tax compliance and enforcement, tax evasion and taxpayers' attitude with little on how to enhance the tax collection efficiency and accountability of the collecting government agencies. There have been issue of low level of accountability among public officials as reported by Transparency International overtime. In addition, there have been agitations to amend the tax laws that enable the Federal Inland Revenue Service deduct its overhead cost from revenue generated in other to reduce excesses that might exist (Shahroodi, 2010).

Explained that technology can actually improve efficiency in tax collection procedure by reducing the cost of collection drastically and also promoting the level of efficiency in the tax collection procedure (Audu and Ishola, 2020). In Nigeria for example, a review at the fiscal result of each state shows that Lagos state appears to have sustained an improved level of performance due to efficiency and accountability (Audu & Ajibade, 2021). The right utilization of resources to bring improved performance is critical as this is the case in private sector and the public sector is not excluded. There is abundance of literature examining various factors to boost tax revenue but there appears to be paucity of literature that examines the cost efficiency associated with tax collection in relationship with tax revenue.

Therefore, this study is intended to evaluate the effect of a tax collection efficiency on the level tax revenue generation in Nigeria. In order to attain the aim of this study, the specific objectives were addressed: To determine the influence of tax collection efficiency on direct tax generation as revenue in Nigeria, and to determine the influence of tax collection efficiency on indirect tax generation as revenue in Nigeria.

The below research questions were set in a bid to reach the objectives of this study: How has tax collection efficiency affect direct tax generation as revenue in Nigeria?, and to what extent does tax collection efficiency affect indirect tax generation as revenue in Nigeria?

Literature Review

Conceptual review

Shahroodi (2010) posited that efficiency to be determined by measuring the correlation between tax revenue and tax effort. The cost of tax collection efficiency can further be identified by comparing actual tax revenue to estimated tax revenue. In addition, tax collection efficiency can also be determined by measuring the change in tax revenue between the current and past year (Taghavinezhadian, 1990).

According to Babatope and Audu (2020) explain accountability to be the process where representatives are answerable for their actions. Accountability is maintained at three different levels which are set in place by the law, the hierarchy among the tiers of government and the citizens of the country (Ahmed & Bello, 2015). They point out that for accountability to be enshrined, there must be a general respect for the rule of law which means that the law is above every organ or entity within the state.

Tax revenue refers to income generated from the collection of taxes which are a mandatory levy established by the government on the income, profit or wealth of entities within its territories (Kwaji & Dabari, 2017). Somorin (2019) explained that taxes can be classified as direct and indirect taxes. Direct taxes can be described as those forms of taxes that the burden of tax falls directly on the tax payer while indirect taxes refers to the type of tax where the burden of tax does not fall on the taxpayer (Mallick, 2021). Brautigam (2002) opine that the amount of tax revenue generated is a function of the efficiency of the management of tax in the state which is usually low in developing economies. Tax revenue is primary source of revenue to any government (Omolehinwa & Naiyeju, 2015) and is the mainstay of an economy. They also refer to tax revenue as a fiscal policy tool used to stabilize the economy.

Theoretical review

The cost benefit theory is reviewed and considered as the theoretical basis for this study.

Cost benefit theory

The development of the cost benefit theory is credited to Jules Dupuit in 1848 and was further developed by Alfred Marshall (Wiener, 2013). The theory provided a rationale for embarking on public projects to ensure the social profitability of such projects. It was initially used in the public sector to ensure that projects were rationally carried out. It was later used for investment appraisal in choosing among multiple investment opportunities (Clawson & Knetsch, 1966).

Criticism against the theory was that it does not go beyond measuring cost and benefit to understand the economic importance of projects. In addition, they posited that marginal cost is not considered and when considered might result in varying result (Nurmi & Ahtiainen, 2018; Persky, 2001). However, the supporters of this theory among which is Campbell and Brown (2003) explained that just like any other investment discounted cash flow appraisal technique, it considers risk and the future value of the project.

Finally, this theory is considered as the theoretical foundation of this study as it clearly explains the rational of this study. As the study seems to evaluate the association between the cost of generating tax revenue by the Federal Inland Revenue Service (FIRS) and the actual tax revenue that they generate.

Based on the theory, the following postulations can be made in order to validate the position of the theory in the Nigerian environment. Hence, the below research hypotheses are formed: H₀₁: Tax collection efficiency does not significantly influence the level of direct tax generation as revenue in Nigeria. And, H₀₂: Tax collection efficiency does not significantly influence the level of indirect tax generation as revenue in Nigeria.

Empirical review

Toma and Toma (1992) assessed the effectiveness of hiring tax consultants over government revenue collectors using qualitative research design. They revealed that consultants seem to be cheaper than the use of conventional revenue collectors of government. Similarly, Shahroodi (2010) assessed the efficiency and the effectiveness of tax organization in Iran. The study was conducted using a survey research design and it pointed out that information technology (IT) promotes the efficiency of the tax organization, the current tax law and processes doesn't promote efficiency.

A study in Nigeria by Kwaji and Dabari (2017) assessed the effect of various types of tax on the total revenue generated by the Federal government of Nigeria. They adopted an ex post facto research design. It was shown from their study that the proxies of direct tax all have a positive significant effect on revenue of the Federal Government of Nigeria while company income tax and value added tax did not have a significant effect on the revenue of the Federal Government.

Brum, et al. (2020) assessed the influence of information communication technology on tax revenue mobilization in Nigeria adopting the ex post facto research design. They pointed out from their study how information communication technology readiness does not significantly have a positive effect on the tax level of revenue generated. But that information communication technology usage increases tax revenue however when control of corruption is maintained and government effectiveness is also maintained.

Chatama (2013) carried out a study in Tanzania to measure the impact of information communication technology (ICT) on tax administration procedures adopting a survey research design. It was shown from the study how ICT improves tax administration process. Huang, Yu, Hwang and Chen (2017) investigated the performance of tax collectors' efficiency. They

discovered that tax efficiency level is quite different for the collection of tax revenue and for the management of tax.

In India, Mallick (2021) assessed the impact of governance and information communication technology on direct and indirect tax revenues using the ex-post facto research design. The study showed that information communication technology and governance does not have a significant positive impact on tax revenue generation in India.

Research Method

The research design used in this study is the ex-post facto research design. The type of data used in the study is the secondary data which were gathered for each of the variables (Accountability, tax collection efficiency, direct tax revenue and indirect tax revenue) for period spanning from year 2011 to 2021 which sums up to 11 years. The multiple regression was adopted in processing analytically the secondary data gathered in order to assess the influence of the explanatory variable on the explained variables. The regression model is specified below:

$$Y=f(X)$$

$$\text{Tax Revenue} = f(\text{Tax Collection Efficiency}).$$

This can be formulated mathematically as:

$$DT = \beta_0 + \beta_1 \text{LogTCE} + \beta_2 \text{LogACT} + e \dots\dots\dots i$$

$$IT = \beta_0 + \beta_1 \text{LogTCE} + \beta_2 \text{LogACT} + e \dots\dots\dots ii$$

Where

DT = Direct tax revenue Generation (Dependent Variable)

IT =Indirect tax revenue Generated (Dependent Variable)

β_0 = Intercept where independent variables are zero

β_1 TCE = Tax Collection Efficiency (Independent Variable)

β_2 ACT = Accountability (Moderating Variable)

e = error term

Data Analysis and Discussion of Findings

The result of the inferential statistics analysis carried out is as displayed below:

Test of Hypotheses

Hypothesis One

H₀₁: Tax collection efficiency does not significantly influence the level of direct tax generation as revenue in Nigeria.

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891 ^a	.794	.743	931.34448

a. Predictors: (Constant), Accountability, Cost of Collection

Table 1 reveals that a cost of collection of tax revenue have a high positive influence on the collection of direct tax revenue generated in Nigeria. This is represented by the adjusted R square of 74.3%. Which also connotes that 25.7% of direct revenue is affected by other variables not captured in the model specified.

Table 2. ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	26765606.280	2	13382803.140	15.429	.002 ^b
Residual	6939220.317	8	867402.540		
Total	33704826.597	10			

a. Dependent Variable: Direct Tax

b. Predictors: (Constant), Accountability, Cost of Collection

Table 2. shows that the manually computed p-value is 0.002 which is lower than the set p-value of 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis which states that ‘tax collection efficiency does not significantly influence the level of direct tax generation as revenue in Nigeria’ is retained.

Table 3. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	23142.799	6556.625		3.530	.008
Cost of Collection	-12.932	3.204	-.667	-4.036	.004
Accountability	-698.240	254.693	-.453	-2.742	.025

a. Dependent Variable: Direct Tax

Table 3 shows the integers of the variables as derived in the regression model that was used in testing hypothesis one. It shows that the value of the intercept is positive while that of cost of collection and accountability are inverse. While that of accountability is negative which suggests the more accountability the level of accountability, the lower the level of tax collected.

Hypothesis Two

H₀2: Tax collection efficiency does not significantly influence the level of indirect tax generation as revenue in Nigeria.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919 ^a	.845	.806	430.76148

a. Predictors: (Constant), Accountability, Cost of Collection

Table 4 reveals that tax collection cost have a high positive effect on the level of indirect tax generated in Nigeria. This represented by the adjusted R square of 80.6%. It further means that in respect of the generation of indirect tax revenue generation, there are still some other factors responsible for the level of indirect tax revenue generated in Nigeria. This accounts for 19.4%.

Table 5. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	8085317.630	2	4042658.815	21.787	.001 ^b
1	Residual	1484443.614	8	185555.452		
	Total	9569761.244	10			

a. Dependent Variable: Indirect Tax

b. Predictors: (Constant), Accountability, Cost of Collection

Table 5 shows that the computed p-value as 0.01 which is lower than the set p-value of 0.05. Therefore, the alternate hypothesis is rejected and the null hypothesis which states that 'tax collection efficiency does not significantly influence the level of indirect tax generation as revenue in Nigeria.' is retained.

Table 6. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	13873.377	3032.542		4.575	.002
1	Cost of Collection	-6.293	1.482	-.609	-4.247	.003
	Accountability	-458.507	117.799	-.558	-3.892	.005

a. Dependent Variable: Indirect Tax

Table 6 reveals the value of the integers of the regression model that is derived in the analysis on hypothesis two. It reveals that the value of the intercept is positive while that representing the cost of collection and accountability are negative.

Discussion

The result of the study reveals that cost of collection of tax revenue have a significant strong positive influence on the collection of direct tax revenue generated in Nigeria. This is represented by the adjusted R square of 74.3% on Table 1. It also shows that the computed p-value is 0.02. This is contrary to the position of Mallick (2021) who posits that tax governance does not have a significant effect on tax administration. From this study, it shows that tax governance indeed has a significant effect on tax revenue level. A possible reason for this can be explained from the theory of cost where some step-fixed cost or the actual fixed cost won't lead to a direct change in cost in reaction to the activity level, in this case which is the amount of tax revenue. However, the outcome of this study seems to be in tandem with the cost-benefit theory which shows a need for a change in the way cost of collection of the Federal Inland Revenue Service is been authorized and incurred such that cost is minimized.

The result of test of the second hypothesis, shows the result of tax collection cost has a strong positive influence on the amount of indirect tax generated in Nigeria. This shown by the adjusted R square of 80% on Table 4. It also shows a p-value of 0.001 which suggests that tax efficiency does have a significant influence on indirect tax collection in Nigeria. This position is also similar to the result of the first hypothesis which is on direct tax. This position is in agreement with the position of the cost-benefit theory. It therefore means that the cost incurred need to be managed so as to boost indirect tax which is collected as revenue to the government in Nigeria. Toma and Toma (1992) in this regard posit that the use of consultant to collect government tax revenue might be more effective.

Conclusion

This study was set-up to assess the influence of tax collection efficiency cost on tax revenue generation in Nigeria. The outcome from this study shows that tax collection efficiency has a strong positive influence on direct tax revenue generation in Nigeria. It also reveals that tax collection efficiency has a strong positive influence on indirect tax collected as revenue by the government in Nigeria. It is concluded from this study that tax collection efficiency does have a significant influence on the collection of tax revenue in Nigeria.

There is a need to review the current provision of the law and practice that allows the Federal Inland Revenue Service incur cost based on the tax revenue generated as this will promote innovation on cost of collection of direct taxes. In addition, the annual reports of the Federal Inland Revenue Service need to be made available publicly to create public confidence in the revenue agency and encourage tax payers to have faith in the revenue agency and remove agitations against the revenue service right to deduction at revenue source to cover their overhead cost.

Lastly, in respect to indirect tax revenue the revenue agency can intensify its effort in identifying eligible tax payers who evade indirect taxes as the cost incurred in doing this won't be significant but those identified will add continuously to the revenue generated from indirect taxes.

References

- Ahmed, A. B., & Bello, M. (2015). Regulatory Failures and the collapse of the capital market in Nigeria: Aligning responsibilities with accountability. *Journal of Law, Policy and Globalization*, XXXX, 167-184.

- Audu, I. S., & Ishola, K. (2021). Digital economy and tax administration in Nigeria. *Global Scientific Journals*, 9(9), 1251-1262.
- Audu, S. I. (2020). Pattern of spending and the level of tax revenue in Nigeria. *International Journal of Research and Innovation in Social Science*, 4(9), 561-567.
- Audu, S. I., & Ajibade, A. (2021). Value added tax allocation and human development among states in Nigeria. *International Journal of Innovative Research in Accounting and Sustainability*, 6(4), 48-57.
- Babatope, B. B., & Audu, S. I. (2020). Accountability and economic growth in Nigeria Pre COVID-19. *African Journal of Sustainable Development*, 10(3), 61-75.
- Brautigam, D. (2002). Building leviathan: revenue, state capacity and governance. *Institute of Development Studies*, 33.
- Brun, J. F., Chambas, G., Tapsoba, J., & Wandaogo, A. A. (n.d.). Are ICT's boosting a tax revenues? Evidence from developing countries. *Etudes et Documents*, n09, CERDI.
- Campbell, H. F., & Brown, R. (2003). *Incorporating risk in benefit-cost analysis*. Cambridge: Cambridge University Press.
- Chatama, Y. J. (2013). The impact of ICT on taxation: the case of large taxpayer department of Tanzania Revenue Authority. *Developing Country Studies*, 3(2), 91-100.
- Clawson, M., & Knetsch, J. L. (1966). *Economics of outdoor recreation*. Baltimore: John Hopkins Press.
- Huang, S. H., Yu, M. M., Hwang, M. S., Wei, Y. S., & Chen, M. H. (2017). Efficiency of tax collection and tax management in Taiwan's local tax offices. *Pacific Economic Review*, 1-29. doi:10.1111/1468-0106.12235
- Kwaji, S. F., & Dabari, I. J. (2017). Empirical analysis of tax revenue collection by the Federal Government in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 5(2), 1-11.
- Mallick, H. (2021). Do governance quality and ICT infrastructure influence the tax revenue mobilization? An empirical analysis for India. *Economic Change and Restructuring*, 54, 371-415. doi:10.1007/s10644-020-09282-9
- Nurmi, V., & Ahtiainen, H. (2018). Distributional weights in environmental valuation and cost-benefit analysis: Theory and practice. *Ecological Economics*, 150, 217-228.
- Omolehinwa, O. E., & Naiyeju, J. K. (2015). *Government Accounting in Nigeria: An IPSAS Approach*. Lagos: Punmark Nigeria Limited.
- Persky, J. (2001). Retrospectives: cost-benefit analysis and the classical creed. *Journal of Economic Perspectives*, 15(4), 199-208. doi:10.1257/jep.15.4.199
- Shahroodi, S. M. (2010). Investigation of the effective factors in the efficiency of tax system. *Journal of Accounting and Taxation*, 2(3), 42-45.

- Taghavinezhadian, S. H. (1990). Investigation of effects of organizational structure on the efficiency of the direct taxes organization. *Unpublished Master's Thesis, Tehran University*.
- Toma, E. F., & Toma, M. (1992). Tax collection with agency costs: Private contracting or government bureaucrats? *Economica*, 59, 107-120.
- Wiener, J. B. (2013). The diffusion of regulatory oversight. In M. A. Livermore, & R. L. Revesz, *The globalization of cost-benefit analysis in environmental policy*. New York: Oxford University Press.

Appendix

Table 7. Actual Specific Tax Revenue Generated

Actual	PPT	CIT	Gas Income	CGT	Stamp Duty	Total	VAT	EDT	NITDEF
	N'M	N'M	N'M	N'M	N'M	N'M	N'M	N'M	N'M
2011	3070.59	654.448	45.2271	9.3045	6.4623	3786.03	659.154	130.742	8.6751
2012	3201.32	820.566	9.727	8.9166	7.3828	2693.6	710.555	188.436	9.1379
2013	2666.37	963.451	7.7269	19.6559	7.6025	3664.8	802.684	279.359	9.8569
2014	2453.95	1173.49	17.7498	2.6498	10.9436	3658.78	802.965	189.614	9.9082
2015	1289.96	1268.98	115.569	16.802	7.0845	2698.39	767.334	206.04	12.2487
2016	1157.81	933.537	85.8781	99.4034	5.903	2282.53	828.199	130.123	6.748
2017	1520.48	1215.06	34.8386	3.1803	8.9335	2782.49	972.348	154.957	10.134
2018	2467.58	1340.33	75.9878	12.5947	15.7974	3912.29	1108.04	203.285	11.8533
2019	2114.27	1604.7	21.9302	5.977	18.192	3765.07	1189.98	221.058	15.1812
2020	1516.99	1275.38	134.063	3.5186	120.157	3050.11	1531.17	259.563	18.0142
2021	2008.45	1747.99	140.1	17.5	33.94	3947.98	2072.85	189.54	19.31

Source: FIRS Website

Table 8. Cost incurred by FIRS

Cost	Actual
N Billion	
2011	324
2012	350.5
2013	336.4
2014	330
2015	261.9
2016	231.2
2017	280
2018	108.07
2019	117.84
2020	122.8
2021	171.2

Source: 1. Fair Tax Monitoring Group
2. FIRS 2021 Annual Report

Table 9. Accountability Index

Year	%
2011	27
2012	25
2013	27
2014	26
2015	28
2016	27
2017	27
2018	27
2019	26
2020	25
2021	24

Source: Transparency International