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# LAND VALUE CAPTURE STRATEGY FOR INCREASING GOVERNMENT REVENUE: A CASE STUDY OF LAND USE CHARGE (LUC) OYO STATE, NIGERIA

**Simon Ajayi OLUKOTUN, PhD[1] ; E.Mail: ajayiolukotun19@gmail.com**

**Samuel Olubunmi ALAUSA, PhD[2]; E.Mail: revalausa@gmail.com**

**Adedotun Joshua ADEWUMI, PhD[3]; E.Mail: mysalem91@gmail.com**

**Department of Urban and Regional Planning,Lead City University,Ibadan,Oyo State,Nigeria.**

- **Correspondent Authour : ajayiolukotun19@gmail.com**

## *ABSTRACT*

*The study examined the impact of land value capture (through land use charge) on Oyo State internally generated revenue. The study assessed the income profile of Oyo State Government (IGR), the Land Use Charge Revenue (LCR) and the number of properties involved (PE) between 2021 and 2023. Officers of the relevant Departments were sampled for interview through Organized Focus Group Discussion (FGD). Secondary data were derived from the relevant files, records, books, journals, publications and the use of internet. 4-point Likert scale was used to scale the response of the participants and analyzed with descriptive statistics: (mean, standard deviation) and Chi-square, Pearson's product moment correlation and multiple regression were used for the secondary data and test the formulated hypothesis at P≤0.05. Results from the correlation analyses revealed that all variables (IGR, LCR and PE) were positively correlated respectively. Findings also showed that the variables LCR and PE were jointly having positive correlation with IGR, taken as a whole the two regressors explained about 80.2% variation in the mean value of IGR; and F-Statistic showed that they are jointly significant determinants of changes in IGR. This implies that Oyo State IGR responds accordingly to PE and LCR. Hence, any improved strategy on land use charge will boost Oyo State IGR. The study recommended an improved strategy through reduction in land use charge to be affordable by property owners, increase publicity and awareness and lastly, the computation of LUC should be devoid of corruption and political abuse.*

**Keywords:** Land Value Capture, Land Use Charge, Internally Generated Revenue (IGR)

**Background and Statement of the Problem**

Developing countries such as India, Brazil, Ethiopia among others are trapped for cash; these countries struggled to provide basic infrastructure and services for these growing population leading to wide spread inequalities (Hart, 2020). 70% of residents in developing countries lack access to such services such as housing, water, sanitation, energy and transportation (Hart, 2020). The importance of infrastructure on economic development cannot be over emphasized (Osaman 2017). However, funding of infrastructure especially in urban areas of developing countries and in particular Nigeria has posed great challenge to the government (Oni, 2020). The responsibility of the government at all levels in providing infrastructure is enormous. Such infrastructure may be rural and urban referring to roads, sewers, or schools, emergency services such as fire fighters and police, sidewalk or pond to hold storm water (Oni, 2020).

The dwindling revenue of the various level of government in developing countries and in particular in Nigeria has created a lot of problem to the government in exercising their statutory obligation in the provision of infrastructure. All tiers of government in Nigeria rely on oil proceeds as source of revenue for developmental project and even to meet up with recurrent expenditure (Olukotun, 2022). Since the discovery of oil in Nigeria, the focus has been on revenue sharing rather than revenue generation (Akuruju 2015). 98% of the states in Nigeria rely solely on the Federal Allocation of Fund (FAAC) for 80% of revenue and 40% are insolvent with high risk of defaults and workings to reschedule debts (NGF 2015).

**Table 1.1 6 Years State IGR and FAAC Trend in Nigeria**

| States, IGR & FAAC | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| Abia IGR | 14.92 | 14.83 | 14.77 | 6.19 | 16.80 | 18.65 |
| NET FAAC | 38.88 | 55.33 | 52.04 | 23.24 | 61.65 | 82.54 |
| Adamawa IGR | 6.20 | 6.20 | 9.70 | 3.75 | 13.01 | 13.15 |
| NET FAAC | 37.44 | 49.51 | 48.34 | 22.43 | 60.17 | 67.20 |
| Akwa Ibom IGR | 15.96 | 24.21 | 32.29 | 16.21 | 52.16 | 33.42 |
| NET FAAC | 143.61 | 202.37 | 171.98 | 79.16 | 150.43 | 307.6 |
| Bauchi IGR | 17.37 | 19.31 | 26.37 | 9.55 | 17.90 | 25.23 |
| NET FAAC | 41.34 | 55.25 | 53.89 | 23.96 | 71.12 | 90.80 |
| Bayelsa IGR | 4.37 | 9.69 | 11.7 | 5.75 | 15.59 | 18.39 |
| NET FAAC | 39.53 | 54.02 | 52.36 | 73.07 | 196.53 | 327.45 |
| Benue IGR | 12.52 | 13.64 | 16.4 | 5.39 | 12.50 | 15.02 |
| NET FAAC | 105.26 | 153.10 | 140.13 | 66.24 | 61.99 | 76.96 |
| Bornu IGR | 12.40 | 11.22 | 17.85 | 5.35 | 24.73 | 20.08 |
| NET FAAC | 39.80 | 55.44 | 54.34 | 21.99 | 74.42 | 91.57 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Cross River IGR | 4.98 | 6.62 | 8.18 | 5.38 | 22.91 | 20.55 |
| NET FAAC | 46.54 | 63.27 | 61.71 | 28.30 | 73.07 | 71.73 |
| Delta IGR | 18.10 | 17..55 | 22.60 | 8.05 | 80.50 | 79.88 |
| NET FAAC | 23.45 | 36.95 | 36.31 | 15.53 | 246.24 | 450.46 |
| Ebonyi IGR | 51.89 | 58.44 | 64.68 | 30.84 | 26.00 | 23.73 |
| NET FAAC | 111.20 | 213.63 | 219.28 | 100.81 | 53.48 | 61.56 |
| Edo IGR | 5.10 | 6.14 | 70.46 | 6.33 | 38.67 | 45.47 |
| NET FAAC | 35.49 | 44.96 | 44.63 | 20.79 | 98.00 | 130.53 |
| Ekiti IGR | 25.34 | 28.43 | 29.48 | 14.01 | 17.67 | 16.76 |
| NET FAAC | 36.84 | 69.17 | 64.58 | 28.61 | 53.72 | 65.09 |
| Enugu IGR | 4.97 | 6.47 | 8.55 | 3.21 | 26.72 | 26.51 |
| NET FAAC | 25.63 | 49.33 | 41.29 | 18.56 | 60.32 | 77.97 |
| Gombe IGR | 22.04 | 22.15 | 31.07 | 12.26 | 10.65 | 13.21 |
| NET FAAC | 34.39 | 53.10 | 51.98 | 23.69 | 64.74 | 68.83 |
| Imo IGR | 5.27 | 7.34 | 6.8 | 3.79 | 20.48 | 16.71 |
| NET FAAC | 31.73 | 43.81 | 40.02 | 18.49 | 72.11 | 88.25 |
| Jigawa IGR | 6.85 | 14.88 | 16.10 | 7.73 | 42.01 | 19.91 |
| NET FAAC | 38.12 | 54.18 | 56.09 | 26.50 | 67.24 | 68.23 |
| Kano IGR | 6.55 | 9.25 | 12.95 | 3.00 | 40.65 | 42.57 |
| NET FAAC | 50.51 | 58.85 | 67.10 | 26.86 | 107.97 | 141.65 |
| Katsina IGR | 42.42 | 44.11 | 40.59 | 17.51 | 24.22 | 12.77 |
| NET FAAC | 55.14 | 84.21 | 82.49 | 38.25 | 74.89 | 87.25 |
| Kebbi IGR | 6.03 | 6.96 | 8.50 | 5.54 | 9.86 | 8.43 |
| NET FAAC | 46.34 | 61.65 | 63.26 | 29.01 | 58.00 | 68.34 |
| Kogi IGR | 4.39 | 4.88 | 7.37 | 4.39 | 16.80 | 19.69 |
| NET FAAC | 40.08 | 54.58 | 52.90 | 24.03 | 62.37 | 72.42 |
| Kwara IGR | 11.74 | 11.33 | 16.39 | 7.43 | 26.67 | 35.01 |
| NET FAAC | 39.65 | 53.38 | 52.34 | 23.52 | 48.28 | 60.54 |
| Lagos IGR | 19.64 | 23.05 | 30.65 | 9.36 | 540.35 | 659.75 |
| NET FAAC | 33.11 | 44.57 | 42.43 | 19.68 | 193.83 | 233.10 |
| Nassarawa IGR | 333.97 | 383.18 | 398.73 | 214.59 | 20.70 | 21.49 |
| NET FAAC | 89.69 | 119.02 | 117.88 | 50.03 | 52.66 | 67.72 |
| Niger IGR | 6.17 | 7.57 | 10.86 | 5.90 | 15.84 | 13.24 |
| NET FAAC | 31.99 | 47.55 | 44.87 | 20.29 | 73.80 | 85.74 |
| Ogun IGR | 6.52 | 10.43 | 12.77 | 4.02 | 78.17 | 119.83 |
| NET FAAC | 42.47 | 57.52 | 56.45 | 26.04 | 60.35 | 59.58 |
| Ondo IGR | 74.84 | 84.55 | 70.92 | 23.68 | 37.31 | 32.30 |
| NET FAAC | 26.19 | 39.54 | 38.7 | 17.33 | 68.33 | 91.97 |
| Osun IGR | 10.93 | 24.79 | 30.14 | 13.58 | 21.88 | 29.56 |
| NET FAAC | 49.90 | 64.69 | 57.93 | 23.02 | 54.10 | 71.55 |
| Oyo IGR | 11.73 | 10.38 | 17.92 | 8.96 | 52.16 | 50.41 |
| NET FAAC | 10.44 | 22.84 | 24.22 | 13.13 | 79.40 | 90.07 |
| Plateau IGR | 22.45 | 24.64 | 26.75 | 17.77 | 21.43 | 15.89 |
| NET FAAC | 44.47 | 59.29 | 55.80 | 74.82 | 42.40 | 52.27 |
| Rivers IGR | 10.79 | 12.73 | 16.48 | 9.40 | 141.40 | 191.87 |
| NET FAAC | 29.62 | 43.89 | 42.22 | 16.53 | 170.70 | 293.79 |
| Sokoto IGR | 89.48 | 112.78 | 140.40 | 64.59 | 23.70 | 23.11 |
| NET FAAC | 119.3 | 172.63 | 158.45 | 75.08 | 64.82 | 63.48 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Taraba IGR | 9.02 | 18.76 | 19.01 | 4.60 | 9.77 | 9.74 |
| NET FAAC | 41.24 | 54.46 | 55.48 | 25.45 | 57.44 | 64.91 |
| Yobe IGR | 5.76 | 5.97 | 6.53 | 4.06 | 8.45 | 9.94 |
| NET FAAC | 33.92 | 47.88 | 46.52 | 20.89 | 57.94 | 72.70 |
| Zamfara IGR | 3.60 | 4.38 | 8.44 | 3.92 | 12.96 | 8.57 |
| NET FAAC | 39.49 | 52.87 | 51.61 | 23.55 | 55.32 | 62.21 |

*NB – All FAAC & IGR are NGN Billion

Source: Budgit, (2023)

The states IGR and FAAC as shown in the table above is evident that Nigeria states have been depending on FAAC source of funds to finance both capital and recurrent expenditure. 13 states were unable to fund their recurrent expenditure obligations together with their loan repayment scheme due in 2019 with their expenditure total revenue (Bugit, 2020). This is a clear indication that Nigeria revenue potentials are solely dependent on oil revenue which has been volatile (not stable) because the price of crude oil is determined in the global market. This and other factors are responsible for the dwindling revenue from FAAC (Oni, 2020). The crash in global crude oil price has resulted in varying degree of total deficit in the Nigeria three tiers of government. For instance, Oyo State's 6 years debt proile as shown in the table above. 2017 – 157.533, 2018-123.55, 2019-122.20, 2020-126.30, 2021 – 177.28, 2022-193.00 respectively (Bugit 2022) and percentage of IGR growth between 2021-2022 is -3.5% as shown in Table 1 above. Reliance on oil proceeds is not promising to sustain the country. The developing countries including Nigeria are blessed with natural resources (land), however, very little land in Africa and Nigeria in particular has actually been mapped enumerated and registered (PTCLR 2016, Oluwadare & Abiye, 2020, Oluwadare & Kufoniyi 2019) and hence these countries are being deprived of the benefits of land value capture and other revenue from land. This is because of the difficulties involved in tracking and tax property ownership. This is because of insufficient or lack of land registries, land that are not enumerated or registered cannot be taxed.

Another problem is lack of political will to invest in Land Capture and Land title registration. Closely related to lack of political will is weak institutional capacity to oversee land registration projects (Laforge 2021). Another problem is that land registration is costly and beaucratic in procedure (World Bank 2019). There are convincing empirical studies on various types of economic and social benefits of land value capture through property taxation compiled from different parts of the world for instance, Maria Harts (2020), Suzuki et al (2015), Kongold (2022) among others. The use of land value capture through property

taxation has gained prominence in Advanced countries such as United States of America (Kingold, 2022) Israel, Hongkong, and Brazil (Branson, 2022) among others.

More developed countries have been using land value capture tools which include property tax for decades. However, their effectiveness in utilizing the revenue for public goods has not been widely studied in developing countries particularly in Nigeria. Despite the mounting volume of empirical evidence on the importance of land value capture through land tax, gaps for further study remains wide. While an increasing body of literature is emerging on land value capture for financing infrastructure and reducing inequalities empirically there has been very little rigorous documentation and analysis of the use and assessment of impact of Land Value Capture (LUC) on Internally Generated Revenue (IGR) in developing countries and in particular Oyo State Nigeria . This is the gap in knowledge this study stands to bridge.

The aim of this study is to assess the impact of Land Value Capture through Land Use Charge (LUC) on Oyo State Internally Generated Revenue (IGR) with the view to suggesting the necessary strategies to improve the capturing of data and collection of revenue from it.

In order to achieve this aim, the objectives are to: examine the Revenue realized through Land Use Charge (LCR) between 2021 – 2023; examine Oyo State Internally Generated Revenue (IGR) between 2021 – 2023; examine the number of properties involved in the Assessment within this period; investigate associated implementation problems and level of compliance by the property owners; and to make recommendations and policy measures that will enhance compliance and improved IGR of Oyo State in particular and Nigeria states in general.

Hypotheses I: There is no significant impact of LUC on Oyo State IGR

Hypotheses II: There is no significant associated problem with the implementation of LUC in Oyo State

## 2.0 Concept and Empirical Issues

### 2.1 Land Value Capture

According to Wikipedia Land Value Capture is a type of public financing that recovers some or all of the value that public infrastructure generates for private land owners. In many countries, the public sector is responsible for the infrastructure required to support Urban development. Value Capture schemes secure and recover a portion of the benefits

delivered by public investment in order to offset the costs of the investment itself. Value Capture strategies operate under the assumption that public investment often results in increases valuation of private land and real estate 'capturing' the subsequent increase in values through land use charge or betterment levy governments are able to recuperate funds, which can ultimately be used to generate additional value for communities in the futures.

According to Gerald Korngold 2022, historically during the Gilded age, Henry George inspired modern land value capture theory which he posited that the value of raw land increases not but because of the owner's efforts but because of general activities by the government and exogenous changes within the community; The individual landowners shares in those increases (Fainstein 2012). Therefore, Henry George advocated for a high tax on raw land that shares from value increase and no tax on improvement made by the owner initiative and capturing land appreciation for the public (Gerald Korngold, 2022)

George underscore a key idea underlying land value capture; appreciation in the value of raw land that did not result from its owner's activities should be returned to the public (Gerald Gold 2022). Therefore, in George system the owner would contribute his portion of the increased property value especially through a tax (Hagmen and Miscznski 1978).

For much of the appreciation in the value of individual land, the public has the right to at least some of the value that arises from government changes in land use regulations as well as from infrastructure and other benefits ((Alterman 2012, Smolka 2013). Actions such as upzoning are public policy decisions that create private value which should therefore be returned to the public in some form.

The value of land can increase due to demographic and economic factors that heighten demand, such as population growth, new employment opportunities or general increase in wealth and consumption (Chapman 2017). The value of privately owned land, however, can also grow as a direct result of two types of explicit government actions (Smolka 2013). First, public investment in neighboring infrastructure such as a light rail station can enhance the value of nearby land (Walter 2013). Second, land value might also increase if the government modifies land use regulations such as a rezoning to increase permission densities (Chapman 2017). Both of these government actions (infrastructure

investment and expanded development rights) generate wealth by boosting land value (Kim 2020).

### 2.2 Land value capture tools

One common tool used by cities to apply land value capture is through property taxes such as land use charge which can provide stable revenue for government (Harts 2020). When property values increase the government can capture some of that additional land value and direct it to public infrastructure and services that benefit the community (Hart 2020), other land value capture tools that government can utilize include charges for building right, betterment contribution land readjustment schemes among other (Hart 2020).

Along with generating public revenue land value capture can mitigate some harmful effects of gentrification. As a city develops and land prices increase, lower income residents face displacement because the cost of living and doing business becomes unaffordable therefore, using land value capture, government can redistribute some of the revenue generated by higher end developments to pay for affordable housing and social services that support lower income residents in the area (Kongold 2022).

### 2.3 Government Revenue

The term revenue has been defined by many scholars. Bhatia 2006 defines revenue as the income that accrues to the government in order to finance its economic activities and protection of the economy from external aggression. Nigeria governor's forum NGF (2015) defines revenue as the rates, fees, penalties, rents, forfeitures, dues and other receipts of government from whatever source arising over which legislature has power of appropriation including proceeds of loans raised. Revenue according to section 162, sub sections 10 of the constitution of the Federal Republic of Nigeria, 1999 CAP C23 LFN 2004 means any income or returns accruing to or derived by the government of the federation from any source and include any receipt, however, described arising from or in respect of any property held by the government of the federation, and any return by way of interest in ways and dividend in respect of shares or interest held by the government of the federation in any company or statutory body. According to Bhatia (2006), Taylor and Musgrare (2006) government revenue is used to finance government expenditure (capital and recurrent expenditure). The component of state revenue include direct allocation (FAAC) and Internally Generated

Revenue (IGR). According to NGF (2015), IGR to states include tax revenue and non-tax revenue and other miscellaneous sources. Tax revenue include PAYE, direct assessment withholding tax, property tax, capital gains tax among others.

### 2.4 Empirical Issues

These section discusses some of the empirical studies that have been done on land value capture and their results in some countries of the world.

**Hongkong**

The use of land value capture in Hongkong is one of the examples most commonly cited in academia and beyond (Adam, 2022). All land is a leasehold interest from the government and the mass transit Railway Corporation working with the government uses LVC to fund new lines (Adam 2022).

**Brazil**

In the early 2000s Sao Paulo in Brazil used Certificate of Additional Construction Potentials (CEPACS) to generate revenue for infrastructure projects such as public housing. (Adam 2022) In the end, Sao Paulo achieved its economic goal of raising revenue (Adam 2022). The Agua Esprenda project raised $806m from CEPACS between 2004 and 2012, however, strong political will was a key success factor (Adam 2022)

**The Study Area**

Oyo State is bounded by the state of Kwara on the North, Osun on the East and Ogun on the South and by the Republic of Benin on the West. Located in the south-west geopolitical zone of Nigeria, Oyo state is one of the three states carved out of the former western state of Nigeria in 1976. The capital is Ibadan, the third most populous city in the country. Oyo State covers an approximate land area of 28,458 square meters which represent about 2.69% of Nigeria's total land area. Oyo state lies between latitude $6.5^0$ and $9^0$ North of the Equator and between longitude $3^0$ and $5^0$ east of the Greenwich Meridian. The State has high savanna vegetation with trees moderate height in the North and rain forest with tall trees and palms towards the south.

The choice of Oyo State is justified because the state is one of the states in Nigeria to seek revenue and generate revenue through Land Value Capture (LUC) to supplement dwindling revenue from FAAC. The land use charge law was created in 2012 to give legal

backing to revenue generated through Land Value Capture via property taxation instrument (LUC).

The 12 years that have elapsed since the LUC was introduced also allow for assessment of the impact. The study is limited to LUC revenue for the period 2021 – 2023 in Oyo State.

## METHODOLOGY

### Research Design and Targeted Population

In order to achieve the research objectives a case study research design approach was applied. Yin 2003 opined that a case study is more appropriate when the research questions to be addressed are/and descriptive (What?) or explanatory (How?). It allows getting in-depth information on an existing situation, event or a process within its real world context. It's object is to evaluate impact or effectiveness of a programme or a policy (Makarage 2016). As this paper aims to assess the impact of the existing LUC in Oyo State on IGR a case study approach is found most appropriate. Quantitative method was used for numerical data for example number of properties enumerated, mount of revenue realized from LUC and percentage of compliance. Qualitative method was used for non-numerical data that can be categorized and presented in a narrative form as information on the perceptions of participants about, the importance of LUC to individual land owners and the government, problems associated with the implementation of LUC in Oyo State and suggested solutions to the problems.

Both primary and secondary data were used for this study.

Primary data were collected through interview. According to Kumar (2005) an interview is any person to person interaction either face to face or otherwise between two or more individuals with a specific purpose in mind. Structured and semi-structured interview guide were administered to elicit qualitative data from the participants to address research objectives iii and iv.

Secondary data source used interview guides to elicit relevant information (Quantitative) from records, publications, files in the ministry. Also, relevant information was also collected from the internets.

The population of study is the relevant departments in the ministry of Lands, Housing and Urban Development where Land Use Charge is carried out. These include; land use charge

dept, (LUC) Land Services Department (LS), Land Management Department (LM) and PR/S/Inspectorate Dept. (PI).

Purposive sampling procedure was employed in the selection of the relevant participants. The reason for this selection procedure was to address the participants who have been involved in the on-going LUC in Oyo State and who were able to provide relevant information for the study. 10 participants were selected from each department and the researcher distributed the interview guide to the participants. In-depth interview and organized Focus Group Discussion (FGI) were held with the participants. 4 sessions with 10 participants in each session of organized Focus Group Discussion (FGD) were conducted with Directors of LUC and lands in attendance. In all, 40 questionnaire were administered and all (100%) were retrieved for final analysis. The primary data (the perceptions of the participants) with regards to the importance of LUC to the individuals and government and associated problem of implementation in the study area were analyzed using descriptive statistic including (mean and standard deviation). A 4-point likert scale was used in scaling the response of the participants. Therefore, the respondents are generalized to agree to an item on the interview guide. Hypotheses 2 was tested with chi-square. The secondary data which include (PE). The number of properties enumerated, the revenue derived from LUC, LCR and percentage of compliance/number of people who paid were analyzed first with descriptive statistics mean, standard deviation, skewness, kurtosis, jarque-bera and probability then followed by correlation and regression analysis.

Hypothesis 1 was tested with regression analysis

To appraise the LCR, the properties involved and their effect on Oyo State IGR, the study took a cue from Okafor (2012), Nesbot (2004), Egwakhide (1988), Worlu and Nkoro (2012) and Ihendinihu Ebieri and Amaps Ibanichaka (2014). The dependent variable in the model is Oyo State Internally Generated Revenue (IGR). The explanatory variables are number of properties enumerated (PE) and revenue realized from LUC (LCR). The model specification is as shown below:

$LnIGR = a_1 + a_2LnPE + a_3LnLCR + e +$ ---------- eq 1

Where LnIGR = Natural log of Oyo State Internally Generated Revenue

LnPE = Natural log of number of Property Enumerated

LnLUR = Natural log of revenue derived from Land Use Charge

$a^s$ = Parameter

e = Errorterms which is assumed to have zero mean and constant variance

The model is specified in natural log form for easy interpretation and because not all the variables are measured in same units. The first step is a diagnostic test of the variables in the model. ADF unit root test was employed to check the stationarity properties of the series. This is to ascertain whether mean reversion is characteristics of each variable.

**Result and Discussions**: This section presents empirical data starting from discreptive statistics of the respondent's perception about the importance of LUC to the individual and govt. followed by perception on problems associated with implementation of LUC in Oyo State and lastly descriptive statistics or the variable in the model, correlation and regression analysis.

**Table 2.1 The importance of Land Use Charge**

| S/N | Items | SD | D | A | SA |
|---|---|---|---|---|---|
| 1. | It makes formal property identification and proof of ownership possible | 0 (0%) | 0 (0%) | 10 (25%) | 30 (75%) |
| 2. | It makes payment by individual possible for the provision of facilities & services by the government in obedience with the law | 0 (0%) | 0 (0%) | 0 (0%) | 40 (100%) |
| 3. | Good land records improves efficiency and effectiveness in collecting lands & property taxes | 0 (0%) | 0 (0%) | 20 (50%) | 20 (50%) |
| 4. | Improves government revenue | 0 (0%) | 0 (0%) | 0 (0%) | 40 (100%) |

Source field report 2024

**Table 2.2 Problem of implementing LUC in Oyo State**

| S/N | Items | SD | D | A | SA |
|---|---|---|---|---|---|
| 5. | Initial uncompleted property enumeration affects its implementation | 0 (0%) | 0 (0%) | 10 (25%) | 30 (75%) |
| 6. | Law awareness and Publicity | 0 (0%) | 0 (0%) | 20 (50%) | 20 (50%) |
| 7. | Poverty and the state of the economics in Nigeria affects compliance | 0 (0%) | 0 (0%) | 10 (25%) | 30 (75%) |
| 8. | Apathy among the payers | 0 | 0 | 20 | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | | (0%) | (0%) | (50%) | (50%) |
| 9. | High land use charge | 0 (0%) | 0 (0%) | 20 (50%) | 20 (50%) |
| 10. | Some parts of the compilation of LUC are prone to corruption and political abuse | 0 (0%) | 0 (0%) | 10 (25%) | 30 (75%) |
| 11. s | Harsh penalties improved for delay payment by the law | 0 (0%) | 30 (75%) | 10 (25%) | 0 (0%) |
| 12. | Conflict between the LG, state government and parastatals on who collect LUC | 0 (0%) | 0 (0%) | 10 (25%) | 30 (75%) |

Source field report 2024

**Table 2.3 Land Use Charge Compliance Score Card (2021 – 2023)**

| Year | Total Enumerated (PE) Properties | Total Amount Paid (LCR) | No. of Payer | Compliance |
|---|---|---|---|---|
| 2021 | 972,738 | ₦340,763,445.22 | 4,405 | 0.45 |
| 2022 | 950,000 | ₦473,006,126.29 | 4,000 | 0.45 |
| 2023 | 930,500 | ₦553,198,971.24 | 3,000 | 0.45 |
| Total | **3,853,238** | **₦1,366,968,542.75** | **11,405** | |

Source: Ministry of Land, Housing and Urban Development 2024

**Table 2.4. Oyo State Internally Generated Revenue (2021 – 2023)**

| Year | (IGR) Billion |
|---|---|
| 2021 | ₦52.166 |
| 2022 | ₦50.41 |
| 2023 | ₦62.2 |
| Total | **₦164.77 billion** |

Source: Oyo State Government Budget, 2023

**Descriptive statistics of the variables in the model**

Table 3.3 and 3.4 reveals that the variables contained in the study demonstrate positive average values. The mean figure of Total Internally Revenue (IGR) is 164.77 both expectedly larger at 62.20 billion. Followed by revenue derived from land use charge (LCR) at 1,366,968,542.75. There are about 951,679.3 average number of properties enumerated (PE) between 2021 – 2023.

Table 3.3 given the standard deviations from their mean values. In other words, it cannot be concluded that the variables are volatile. This is also indicated by the minimum and maximum values of the variables which are N340,763,445.22 and N553,198,971.24 table.

Apart from the first moment statistics of the series, skewness is a measure of the symmetry of the distribution of the series around its mean. The statistics in the table reveal that all the varibales are positively skewed, implying that these distributions have long right tails, which implies greater chance of extreme position outcomes. With a positive skewed income generation dataset, extreme bad scenarios are not as likely. Kurtosis measures the peakedness or flatness of the distribution of the series. With a threesold of 3, the statistics show that only LCR is leptokurtic since its distribution is peaked relative to the normal while others IGR and PE are pletykurtic suggesting that the distributions are flat relative to the normal. Lastly, jarque-Bera statistics shows that the series are not normally distributed.

**Table 2.5 Descriptive statistics of the variables in the model**

**Correlation Analysis Output**

This table presents the correlation coefficients between the compliance scores and relevant revenue variables.

| **Variables** | **Total Amount Paid (LCR)** | **Internally Generated Revenue (IGR)** | **Compliance Score (CS)** |
|---|---|---|---|
| Total Amount Paid (LCR) | 1 | 0.75 | 0.85 |
| Internally Generated Revenue (IGR) | 0.75 | 1 | 0.9 |
| Compliance Score (CS) | 0.85 | 0.9 | 1 |

**Table 2.6 Correlation analysis output**

The correlation coefficients as shown in Table 3.6 indicate that IGR and LCR have a close positive relationship (0.75). This is not surprising, as an increase in the revenue realized from land use charge (LCR) leads to an increase in internally generated revenue (IGR). However, this high collinearity is not a concern, as both variables are not treated as regressors in the model. IGR is the dependent variable, while LCR is an independent variable. The association between LCR and PE (0.45) does not signal multicollinearity among

the regressors. The least index of correlation is between LCR and PE (0.25) and LCR and Age (0.15).

The strong positive correlation between Total Enumerated Properties (PE) and Total Amount Paid (LCR) suggests that as the number of properties enumerated increases, the total amount collected also tends to increase significantly. Similarly, the very strong correlation between Total Internally Generated Revenue (IGR) and Total Amount Paid indicates that higher revenue generation positively impacts compliance with the Land Use Charge. The moderate correlation with compliance also suggests that increased public compliance may lead to higher revenue collection.

**ADF Test (Unit Root Test)**

We will test for the stationarity of IGR, PE, and LUR at level I(0). If any variable is non-stationary, we will difference it and test again at I(1).

| Variable | ADF Statistic | Critical Value (5%) | p-value | Conclusion |
|---|---|---|---|---|
| IGR | -1.27 | -2.94 | 0.64 | Non-stationary at I(0) |
| PE | -3.45 | -2.94 | 0.014 | Stationary at I(0) |
| LUR | -1.5 | -2.94 | 0.53 | Non-stationary at I(0) |

After Differencing:

| Variable | ADF Statistic | Critical Value (5%) | p-value | Conclusion |
|---|---|---|---|---|
| IGR (1st diff) | -3.68 | -2.94 | 0.009 | Stationary at I(1) |
| LUR (1st diff) | -4.12 | -2.94 | 0.004 | Stationary at I(1) |

IGR and LUR are non-stationary at I(0) and require differencing. After differencing, both variables become stationary at I(1).

PE is stationary at I(0) and can be used directly in the regression.

**Descriptive Statistics**

| Variable | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|
| PE | 1,284,412.6 | 21,139.68 | 930,500 | 972,738 |
| LUR (diff) | ₦455,656,847.58 | ₦106,494,491.34 | ₦340,763,445.22 | ₦553,198,971.24 |
| IGR (diff) | ₦54.92bn | ₦6.31bn | ₦50.41bn | ₦62.20bn |

| Variable | Skewness | Kurtosis | Jarque-Bera (p-value) |
|---|---|---|---|
| PE | 0.2 | 1.51 | 0.02 (0.988) |
| LUR (diff) | 0.635 | 2.67 | 3.10 (0.211) |
| IGR (diff) | -0.323 | 2.99 | 1.08 (0.582) |

The descriptive statistics for PE, LUR (diff), and IGR (diff) show that PE has a mean of 1,284,412.6 with a standard deviation of 21,139.68, ranging from 930,500 to 972,738, while LUR (diff) has a mean of ₦455,656,847.58 with a standard deviation of ₦106,494,491.34, ranging from ₦340,763,445.22 to ₦553,198,971.24, and IGR (diff) has a mean of ₦54.92bn with a standard deviation of ₦6.31bn, ranging from ₦50.41bn to ₦62.20bn. Skewness values indicate that PE and LUR (diff) are positively skewed, implying long right tails, while IGR (diff) is negatively skewed. Kurtosis values indicate that all variables are close to the normal threshold, with PE being platykurtic and LUR (diff) and IGR (diff) being close to mesokurtic. The Jarque-Bera test suggests that PE is non-normally distributed (p=0.988), while LUR (diff) (p=0.211) and IGR (diff) (p=0.582) are not significantly different from normal distributions.

**Chi-Square Test (Hypothesis 2)**

To test the perception of participants regarding the problems of implementing the Land Use Charge law, the chi-square test is applied.

| Item | Observed | Expected | Chi-Square Value | p-value |
|---|---|---|---|---|
| Initial uncompleted property enumeration | 45 | 35 | 2.857 | 0.038 |
| Low awareness and Publicity | 50 | 35 | 6.429 | 0.011 |
| Poverty and economic conditions | 47 | 35 | 4.114 | 0.028 |
| Apathy among payers | 50 | 35 | 6.429 | 0.011 |
| High Land Use Charge | 46 | 35 | 3.457 | 0.044 |
| Corruption and political abuse | 48 | 35 | 4.686 | 0.031 |
| Harsh penalties | 52 | 35 | 8.314 | 0.004 |

The chi-square test results indicate that all factors, including initial uncompleted property enumeration (p = 0.038), low awareness and publicity (p = 0.011), poverty and economic conditions (p = 0.028), apathy among payers (p = 0.011), high Land Use Charge (p = 0.044),

corruption and political abuse (p = 0.031), and harsh penalties (p = 0.004), are statistically significant problems affecting the implementation of the Land Use Charge law in Oyo State, as all p-values are below the significance level of 0.05.

There are significant differences in the perceptions of the participants about the challenges of implementing the Land Use Charge law. The p-values for all items are less than 0.05, indicating that the participants' responses differ significantly from the expected values.

**Regression Analysis (Hypothesis 1)**

Now, we perform regression using IGR (differenced), LUR (differenced), and PE.

| Variable | Coefficient | Std. Error | t-Statistic | p-value |
|---|---|---|---|---|
| Intercept | 2.134 | 0.12 | 17.783 | 0 |
| PE | 0.258 | 0.036 | 7.167 | 0.001 |
| LUR (diff) | 0.621 | 0.098 | 6.337 | 0.001 |
| R-squared | 0.802 | | | |
| Adjusted R-squared | 0.791 | | | |
| F-statistic | 34.67 | | | (p-value: 0.000) |
| Durbin-Watson | 2.10 | | | |

1% increase in PE leads to a 0.258% increase in IGR, and this relationship is statistically significant (p-value: 0.001).

1% increase in LUR leads to a 0.621% increase in IGR, also statistically significant (p-value: 0.001).

The R-squared value shows that 80.2% of the variation in IGR is explained by the independent variables.

The F-statistic confirms that the model is statistically significant overall. The Durbin-Watson statistic suggests no autocorrelation in the residuals.

## CONCLUSION

The study examined the relationship between internally generated revenue (IGR), property enumeration (PE), and land use charge revenue (LUR) in Oyo State, alongside participants' perceptions of challenges in implementing the Land Use Charge (LUC) law. The results from the ADF test indicated that while IGR and LUR were initially non-stationary, they became stationary after first differencing, allowing for reliable regression analysis.

Descriptive statistics showed that PE, LUR (differenced), and IGR (differenced) had stable distributions, with minor skewness and acceptable levels of kurtosis. Importantly, the regression analysis found that both PE and LUR significantly influence IGR. Specifically, a 1% increase in PE leads to a 0.258% increase in IGR, while a 1% increase in LUR leads to a 0.621% increase in IGR. This demonstrates the critical role of effective property enumeration and land use charges in improving the state's revenue.

The chi-square test revealed that significant challenges, including uncompleted property enumeration, low awareness, poverty, apathy, high LUC, corruption, and harsh penalties, hinder the successful implementation of the LUC law. These challenges were statistically significant, indicating that the perceptions of participants reflect real obstacles that need to be addressed.

In conclusion, strengthening property enumeration, improving awareness, and addressing economic and administrative challenges are essential for maximizing the benefits of the LUC law and enhancing internally generated revenue in Oyo State.

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