

## CHAPTER ONE

### INTRODUCTION

#### 1.1. Background of the Study

Land is a very important resource, perhaps the most important natural resource, as it affects all aspects of people's lives and access to land is basic to human life. Most human activities that determine the existence of man are embedded on land and as a result every man is desirous to own land and better still develop it. Land is a scarce resource and its renewal or increase is usually an uphill task. Therefore it must be judiciously and efficiently managed in a sustainable manner for the use and good of all. It is for this reason that different countries the world over have evolved land tenure systems to protect various "interests" in land and for effective land governance and management (Atilola, 2010)

Prior to the enactment of the Land Use Decree No.6 of 1978, there were various land tenure systems existing in Nigeria that governed land administration. These were customary laws, which differed according to regions because of the differences in customs of the people. Thus there existed multiple land laws which were applied to regulate land ownership and tenure in the northern and southern region. This led to tremendous land speculation and a sharp rise in the prices of land for urban and infrastructural development (Mabogunje, 2007). Also, acquisition of land by government or individuals became a rigorous exercise. To put a break or hold to monopolies of landlords and make land available for public purpose, the Federal Military Government of Nigeria set up a panel to consider how best to solve the problems associated with land

tenure and administration in Nigeria. The recommendation of the panels brought into existence the Land Use Decree No. 29 of March 1978 now Land Use Act Cap L5 L.F.N. 2004. One of objectives for the promulgation of the Nigerian Land Use Act in 1978 was to check urban sprawl and land speculation (Federal Government of Nigeria (FGN), 1978). It aims to make land easily and cheaply accessible to the people especially in urban areas where land prices practically go through the roof as well as discourage land speculation and perpetuity in land ownership, hence the 99 years Certificate of Occupancy issue to land users (Abiama, 2011)

On the contrary, land has become increasingly difficult for people to secure for development in our urban areas as Land Use Act (LUA) has not eliminated speculation in land but rather fuels it. Factors like population growth, urban expansion, economic development and investments in infrastructure and services, has continued to increase demand for urban land. But due to the limited supply of land, speculation and ownership by a favored few, this demand is not satisfied. The income derived from the ownership of land is an “unearned” surplus which makes it a worthy tool to make land available, redistribute to the public the benefits of the unearned increase in land values and achieve social justice and equity. As land cannot be divided physically among all inhabitants of a community, collecting land value tax from land owners for public use presents a simple solution.

Land value tax or tax on real property transactions abound in Nigeria. They include: Companies income and Personal income Tax, Value Added Tax, Capital Gains Tax, Capital Transfer Tax, Stamp Duties Tax, Property Taxes, Land Use Charges (Lagos/Anambra State Land Use Charge laws), the Federal Capital Territory Property

Tax, Land rates and Tenement rates. Company income and Personal income tax are levied on any income from a property transaction by a corporation or individual; Withholding tax on real property which applies to both corporate bodies and individuals is applied on rent and requires the lessee to withhold five or ten per cent (5% or 10%) of the rent payable to the lessor (where the recipient of the income is a corporate body or individual respectively); Value Added Tax (VAT) is a tax on value of real estate goods and services and is applied at the rate of five per cent (5%) of the value; Capital Gains Tax of 10% is paid on the profit resulting from sale of any real estate asset by a Nigerian tax payer; Stamp duties tax is paid for all written instruments to make them admissible in any judicial proceeding in Nigeria; Federal Capital Territory Property Tax is a tax on all real property situated within the Federal Capital Territory (FCT).

The most popular land –based taxation in most states of the federation is Property rating. The practice as stipulated by the various states property rating laws is taxation of improvements. The property rating laws states that only development lands should be subjected to rating assessment (see section 67 of Enugu State of Nigeria Local Government Law, 2000). The tax base is improved site value, with a focus on annual (rental) value rather than capital value.

Land Use Charge Law which is practiced in a few states in Nigeria consolidated all real property tax with all land based rates and charges( which were formerly charged under the Assessment Law) into one single Property and Land Use Charge (e.g APLUC- Anambra State Property Land Use Charge). The payment of the Land Use Charge which is to be based on annual capital sum is to be paid by the owner. Land rates apply to state

allocated land and impose on the owner development levy, ground rents, premium, and other incidental rates.

This brief rundown of Nigeria's land -based taxes gives a clear picture most of the taxes revenue driven and they can be administered only at the point of consumption or transaction (except for property rates and land use charges). In the system, vacant land, underused land and unfinished structures/improvements largely or wholly escape taxation because they are believed to be non-beneficial to the owner. However, land (vacant/improved) values in the urban centers in Nigeria continue to increase over time as a result of development activities in the neighborhood and public utilities provided by public authorities without a corresponding taxation of this socially created value. The current land taxation system to a larger extent taxes improvement and to a lesser extent, land.

Land taxation is any levy that is land -based. It creates and uses national and/or local revenues from land and improvements over land. It can act as a tool to manage land use, urban density and expansion, discourage speculative transactions and encourage sustainable development. To sustain is to continue without lessening what exists (Brandon and Lombardi, 2011). Sustainable development provides framework to help ensure long-term ecological, social, and economic growth in society (Ding, 2008) and to ensure a better quality of life for everyone now and for generations to come (Ihuah, 2015).

In addition to the goal of encouraging sustainable development, LVT has been promoted by supporters as providing an added incentive to many of smart growth's design patterns

like; compact building design, dense neighborhoods, distinct communities with a sense of place and vitality, the re-population of downtowns and elimination of blight, economic vitality, and increased transit options (Spiers, 2010)

From the analysis above, it is suggested that a tool is needed which incorporates: revenue generation; infrastructure provision; taxation principles; intense land use and sustainable development. Thus the research seeks to explore how these concepts could operate within a framework which could provide for land to be managed in a sustainable manner. Therefore, the focus of this research is to analyse urban land value taxation as a tool for sustainable land use and development in Anambra State, Nigeria.

## **1.2 Statement of the Problem**

In the present system land speculators who hold land in lieu of times of scarcity disenable intending developers who are ready to develop by creating artificial scarcity, thereby making land not to be affordable for them. This singular act discourages intending developers, favors speculators who sit on vacant or underutilized land in the hearts of our cities and towns. This creates an artificial scarcity of land on the free market and drives up the price of land in general. Developers move further out of the urban area to get affordable land thus creating a vacuum between their improvements and the developed areas creating urban sprawl, squatter settlement that presents a scattered and untidy environment, which is a drag on economic productivity. In recent times residential structures are seen springing up in Nkwelle Ezunaka, and Ogbunike which are villages near Onitsha and Amansea near Awka. This development though not bad in itself has

resulted in scattered development and residential areas that lack the most basic amenity-road.

APLUC which is only a slight improvement on property rate penalizes improvements as taxes are deducted from those who are willing to improve their land or has already improved. It rewards non-maintenance of existing buildings and promotes such wasteful practices as putting up cheap houses and removable structures (containers, tents, canopies), in city centers, prime city areas where land values have greatly appreciated.

There is every need to curb these anomalies if sustainable development can be achieved. Moreover, the resultant scarcity or limited supply especially for urban land is hiked by the increased land value which is created by the government (by provision of infrastructure using the revenue collected from the public when they pay taxes).

A good tax system should aim at meeting the equity, justice, efficient use of resources, revenue increase and above all sustainable development. The present land taxation does not engender sustainable land-use and development. The practice of sustainability which reflects the intersection of three areas of concern for local governments: economy, environment, and equity - often referred to as the "triple bottom line" (<http://www.sustainablecitiesinstitute.org>) is not visible in Anambra State's land taxation laws. From the literature reviewed literature land value taxation have been used as a tool for achieving sustainable land use and development in developed and developing countries but the need to show the significance of land value variable in the overall property value and its consequent taxation, while formulating a tax policy on urban land resource for sustainable land use and development necessitated this research.

### **1.3 Aim and Objectives of the Study**

The aim of this research is to analyse urban land value taxation as a veritable tool for sustainable land use and development in Anambra State. To achieve this, the research sought to:

1. Identify the principles and objectives of land – based taxes in the study area.
2. Develop a model that will partition property value into land value and building value.
3. Derive models that can establish the contributions of individual explanatory variables to property values in the study area.
4. Determine if statistical evidence supports theoretical postulation on the relative importance of land value variables and building value variables in the property valuation model.
5. Examine the consequence of taxation of urban land value for sustainable taxation and land use in the study area.

### **1.4. Research Questions**

The questions the research hopes to answer are;

1. What are the principles and objectives of land – based taxes in the study area?
2. Is it possible to develop a model that can partition property value into land value and building value?
3. Are there models that can establish the contributions of individual explanatory variables to property values in the study area?

4. Does statistical evidence support theoretical postulation of the relative importance of land value variables vis-à-vis building value variables in the property valuation model?
5. What are the consequences of taxation of urban land value for sustainable taxation and land use in the study area?.

### **1.5 Research Hypotheses**

The following hypotheses were tested in the research:

Ho<sub>1</sub>: There is no significant relationship between urban land values and explanatory variables in the study area

Ho<sub>2</sub>: There is no significant relationship between building value and its explanatory variables in the study area.

Ho<sub>3</sub>: There are no differences in individual contributions of the explanatory variables to property values in the study area

### **1.6 Significance of the Study**

The study offers a framework to help enhance awareness, perception and effectiveness in land use and development in a sustainable manner amongst the various units of authority charged with the taxation of landed properties in the state. it furnished tax officials with a tax instrument that generates revenues without damaging side effects on the urban economy.

Policy makers can use the result of this research as a guide in future policy making. In times of possible reform this study can help them to formulate a land policy which will be



an improvement on our existing land policy. It will enhance formulation and adoption of a tax system that is equitable and will not occasion damaging side effects or impede economic development.

Researchers are usually among members that constitute policy formulation panels as advisers and innovators, this study will act as a source of information in their bid to fashion a better policy that will be beneficial to all (Government and public). The report will serve as a major source of information in the academic world for lecturers and students of taxation.

The general reader who does not have a background in economics and even land taxation will read the work and understand how land value taxation works and how it can be deployed to enhance sustainable land use and development.

### **1.7 Scope of the Study**

Residential real estate represents the largest stock of real estate assets in Anambra state and an active submarket where data are readily available unlike other submarkets, thus the choice of residential properties for this research.

The study is limited to residential properties in Onitsha and Awka because their neighborhoods can easily be delineated into low, medium and high densities for better analysis unlike other urban towns in Anambra State. The study is further limited to improved residential properties in the low density (G.R.A Onitsha and Agu-Awka G.R.A) and high density (Fegge and New-Era) neighborhoods of the study area. The focus was on analysis of building value and land value of urban residential properties in

the two selected urban centers. The analysis was strictly on the land and building variables which contribute to land value. Other external additive components of a property e.g swimming pool, tennis court, external garage, that also add up to the value of a property were not considered in arriving at the property value. The aim was to keep the data within a manageable range. The market value of the properties served as a guide to the values obtained.

### **1.8 Limitations of the Study**

The study ideally covers residential, commercial, industrial, agricultural and recreational properties in Anambra State. But allowing for availability of data in the real estate market it is limited to residential properties.

Some challenges were encountered during the study. A very remarkable obstacle encountered in the study came from the workers at APLUC office. The workers were not willing to divulge any information despite the introduction of my status as a research and that the information I sought was solely for academic purpose. The head of the unit eventually gave out some information after much persuasion but persisted on not giving the address of the properties. It can be figure that some important information was held back.

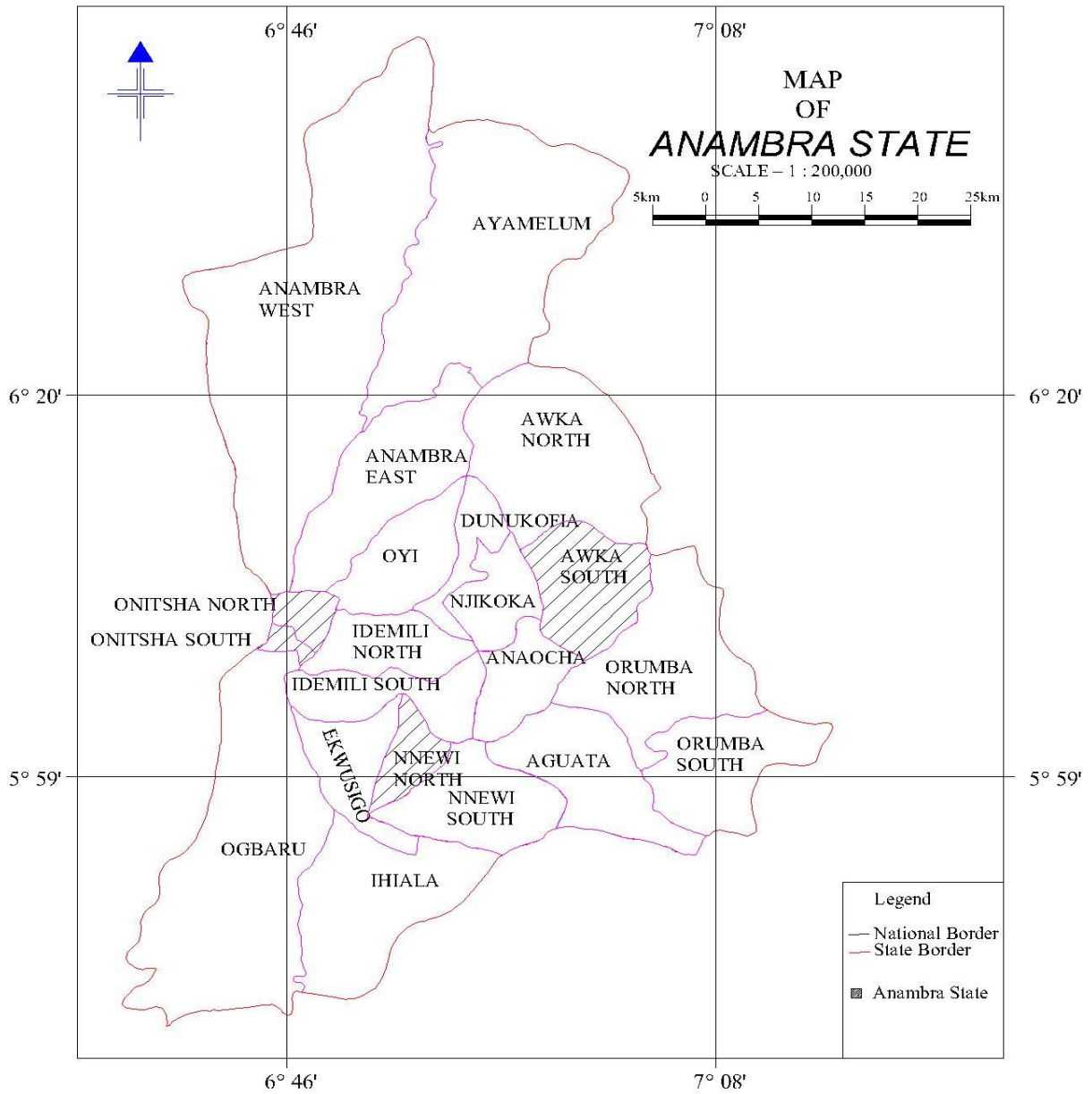
The opinions of tax professionals and practicing Estate Surveyors and Valuers were relied upon, while that of property owners were excluded in respect of some questions that required professional opinion.

One major constraint met in carrying out the study was finding a Statistician who is in tune with my research area and most importantly finding software that suits the variables used to arrive at the values. These ate into the available time and finance for this research.

### **1.9 Area of Study**

Anambra state is one of the five states in South East Geographical zones of Nigeria. It is located between latitudes 5° 40' N and 6° 48' and longitudes 6° 35' E and 7° 30' E. Geographically, Anambra State is bordered on the East by Enugu, on the West by Delta State, on the North by Kogi State and on the South by Imo State. Anambra is the eighth most populated state in the Federal Republic of Nigeria and the second most densely populated state in Nigeria after Lagos State. It has a population of 4,177,828 made up of 2,117,984 males and 2,059,844 females (National Population Commission Abuja, 2010). The population of Anambra State has been on a steady increase since its creation. With a population growth rate of 3.3 % for Nigeria the estimated population of Anambra State as at the end of the year 2016 is 5,547,026. Consequently it has one of the highest population densities in Africa at 947 persons living within every square kilometer. However as with every other state, rural-urban migration poses serious burdens for the state's resources. The state is divided into 21 local government areas for administrative purposes, each with its headquarters.

It is the second most urbanized state in Nigeria, with 62% of its total population living in urban areas (National Bureau of statistics, 2006), The major cities of Onitsha, Awka (study areas) and Nnewi have merged with their surrounding settlements to form urban sprawl corridors (UN-Habitat, 2009).



**Fig 1: Map of Anambra State showing the study areas**

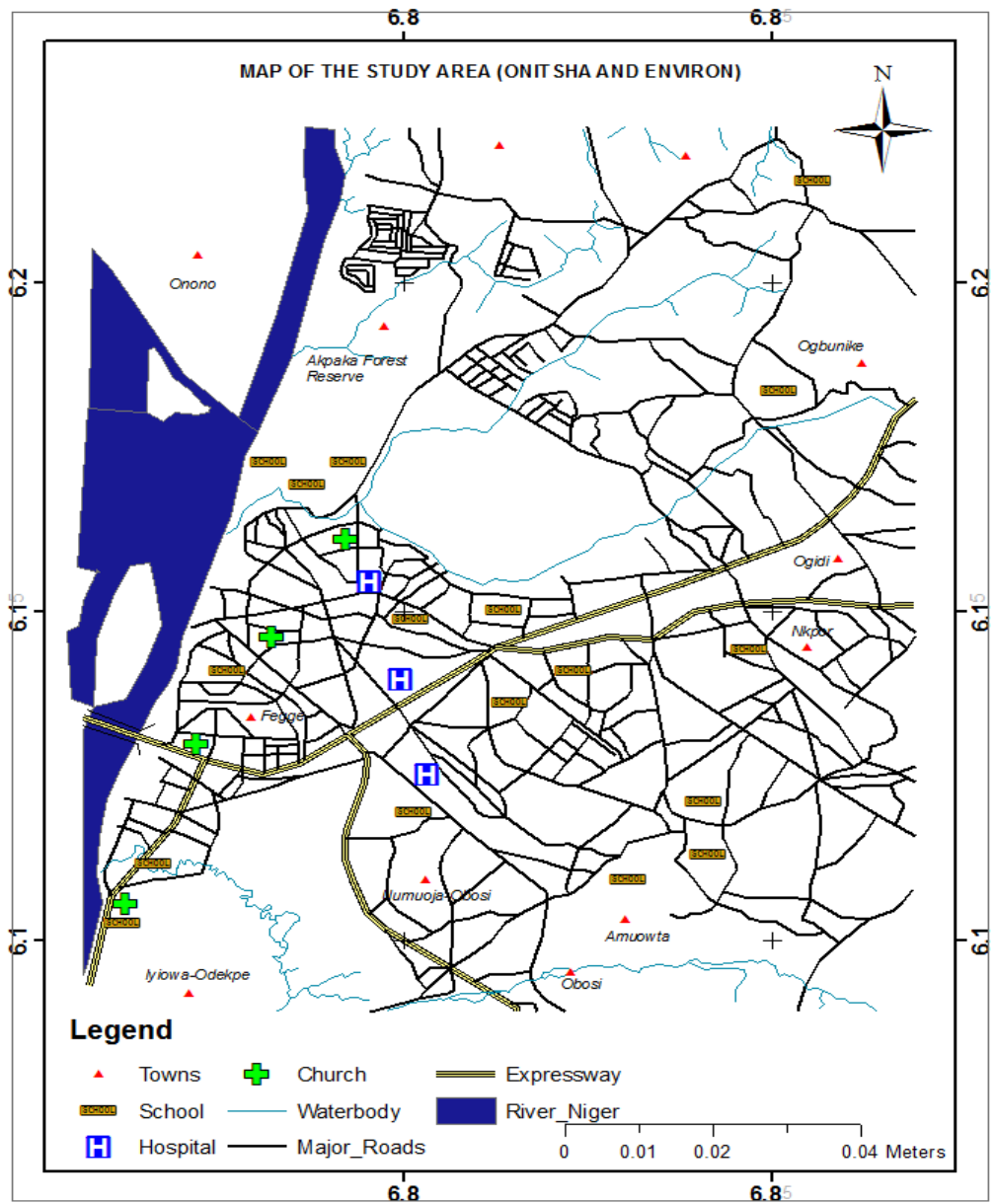
*Source: Department of Surveying and Geoinformatics, Nnamdi Azikiwe University, Awka.*

The following are brief descriptions of the selected urban areas (cities) for the study, Onitsha and Awka.

## **Onitsha**

Onitsha is located on latitude 6.1°N and longitude 6.8°E in the Anambra North Senatorial Zone of Anambra State and it occupies the eastern bank of the Niger River, covering some 50 square kilometers ((UN Habitat, 2009). Onitsha is strategically located and accessed through the east–west national main road from Lagos through Benin, which links the eastern north–south route via the Niger Bridge at Onitsha. The main concentration of population and industrial activity and the areas showing the greatest potential for growth are situated along this transportation axis. Onitsha is the gateway to eastern Nigeria and economic nerve centre of Nigeria and occupies the eastern bank of River Niger. It covers an area of about covering some 50 square kilometers. (UN Habitat, 2009)

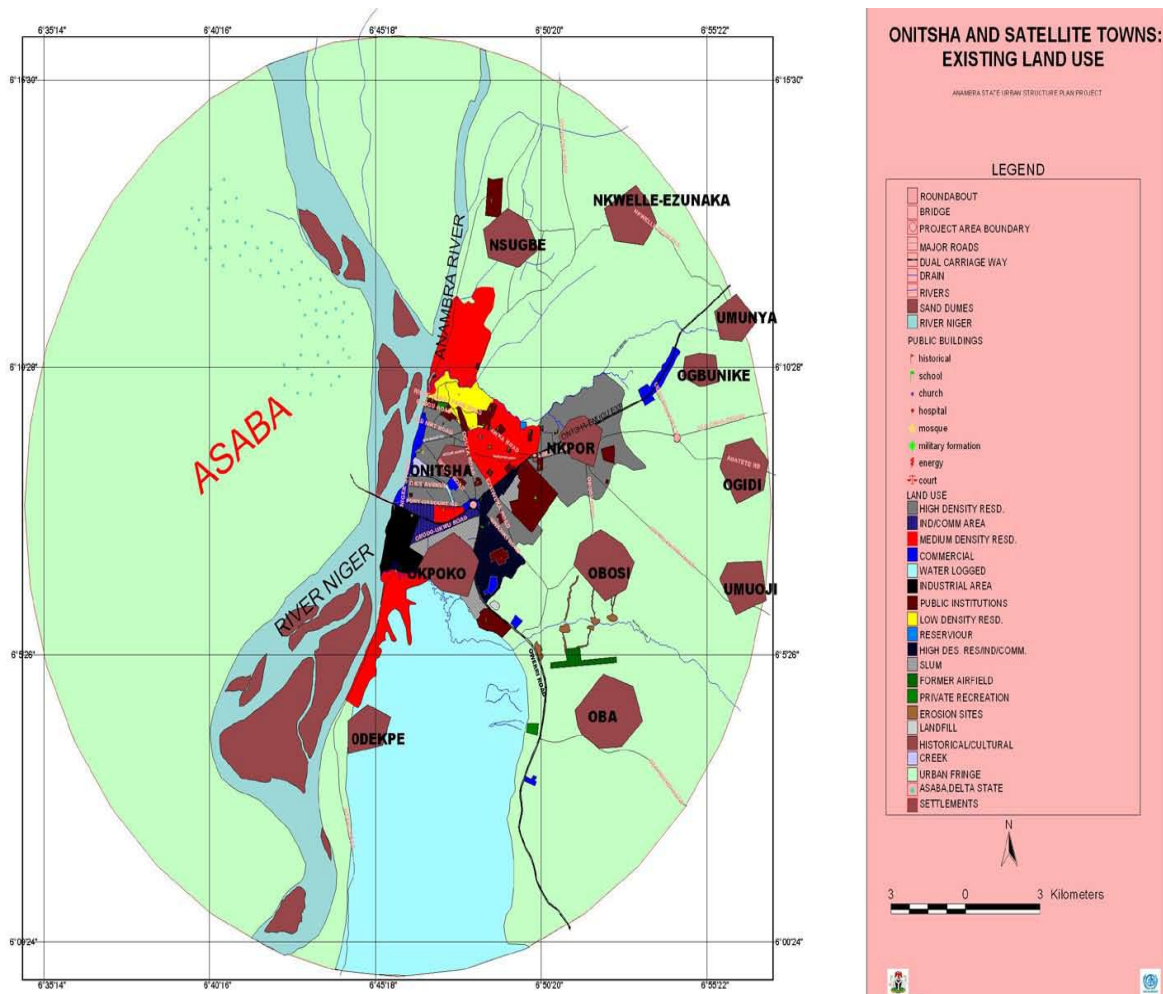
The city is split up into two Local Government areas namely, Onitsha South and Onitsha North Local Government Areas. Onitsha North and South Local Government Areas are bounded by Ogbaru Local Government to the south, Idemili North and Oyi Local Governments to the East. They are bounded to the North by Anambra East Local Government.



**Fig 2: Map of Onitsha**

*Source: Department of Surveying and Geoinformatics, Nnamdi Azikiwe University, Awka,*

The central business district (CBD) of Onitsha is around the main market. The city grew from its initial settlement around the River Niger to what it is today with various land uses. Residential land use (low, medium and high density areas) plays out in the land use in the study area (Fig. 3).



**Fig3: Existing Land Uses in Onitsha**

*Source: Adapted from UN Habitat, 2009*

There are several markets in Onitsha though Onitsha main market is the major one that is known within the continent. The influx of traders from all parts of the country and the

Cameroon to buy at Onitsha is an important factor that invariably contributed to the town's physical and population growths.

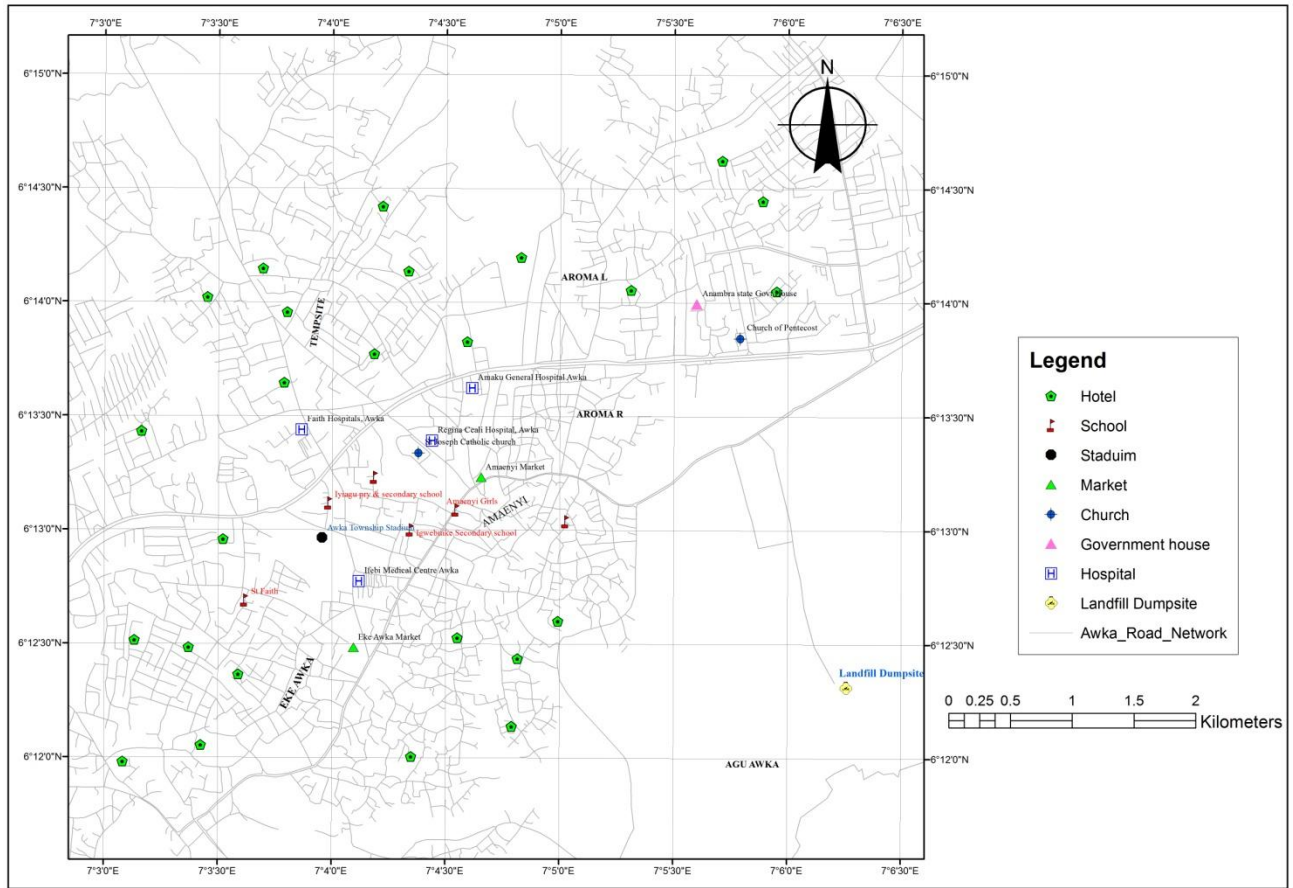
In addition to commerce, Onitsha also grew to become a major industrial, educational, religious and administrative centre. As an industrial centre it houses the largest number of industries in Anambra State. As a major religious centre, it has the largest Cathedrals for both the Anglican and Roman Catholic Churches, east of the Niger. And as an administrative centre, Onitsha houses two local governments and has high courts and other government institutions.

A major feature of the Onitsha's growth and attraction of traders over the years is that non-indigenes accounted for more than 70% the total population. The land uses in Onitsha are dominated mainly by housing which are mostly of medium and high density developments. Commercial activities abound everywhere in the town and sometimes one finds it difficult to separate it from other land uses in the town. The town is a good example of the menace of urbanization without planning or public services.

### **Awka**

Awka is the capital of Anambra State whose region covers six Local Governments which include Awka Capital Territory, Awka South Local Government area, accounting for more than half of the land area. Others are Awka North, Njikoka, Anaocha, Dunukofia and Orumba North Local Government Areas.

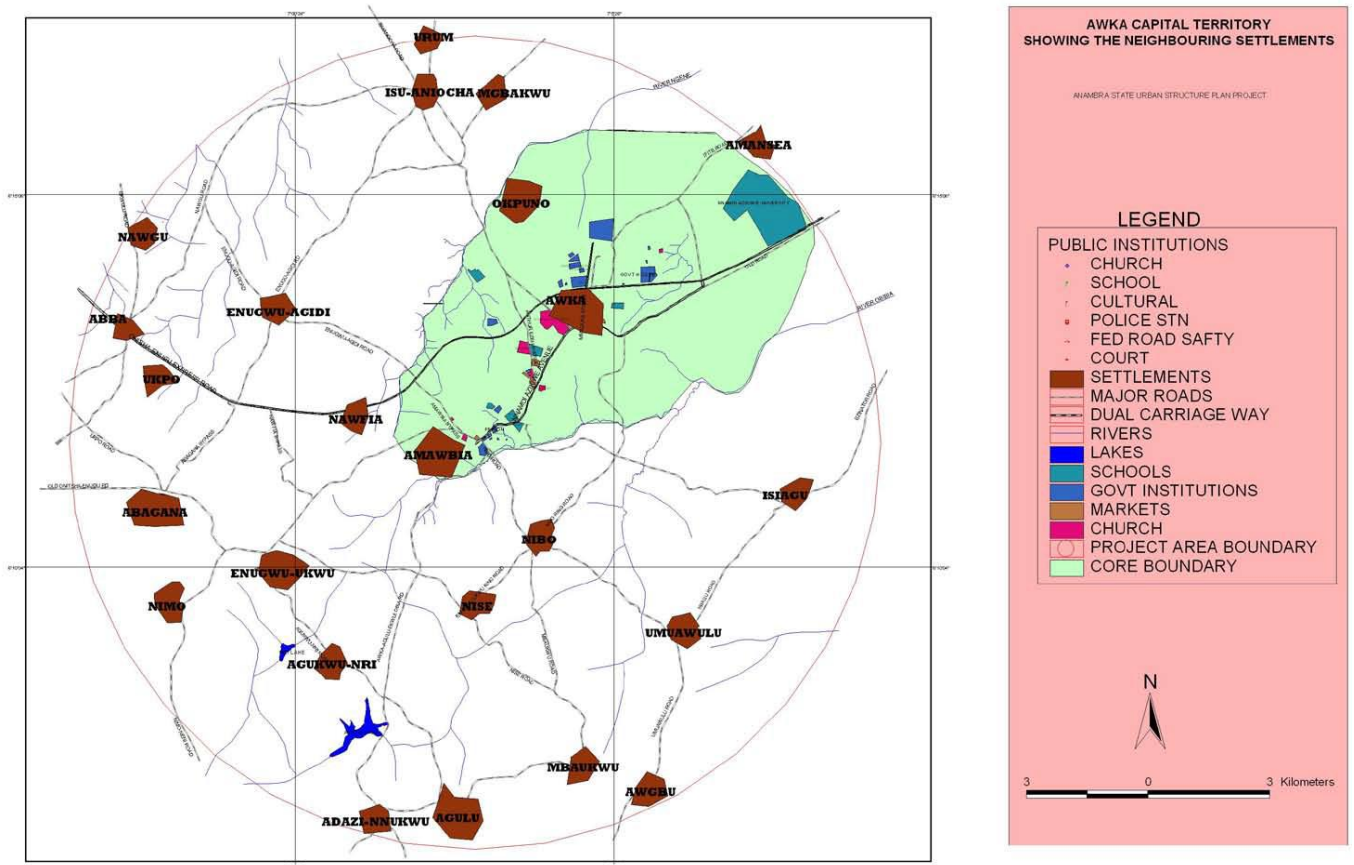




**Fig 4: Map of Awka in Anambra State**

Source: Department of Land Surveying and Geoinformatics, Nnamdi Azikiwe University Awka

The land area of the capital Territory covers 10km radius and could be regarded as a heavily populated sub region, with Awka occupying the centre at the junction of the old Enugu- Onitsha road. Urban growth has been rapid as the three towns of Awka, Amawbia and Okpuno have grown to merge with each other, forming a conurbation.



**Fig 5: Awka Capital Territory Showing Awka Town Conurbation**

*Source: Adapted from UN Habitat, 2009*

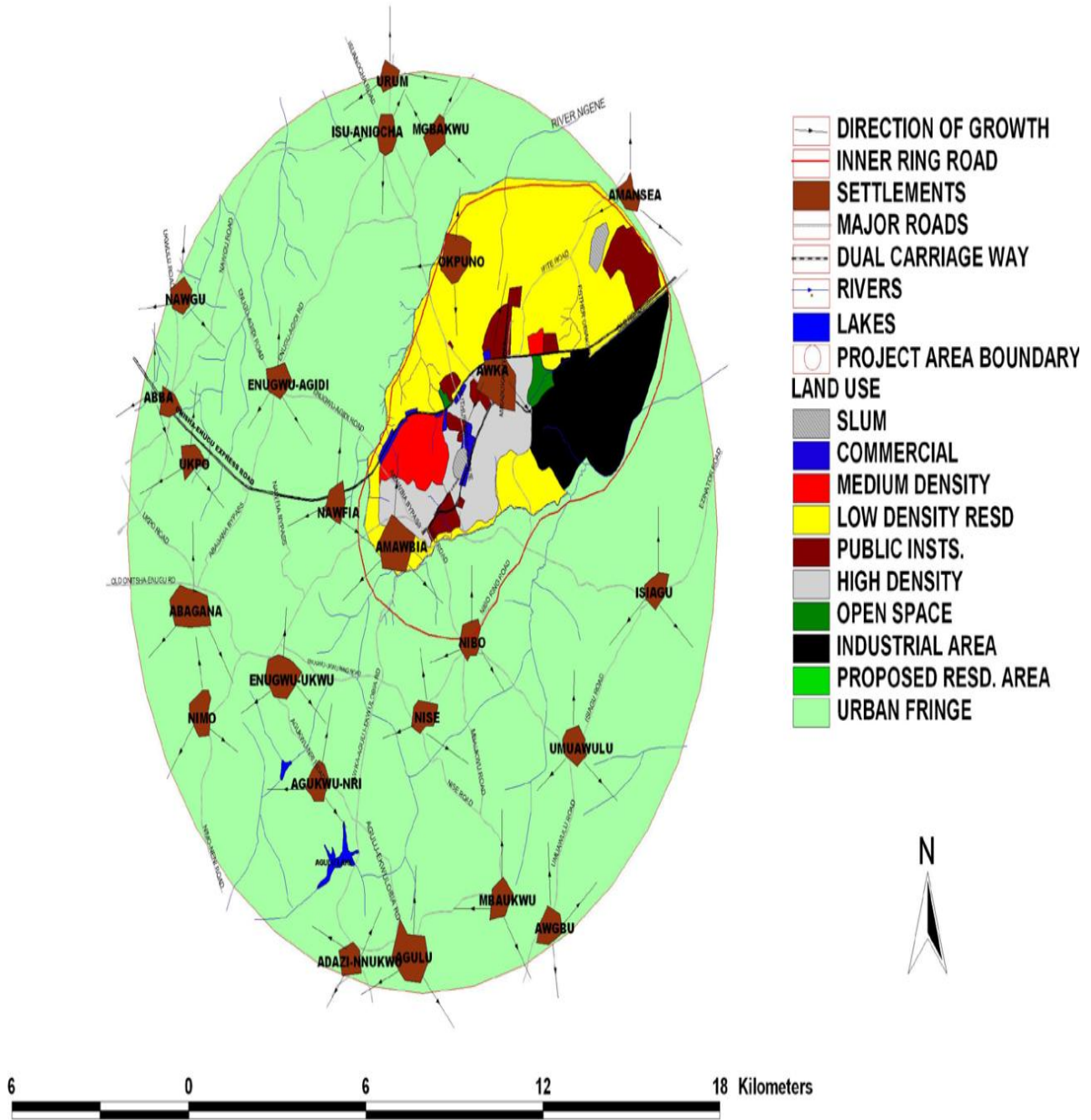
The areas not built upon have been due to certain natural barriers for development such as water/flood courses, erosion sites, ravines, deep valleys, shrines, religious forests and traditional sites.

Awka has grown into an urban centre both by natural increase and by immigration. Before the creation of Anambra State in August 1991 with Awka as its Capital, the town had played different roles as administrative/zonal headquarters to different Governments. In these roles the city had essentially remained more rural than urban in scope. This

changed as soon as it became a State Capital. The influx of population made up mainly of returnee civil servants from Enugu, employees of federal ministries and parastatals, student population of Nnamdi Azikiwe University and others increased its urban nature speedily.

Awka town comprises two distinct sectors, namely the built up older portion that is overcrowded and unplanned with poor road system and the developed part with a good number of open land surrounding the houses. Land uses and urban forms of Awka are slightly different, exhibiting the dual character deriving from its two major components – the first a new town grafted onto the old city separated by the express way. The older part reflects the urban elements peculiar to traditional Igbo settlement, with a palace and market square at the centre, providing ample open spaces for recreation, religious, economic and socio-cultural activities. The land use is distributed over residential, industrial, commercial, administrative and agricultural.

## URBAN FORM SINGLE CORE CITY



**Fig 6: Showing land Use in Awka**  
*Source: Adapted from UN Habitat, 2009*

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter, related literature was reviewed in relation to the focal points of the research which are; land value taxation, sustainable land use and development. It also examined the variables that determine land and building values and consequently property values. The principles and objectives of land –based taxation were reviewed against the backdrop of achieving them in the practise of land-based taxation in Anambra State.

To buttress the point about the non-utopian nature of land value taxation, its practices in developed and developing countries was reviewed. Further into the work approaches to land value taxation with their pros and cons were brought to fore. The relevance was to help direct this study on the methodology to adopt. Finally, there was an overview of land market in Anambra State and the necessity of adopting land value taxation to achieve sustainable land use and development.

#### **2.2 Principles and Objectives of Taxation**

Taxation can be expressed as a method of apportioning the cost of government works among those who in some measure are enjoying its benefits and must, therefore, bear its burdens. When the government demands from its citizens some amount of money in order to provide services for them, then the act of taxation has been carried out. It is primarily based on the theory that there is always a need for government existence in every nation; that government needs to provide for its citizens basic needs; that the means

of paying its citizens expenses can only be assured when they (citizens) are compelled to contribute to these expenses. It is an important factor in economic planning and an agent of social change (Ogbuefi, 2004).

Taxation has existed in various forms (money, clay tablets, food, sheep, swine, herds of cattle, etc) and sizes since civilization began. Thus before the existence of a monetary system, taxes were paid by citizens and foodstuffs/crops, live stocks, herds of cattle land and its proceeds were the basis of taxation. Some of the most common forms of taxation over the millennia were poll taxes, tariffs on goods, but that of property taxes on the value of land and buildings really stood out. Tax is the amount levied on an individual, group or corporate entity and payable to government to meet expenditure on infrastructure and keep the organs of governance running smoothly (Oni & Ajayi, 2011). It is not a voluntary payment, gift or donation, but an enforced contribution, exacted by a legal authority. The Institute of Chartered Accountants of Nigeria (2006) and Chartered Institute of Taxation of Nigeria (2002) defined tax as “an enforced contribution of money to government pursuant to a defined legislation”.

The basic principles of tax are that it is expected to; be proportionate to the taxpayer’s ability to pay; be fair and equitable; be transparent; be understandable to the tax payer; consider the ability of each person to pay based on income and benefits received; generate enough revenue to meet the demands of public expenditure ;politically acceptable to the payers to avoid incurring their hostility; be economical to collect and must be consistent with goals of promoting stable economy (Musgrave,1989; McLure, 2000; Ehtisham and Stern, 1991; Serra and Afonso, 1999; Bird and Gendron, 2000; Keen and Smith, 2000; Emeni, 2000; Olusegun, 2003; Ogbuefi, 2004; Sharma, 2005; Thacker,

2009). Although taxes could also be used as instruments of socio-economic leverage, or for achieving various other non-fiscal goals, due care should be taken not to deviate from the above-stated principles for a good tax (McClucksey, K'akumu and Olima, 2005).

Based on the principles Ogbuefi, 2004 reiterated that the objectives of taxation are:

- To raise revenue and ensure that citizens contribute their due to the development of the society;
- To spread the burden of payment progressively and equitably by soaking the rich to help the poor;
- To use tax as a tool of economic policy in transferring resources from the private sector of the economy to national use.

### **2.2.1 Standards of a Good Tax Design**

According to Tomori (2001) decision makers are influenced by five considerations, in the choice of tax to adopt. First consideration is Fairness- Taxation is based on the benefit received, for example when a special district is created to supply water to users and the charge is made on the basis of the amount of water used; Second consideration is Redistribution - In this situation, some people pay more while others pay less than the cost of their benefits, indicating a tendency toward taxation according to ability to pay; Third consideration is adequacy of government revenues- Government at all levels must be supported and one test of a good tax is whether it will produce the needed money without producing intolerable burdens on particular groups of people ;The fourth consideration is whether the tax can be efficiently administered. The costs of collection and the opportunities for evasion or unequal treatment become tests of

the appropriateness of a tax; Fifth consideration is the effect of a tax on the economy- Decision makers at both State and Local levels may be especially interested in avoiding taxes which deter location of industry in their areas. Those at the national level may be interested in whether the tax contains a built-in flexibility so that it bears in prosperous times.

2008 review of New South Wales State taxes in Australia (IPART, 2008) can best be used to illustrate a good tax design. The assessment of the State's major taxes, took into account standard taxation principles; efficiency, equity, simplicity and transparency.

Efficient taxes are ones that minimize the distortion of economic decision making and therefore have relatively little impact on the overall allocation of resources in the economy. In an efficient tax system: the same business decisions are made regardless of tax considerations; risk taking and innovation are not discouraged ; economic restructuring is not hindered ; the public sector is not given a competitive advantage over the private sector for service provision, based on taxation ; taxpayers have little incentive or opportunity to rearrange their financial affairs or to re-configure transactions to materially alter the tax consequences; and minimal resources are directed towards evasion, avoidance and enforcement.

Equity is concerned with the fairness of a tax. The fairness of taxes can be assessed in two dimensions: Vertical Equity and Horizontal Equity. Vertical equity refers to capacity to pay. Increases in income are considered to lead to a more than proportionate increase in capacity to pay. Therefore, according to the principle of vertical equity, lower income taxpayers should pay not only less tax but also a lower proportion of tax compared with



those on higher incomes. Horizontal equity refers to equal treatment of taxpayers in similar circumstances.

Simplicity can lower the cost of taxation by minimizing the waste of productive resources involved in transferring resources from the private sector to the public sector. It relates to minimizing the costs imposed by the tax system on taxpayers and tax administrators. Simple taxes are preferred because they minimize the costs of compliance and administrative costs as far as possible.

In a transparent tax system, the key features of a tax – such as its purpose and how it operates are easily identified and are certain. The community and taxpayers can clearly understand what is being taxed, who is liable, and how their liability is calculated. Taxpayers can also clearly understand the scope and applicability of taxes and can plan with certainty their individual tax liability.

The study looked at the meaning these principles and objectives connote for land based-taxes in Anambra State and if the land- based taxes conform to standards of a good tax design.

### **2.2.2 Land- Based Taxation in Nigeria**

Taxes are the significant tools used to redistribute wealth and income and also used for the better allocation of the resources. These functions results in removing the resources from the private to the public sector (Dadkhah et al, 2012). Land and housing has always been used as tax subjects or basis.

Land taxation refers to any tax in terms of which immovable property is the (or could be a) dominant taxable object or item to determine the taxable value, e.g. value-added tax (VAT), capital gains tax, estate tax or death duties, gift or donations taxes, (real) property transfer taxes, and, of course, property and land taxes in the strict sense (Franzsen and McCluskey 2005). Nigeria is adorned with notable land based or property-related taxes like property rate, development levies, capital gains tax, value added tax(VAT), land use charge etc.

Capital Gains Tax (CGT) is backed up by the Capital Gain Tax Act CAP C-1, LFN, 2004 which provides that any time an asset, including a real estate situated in Nigeria or outside of Nigeria, is disposed of by a Nigerian tax payer, and a gain is derived, the resulting gain shall be liable to a ten per cent (10%) Capital Gains Tax less such allowable expenditures that were used to enhance or preserve the title to the asset. If land forms part of the subject capital, land value will form the basis of the tax. CGT is paid not paid by the owner of the property , rather by a person who is benefiting from the transfer( McClucksey, K'akumu and Olima, 2005).

Goods and services utilised in the real estate industry, are liable to the payment Value Added Tax (VAT) months of their commencing business, they are registered for VAT, and mandatorily file monthly VAT returns. VAT's collection has been administrated by the Federal Inland revenue Service (FIRS). Proper keeping of records is crucial if VAT is to be collected on disposed goods and services but most operators in the informal sector are known for poor record keeping.

Withholding Tax is a tax avoidance regulation in Nigeria which applies to both corporate bodies and individuals. It mandatorily requires the payer of any income to withhold ten per cent (10%) of such income earned, where the recipient of the income is a corporate body, and 5% where the recipient is an individual. The withheld tax amount is an advance tax payment which must be remitted by the payer of the income to the relevant tax authorities simultaneously with the payment of the income. The main objective of the withholding tax is to reduce the incidence of tax evasion by companies and individuals, thereby increasing the revenue earning potentials of government from income tax.

Capital transfer tax *intervivos* and Capital transfer tax on death are the two aspects of Inheritance tax paid on a property transferred as gift when the transferor is dead or alive respectively. Inheritance tax is on gratuitous transfer of interest or ownership of landed property and based on the open market capital value of the property at the time of transfer.

Personal income or Companies income can be taxed by virtue of property ownership. Any income with the resulting profit earned by any person from a landed property transaction, whether such a person is a corporation or an individual, is liable to the payment of Personal Income and Companies Income Tax.

Documentary Taxes (Transfer taxes) are taxes administered on the owner of a property when there is transfer (sale, purchase or any other form of land transaction) of ownership. Stamp duty, assignment fee, title registration fee, survey fee, approval fee and other sundry fees in so far as they are about land transaction falls under this category. They are levied upon transfer of the land; unlike most of the land based taxes that are levied on

regular basis, usually annually. Documentary taxes double as security for the owner and avenue for generating revenue for the government. The tax will not be levied as long as land does not change hands, irrespective how long it may take and it would apply as many times as land changes hands – even if these changes take place in less than a year (McClucksey, K'akumu and Olima, 2005)

Development levy, ground rents, premium, and other incidental rates all fall under Land Rates Law of various states. The Law applies to state allocated land and imposes liability on the owner. Development levy is for the purpose of providing new infrastructure in a developing area, thus it ordinarily will be a one-off payment but the scenario in most states is that it has been made an annual levy.

Property taxation is an age long practise whose primary focus was land and its production value. Property taxes were levied and collected in Egypt, Babylonia, China, and other parts of the ancient world to finance construction of palaces and temples and to maintain imperial armies (Dye and England, 2010). Property taxation is traced back to British traditional rating system, which originated from the British Poor Relief Act 1601, often referred to as the Statute of Elizabeth. The statute provided for the levying of taxation on “every occupier of land, houses, etc towards the relief of the poor”. The tax mandated occupiers to contribute to a poor rate according to their means but with no laid down basis of assessment. Gradually, annual value of people’s property within the parish became recognized as the most satisfactory basis for assessment. The tax came to be regarded as a tax on the property itself (tax in rem) (Fisher, 2006). Consequently, Parochial Assessment Act 1836 prescribed a definite basis of assessment, when it

provided that a poor relief rate was only valid if it was made on an estimate of Net Annual Value of the property rated (Anumnu, 1988).

The growth of the property tax in America dated back to 1796 and was closely related to economic and political conditions on the frontiers. In pre-commercial agricultural areas, the property tax was a feasible source of local government revenue and equal taxation of wealth was at the time consistent with the prevailing equalitarian ideology (Fisher, 2006). In principle, the amount of revenue raised by rating is entirely governed by the municipal expenditures and the system of rating has no connection with it. Every responsible resident should bear his or her share of the expenses incidental to the running of the town administration because everyone derives benefits from the municipal services rendered (Tomori, 2001).

In Nigeria the word is Property rate. Rate means; “A tax levied by local authorities on all properties in their areas of jurisdiction, based on a fixed ratable value for each property” (Encarta Premium Dictionary, 2006). Nigeria as well as a good number of Commonwealth countries like India inherited the British traditional rating system with the advent of colonialism. The original ordinance to levy property which was applicable to only the Lagos territory was enacted on 21<sup>st</sup> May, 1915 and was amended to Assessment Ordinance Cap.15 of the Laws of Nigeria and Lagos, 1958. There were various amendments to this law from its enactment to 1976 when various states of the federation were directed to enact their local government law. This gave birth to Anambra State (Enugu, Ebonyi, and present Anambra State) of Nigeria Local Government Edict, 1976. With the creation of states, each state re-enacted the 1976 edict with minor amendments to suit their circumstance. In Anambra State, the law became Anambra State Local

Government Law, 2000 with part XI dealing with property rating. The property rating laws emphasized that tenement for rating means land which is held or occupied as a distinct or separate building or tenancy or any wharf or pier, but does not include land without building (Section 67 of Enugu State of Nigeria Local Government Law, 2000).

One of the taxes used by some states in Nigeria to increase their revenue is the Land Use Charge. The land use charge law came into force in Anambra State in December, 2011. The law consolidated all real property taxes with all land based rates and charges which were formerly charged under the Assessment Law, the Land Rates Law, the Neighbourhood Improvement Charge Law and the Tenement Rates Law, into one single Property land use charge , Anambra State Property and Land Use Charge (APLUC). The main objective of the law as proffered by the State Government is to generate additional revenue needed to develop the state. APLUC's main objective underscores the point why Land Use Charge was introduced by the state governments practicing it. It aims to raise revenue for maintaining existing infrastructure and provide new ones. In line with this aim, Land use charge is a form of taxation, the objective of which is to finance public spending and an analysis of taxes can be viewed within the framework of economic objectives of government (Oni, 2009).

One common phenomenon for this land –based taxes is that they are all geared towards revenue generation. Public finance economists identify simplicity, efficiency, fairness, and revenue sufficiency as the proper objectives of tax policy (Minarik, 1993). Going by the aforementioned principles, it can be suggested that the land based taxes are geared towards the principle of revenue sufficiency. Capital Transfer tax and Development levy have tried to redistribute income equitably thus inclining towards equity principle.

According to (Ogbuefi, 2004), the main aim of capital transfer tax is to curb the undue enjoyment of unearned income. This effort at being equitable is not fully achieved considering that there are few data available. Oserogho, 2004 affirmed that there is lack of data or record keeping in order for the tax authorities to be aware of when the capital gain has been made and liable to payment for Capital gains tax.

Under property rate law, undeveloped lands are seen not be beneficial to the owners and therefore not rateable. This notion is false as quite a good number of undeveloped sites are quite beneficial to their owners being that they steadily appreciate in value due to their location and consequent public expenditure on facilities near the land. Ogbuefi, 2004 opines that undeveloped or unimproved land should be rated because people who are not ready for urban development acquire statutory rights of occupancy thereby destroying the chances of unwilling and capable developers. He further reiterates that allocation of statutory rights of occupancy to willing and capable developers would improve the property rate revenue of the governments and ensure that allocated lands are promptly developed thereby increasing the housing delivery to the population

Having looked into the principles and objectives of taxation in general, and the underlying objectives of our land based taxes in particular, the study will analyse our land based taxes to ascertain if they have incorporated the principles and objectives of a good tax system; if the taxes have what it takes to be considered a land value tax; If the land aspect of a property is adequately considered as a tax base in land use charge guidelines and practice.

## **2.3 Land Value Taxation: A Theoretical Concept**

### **2.3.1 Economic Theories of Land Value Taxation**

The concept of taxing land values for public finance is ancient. Even the Bible earlier declared that “the profit of the Earth is for all” (Ecclesiastes 5:9). In general, taxation by every means is traditionally attached to land because land amongst other factors is a major factor in man’s production of goods and services. Land value taxation (LVT) has a long history. The economic and history foundations of LVT are firmly rooted in the early 18th and 19th centuries (Smith, 2000). . Land taxation as a topic was explored, for both rural and urban land, by classical economist (Adam Smith) and Physiocrats (Ricardo, John Stuart Mill, Marshall, Pigou and Henry George) alike.

In the 18th century Physiocrats in France on the grounds that only in agriculture does a country have a surplus source of wealth established a case for levying an *impôt unique* on land rents Prest (1981). In essence, they set out to exhibit the way in which products of agriculture (then considered the primary source of wealth) would, in a state of perfect liberty, be distributed among different classes of the community (Robinson, 1991 Lichfield and Connellan, 1997). Their views and conclusions are contained in the idea of a single tax on land as was strengthened by the work of David Ricardo (1772-1823) who is generally attributed with formulating the law of rent:

*“The rent of land is determined by the excess of its produce over that which the same application can secure from the least productive land in use”.*



Calling their theory “physiocracy” (the rule of natural law), they outlined a model of economic development that used land value taxes to finance public works, which increased the value of the land (and thus increased taxes paid to the treasury). The Physiocrats believed that one way to raise the revenue is through the land taxation. Tideman (1994) while quoting Quesnay’s Maxim V in his General Maxims for the Government of an Agricultural Kingdom;

*“That taxes should not be destructive or disproportionate to the mass of the nations revenue; that their increase should follow the increase of the revenue; and that they should be laid directly on the net product of landed property, and not on men’s wages, or on produce, where they would increase the cost of collection, operate to the detriment of trade, and destroy every year a portion of the nation’s wealth”*

posited that tax on rent as a tax base, does not “operate to the detriment of trade” (no dead-weight loss), unlike a tax on many other base, set the premise from which classical economists wrote on taxing land.

Adam Smith is of the view that taxes on “ground rents” (by which he means the rent of land under buildings) or urban land rents are neutral in their resource allocation effects, and for equity, that it is fair to tax away surpluses which are more due to extraneous circumstances than individual efforts. He also stressed that people should pay for government actions and services which are to their advantage; that is, benefits-received-principle. However Smith would not accept the solution that a tax levied on the market value of all land would constitute a continuous pressure on land owners thus inducing them to compete favorably with intending land owners. He resisted the application of the

tax on the value of all land. In fact, he explicitly opposed a tax on the rental income which could be imputed to idle land (Harrison, 1983).

Ricardo in his comments on Adam Smith's view said that "the effect of these taxes (i.e. taxes on ground-rents and the ordinary rent of land) would be much as Adam Smith has described". Ricardo has a proportionate share in the land rent theory. He established this theory, so that it could explain the relationship of the land rent with the land utilization (Feder, 1993). Prest (1981) pointed out that Ricardo who developed the concept of intensive and extensive margins of cultivation with rural land did not apply them in the context of urban land. Ricardo's argument is that the rent of corn land was high because the price of corn was high, and not vice versa. Because of fixity of land supply, its price depended on the demand for land, which was itself a function of the price of corn. Rent, which originally referred to the payment for the use of land, thus became the term for a surplus payment to a factor over and above what was necessary to keep it in its present use. Ricardo's view about the economic rent of corn land is similar to modern time's economic views. Lipsey (1989) is of the view that the concept of economic rent, the surplus of total earnings over transfer earnings, is analogous to the modern economists' concept of profit as a surplus over opportunity cost.

In summary Ricardo's theory maintained that the supply of land, unlike the supply of capital and labour, cannot change in response to a change in demand. In essence, land has no supply price. Supply price is the minimum reward necessary to retain a factor in its current employment (Lichfield, 1997). This payment that is needed to keep the factor in production is known as "transfer earnings" (Foldvary 1999). Transfer earnings are payments that would remunerate all the factors involved in the production process at

market rates. Thus any slight increase in demand of the factors might earn the factor more than its fair share of transfer earnings. This economic situation may adjust in the long or short run depending on the nature of curve of its supply. If the supply curve is elastic, increased demand will attract some factors into the market which will increase the supply as to contain the transfer earnings. But where the supply curve is inelastic, more factors will not be attracted into the market as to increase the supply needed to match the increased demand. Thus the surplus over the transfer earnings would remain in the long run. Any payment to a factor of production over and above its supply price or transfer earnings is a kind of surplus and it is this surplus which is known as **Economic Rent**.

The argument and principle for land taxation rests on the bedrock of economic rent. Land being a free gift of nature cannot be increased arbitrarily unlike other factors of production. The amount of land available does not depend upon the market price; higher prices do not lead to larger quantities being supplied, and falling prices do not reduce the actual supply. Thus economic rent can be said to be tied majorly to land and it is reasoned that it is better to tax this surplus return to land because it will not affect the transfer earnings and will not cause strain in the economy.

Modern economists in their own argument maintained that the concept of economic rent is not peculiar to land alone; it can be applied to the other factors of production. Whenever a factor is earning more than its supply price, it is receiving a part of its income in the form of economic rent. This situation arises when demand increases and the supply cannot fully readily respond to the increased demand (Stanlake, 1989). The position of these economists is true only in the short run, because in a space of time, given the elastic nature of all other factors of production the supply will equal demand.

Their argument does not recognize the unique feature of land with minor exceptions (e.g. tall buildings or coastal reclamations): the increased demand cannot create an increased supply.

John Stuart Mill (1806-1873) declared that "rents were created by circumstances" Mill however saw two obstacles to taxing rents at a swinging rate. First, it is not always easy to determine if the elements of current values is due to private endeavor and circumstances. Second, the present owners of land may not be people who have enjoyed economic rents over the centuries but may be recent purchasers who bought at market values based on expectations of future rent levels free from confiscatory taxation. Another clear obstacle is that there are many other cases where people may enjoy monopoly type surpluses and as opined by Lichfield (1997) it is hard to see the equity case for taxing one lot of monopoly rents specially without taxing as many of the others as one can.

Mill then proffered a solution, which was to ascertain the present value of all land, urban and rural and thereafter tax at a high rate all future increments in value, unless it could be ascertained that increments in value were very specifically due to the endeavor of individuals. Summarily, his opinion was that unexpected windfalls in land values should be taxed.

Marshall (1842-1924) also contributed to the theory of urban rents by showing that Ricardo's concept of intensive and extensive margins of cultivation to agricultural land could also be applied as a principle to urban land. He opined that urban site values were determined by demand levels, and the long term fixity of land supply makes it distinct

from all other agents of production thus the whole of the return on it was a surplus. Marshall argued that the taxation of site value is comparable in some way with the taxation of monopoly profits in that there was surplus which could be tapped without any deleterious effects on resource allocation. Marshall distinguished three different solutions. First, the State should buy land plus buildings at full market price. Second, the State should purchase the inherent value of the soil. Third, all land should become State property a hundred years hence - which plan Marshall deemed to be less objectionable than the others (Prest, 1981).

Pigou (1909) made a clear distinction between taxes on the public value of land (i.e. land value taxation) and taxes on windfalls (i.e. unexpected increments in land values) and said he is in favor of both taxes, arguing from both economic theory and practical experience in other countries. In the case of land value taxes, his main theoretical platform was their neutrality when viewed from a resource allocation point of view. This is in line with Ricardian rent theory (rent is economic return that land should accrue for its use). The case for taxes on windfall increments is that if increments arose which were neither foreseen nor due to effort on the part of the recipient they were ideal objects of taxation. Prest (1981) summarize Pigou's position as being a synthesis of Marshall and J. S. Mill in that he could claim the authority of the former (but not the latter) for arguing for taxation of site values but the authority of the latter (though not the former) for taxing increments in land value.

Henry George (1839- 1897)) in his book *Progress and Poverty*, like classical economists, argued for taxing economic rent, but was in strong support of a single tax on land and the abolition of other taxes (then predominantly levied on other properties). George's basic

argument about land rents was that land values were exclusively due to general forces whether of a natural or social character. A tax whose amount is determined solely by the natural properties of land (in urban areas, its location) causes no distortions in economic decision making and therefore does not lower the efficiency of a market economy in allocating resources (Netzer, 1998). George originally advocated a single tax upon land values to replace all existing taxes which will be the sole source of government revenues. George supporters had the following arguments: that since land is a fixed resource, the economic rent is a product of the growth of the economy and not of individual effort; therefore society would be justified in recovering it to support the costs of government. Secondly, that acceptance of a single tax would make other forms of taxation unnecessary, and eliminating taxes on buildings would boost construction and economic growth. A third argument/advantage was the simplicity of administration of a single tax.

The views of the physiocrats and the classical economist can be briefly summarized here by referring to the minority report of the Simes Committee of Enquiry (1947-1952) in Great Britain.

The case for taxation of economic rent rests upon the following propositions:

- a. That it is unearned income, brought into existence not by anything which the owner, as such, has done but by the activities of the community generally;
- b. That a tax on it does not curtail the supply of goods and services and raise their price as many other taxes do; and

- c. In particular that it is a means of relieving the burden imposed by rates as at present levied upon dwelling-houses, shops, and other buildings and improvements to land.

Some notable economists disagreed with the idea of land value taxation. Richard T. Ely (1854-1943) dismissed the issue of land speculation by wealthy individuals by advancing the theory of “ripening costs”. He opined that holding land idle until a rise in value prevents land from premature under-improvement, till it matures into a higher use. Thus, the unrealized latent rents or holding cost is the cost of ripening. He reiterates that land taxes would force premature use without realizing optimal intensity. Invariably Ely did not weigh the consequence of scattered development during the latent period against the “premature underdevelopment” that is envisaged. Moreover land value taxation does not advocate for outright confiscation but willing disposal of land when the owner pays tax for something he does not have immediate need for.

Other economists like Donald Shoup (1970), Peter Mieszkowski (1970) Roger Smith (1979) and Louis Rose (1971) took lead from Ely's proposition by suggesting that land taxes prompt premature conversion (Gerber 1986). Their proposition did not take cognizance of the fact that land taxation does not function alone, but does so with laws to back it up. Therefore, any land taxed out of an owners hand, will not be subject to under-improvement but vice-versa because there will be law guiding its disposal, which will be in favor of optimum land use. Ely is also of the opinion that land supply is not fixed, that higher prices creates more manmade supply. His belief is that capital improvements, land use conversions, migrations, discoveries and substitutions of capital for land increases

land supply. This is simply not true because such increment is in short supply and cannot be used to conclude that land supply is not fixed or unlimited.

Kurnow (1959, 1960 and 1961), Jensen (1931), Zangerle (1927) question land adequacy as a tax base. They all point out that land taxes are capitalized; that the value of capital has to remain at cost of production and, therefore, capital is able to yield enormous revenue as compared with land. But past records has shown that land values today equal or exceed building values in most developing countries. Also taxing land enhances a reallocation of land to intensive users who were screened out by credit rationing. This further raises ground rent and the tax base. Furthermore, taxing land generates growth and growth expectations which add to land value increments which are part of the tax base.

### **2.3.1.1 Economics of Land Value Taxation (LVT)**

Taxes are the main sources of revenues of the governments so that the process of receiving taxes from the whole economic capacities has been considered as one of the essential concerns of the economists and policy makers (Rashti et al, 2011).

Tax is known to increase the cost of goods sold. Once you put a tax on a good, its selling price will go up. This diminishes the quantity demanded for the product, so less is sold. This in turn leads to decrease in production by the firms making the product which will lead to fewer jobs and consequently less money spent in the economy. This is as far as all other factors are concerned.



Land is different from most other goods or factors of production. Land is fixed in quantity. It is not manufactured in its raw state by humans so its production cannot be increased or decreased arbitrarily. One of the many arguments of taxing land is because of fixed nature of land that a tax on it does not affect the amount produced or consumed. Thus there is no additional cost, and such a tax is more efficient (less costly to the local economy) than other taxes that reduce production.

According to Cohen and Coughlin (2004) proponents of land taxation note that the supply of (unimproved) land, which is provided by nature, is fixed. In other words, the supply is perfectly inelastic. This implies that the supply curve for land is vertical, as shown in Figure 7.

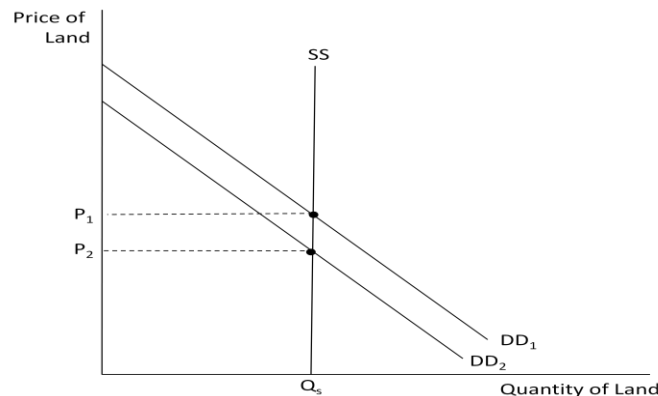


Fig 7: Taxing land

A tax on consumers of land will shift the demand curve downward (DD1 to DD2). Figure 8 also shows a decline from Demand 1 to Demand 2.

Because the supply curve is vertical, shifting the demand curve downward implies that the new demand curve will intersect the supply curve at the same quantity of land as before the land tax (i.e.,  $Q_0$ ). As a result, the intersection of the new demand curve and supply curve will occur at a lower net-of-tax equilibrium price than before the land tax

(i.e.,  $P_2$  rather than  $P_1$ ), with no change in the quantity of land. The land tax thus has no effect on the allocation of productive resources. The result is that there is no dead weight loss (DWL) with land value tax as land owners bear the entire burden of the tax.

In contrast, a property tax on buildings is entirely different. As seen in Figure 9, because higher prices encourage producers to supply additional buildings, the supply curve for buildings slopes upward.

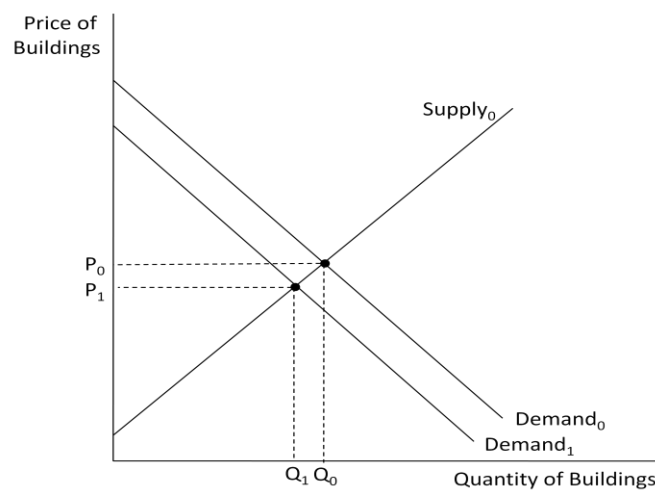


Fig 8: Tax on Buildings

For the same reason that increased tax lowers demand, makes the demand curve for tax on buildings slope downward, i.e. higher prices result in a decrease in the quantity of buildings demanded. A tax on building consumers causes the demand curve to shift down by the equivalent of the tax. The end result is that some of the burden of the tax is borne by individuals who produce buildings (in the form of lower building prices) and fewer buildings are utilized. So, when compared to taxing land, the tax on buildings distorts behavior, leading to a DWL.

The land value tax is a variant of the property tax that imposes a higher tax rate on land than on improvements, or taxes only the improvement value. Because of shortfalls in revenues derived from this source of taxation there is a suggested improvement of the property tax known as the “two rate tax “or split rate taxation (Stilwell and Jordan 2003). A two-rate tax (where land is taxed at a relatively higher rate) lowers DWL. Thus if the government’s goal is to DWL in check and keep total tax revenues unchanged, the tax on buildings can be lowered and the tax on land raised to achieve a revenue-neutral alternative. As a result, (building) tax is decreased (i.e., in Figure 2, the demand curve shifts upward from Demand1), while the neutral (land) tax is increased. The overall effect is to lower the DWL.

Mills (1998), offered an economic argument that can be made to support increased tax rates on land and decreased tax rates on improvements together with the decrease in DWL when he specifically showed how productive activity throughout a hypothetical metropolitan area would be changed by a revenue-neutral switch from a conventional property tax (i.e., one that applies to both buildings and land) to a tax on land only. The switch resulted in capital and labor being substituted for land and increased intensity of use of capital and labor increases the productivity of each land parcel, which tends to increase gross-of-tax land prices. Also due to the increased use of capital and labor on each land parcel, output in the metropolitan area expands—in fact, output increases at every location within the metropolitan area. Thus, a tax change would lead to denser patterns of land development and, therefore, inhibit metropolitan sprawl, as shown by Brueckner (2001).

Stanlake (1989) points out, in very many countries increasing population and rising incomes have increased the demand for land and land owners have benefited from rising land prices, although they may have contributed little or nothing to the increase in the value of their land. The main attraction of a tax on economic rent is the arguable case that the whole of the tax would fall on the landlords. Starting from the basic premise that the best price they could get for their land will be determined by demand and supply.

Whitehead (1992) then examines the effect of taxation on economic rents when a factor (like land) is in inelastic supply. He argued that the landlord owners are able to command economic rents and it is argued that the imposition of the tax will not cause any change in demand or supply. The tax will have to be borne entirely by the supplier, i.e. the landlords, and will reduce the benefits being enjoyed hitherto. So land owners earning economic rents cannot alter their position, which is already the most profitable one, and the tax will simply take off their profits. It invariably means that a tax on land values cannot change the market price - it must fall on the landlords, therefore, reducing the revenue they receive as landowners.

Increased value of land or economic rent arises from the efforts and expenditures of the community as a whole. This is as result of public funds which have been used on the infrastructure such as on roads, water and electricity services. There is a strong case to be made out for much (or all) of the increase in the value of the land accruing to the community rather than to the landowners, and many countries have introduced a development tax which is levied on any increase in the market value of land. The snag is that development taxes goes as far as that development is concerned, not with future appreciation of land value. The economic argument in favor of land taxes as against

development tax or any other tax on land is that much of what is paid for the use of land reflects socially created demand; and is not a payment to bring land into existence. The community can then capture in land taxes some of the values it has created - including those resulting from streets, schools and other facilities. This, it is maintained, would be a more equitable way of financing local government.

These theories and economics of land value taxation are important to guide the study and determine if the research findings confirm or contradict them.

### **2.3.2 Principles of Land Value Taxation**

The revenue earned from the land is a type of earning surplus achieved without any efforts and can be then considered as a suitable basis for taxes (Dadkhah , Mostafapour, Alibeygi , Sepehr 2005). In many countries, the increases in the population and the revenues have raised the demand for land and results in landowners receiving surplus on their regardless of their insignificant shares in the increase. Therefore, the main reason for land value taxation is that it is imposed on the landlords. The value of the land is attributed to what is achieved from the land in the production process. When the land is not situated in its best mood, the value of the land should be established based on the opportunity costs associated with its best application (McClucksey, 1988).

Land value taxation, a reform to an entrenched institution (property taxation) is, where land value, if not the only element of real property taxed, is taxed more than improvement value (Dye & England, 2009). Within such a tax system, land speculation is theoretically discouraged as property owners face a sizable tax regardless of how they improve their property. Therefore, landowners are encouraged to develop their parcels in

a way that generates the most utility because their taxes are fixed to land value and do not increase based on improvements they make to the property.

This tool splits the standard property tax into its two components of land values and building values. Separate knowledge of land and building value is useful for several reasons. First, depreciation allowances in the tax code make it necessary to separate depreciable value (building) from non-depreciable value (land).

Second, real estate assessors use sales prices of properties to estimate the current market value of neighboring properties for which no recent sale prices are available. Land values of neighboring parcels are generally much more highly correlated than building values, and knowledge of land values increases the precision of real estate assessment.

Thirdly, wherever adopting higher property tax rate on land than on buildings is being considered, a separate knowledge of land and building values is required. The tax rate is increased on the land part of the property and decreased on the building. The increased tax on land has a negative capitalization effect, resulting in land being priced closer to its true market value. Economically, of course, a "high" price for some land is essential to encourage the best employment of it.

The user of land ought to pay the amount of its worth at best use; but the owner, facing no cost of production, need not receive all that is paid. Government can reasonably take part of the total paid by the user. A heavier tax would change the conditions of ownership. The total collected from users would not change, but private owners of land would retain less, enabling the public revenue to increase as the treasury gets more.

On the long run, land owners would get less of the increments in land values and the public would get more. Socially created values would then be channeled into government use rather than private uses. Taxes could be related more closely to the cost of governmental services.

However opponents of land value taxation are of the opinion that the unearned increment in land value has been capitalized in the purchase price paid by the owner, thus they question the fairness of imposing a heavy tax on present land values for which owners have paid. The answer is that land value is not a one-off transaction, its value continues to increase way after the first transaction between buyer and seller and it is this increment that land tax wants to capture.

Wilks (1975) second pilot survey for land value taxation at Whitstable, England will be useful in concluding this discussion on principles of land value taxation. His clear view was that the ratepayers own the land out of which the tax emanates and it is up to them to see that the land is developed to its optimum use so as to be able to pay the annual tax. If they do not, no one but themselves can be blamed.

Finally relieving the words of Tideman (2009);

*“ individuals who have the exclusive use of desirable number plates should pay annually for that privilege; airline companies with exclusive landing rights should pay annually what other airlines would be willing to pay for such rights; and people who have fishing rights that are denied to others should pay annually according to the value of those rights.*

*The general principle involved in all of these examples is that whenever a government grants a right to some and not to others, those who are granted such rights should pay annually, to the government, the value of those rights, measured by what others who do not have them would be willing to pay to have them”*

In summary, the principle of land value taxation is focused on equity and benefit principle on the part of the public and owner of property respectively. The study is verifying if any land taxation scheme imbibes this principle and if land value taxation is masked with another tax or existing without the public's knowledge.

#### **2.4 Land Value Tax Estimation**

Property values or sales prices of real estate properties give its market value and not information about the separate value of land and improvements. The estimation of land value in areas that are substantially built up requires the separation of observable property value into unobservable land value and improvement value (Plassman and Tideman, 2003). Before one can tax land values separately from improvement values, however, one needs to develop the appropriate concept of land value for tax purposes (Bell, Bowman and German, 2009). The issue of separating the two components of property value is still a policy issue to achieving land value taxation. One view is that the value of raw land-land in its natural state-is the appropriate value for land taxation (Mills, 1998); another is that the value of the site-including streets, sewers, lighting, and the general state of development of the area, though not the structures on the specific site-is the appropriate value (Lindholm, 1969). The latter view underlies the basic principle of land value



taxation, thus is taken by many land value proponents. Along this premise, Bell, Bowman and German (2009) opined that land should be valued for tax purposes at its current highest and best use, not its value in some natural state.

For vacant land, the preferred approach to valuation is the **sales comparison**, or market data, approach. It is grounded in the substitution principle of valuation – land of similar utility will yield similar prices in a competitive, open marketplace (Wuensch, Kelly, and Hamilton 2000). This approach uses actual market transactions for vacant land with appropriate adjustments for size, shape, corner influence, location, and topography (Eckert 1990).

The most common approach to valuing land for tax purposes in urban areas with insufficient vacant land sales is the depreciated replacement cost approach to valuation – often referred to as the **abstraction, or extraction**, method of valuing land (Eckert 1990, Wuensch, Kelly, and Hamilton 2000). Abstraction emphasizes the substitution principle for improvements, implying that one would not pay more for a structure than it would cost to replace it. The technique starts with the market value of the entire property and subtracts the depreciated cost of replacing the improvements. This approach to valuation is grounded in the principle of substitution [Eckert 1990, Wuensch, Kelly, and Hamilton 2000]. The approach is based on the notion that, a property's value is directly influenced by the cost of acquiring a similar asset with similar utility. The residual is then allocated to land. Abstraction method presents with difficulty when faced with economic obsolescence and depreciation increase.

A second approach to valuing land when there is few land sales is the **allocation** approach, which attributes, or allocates, a percentage of total improved parcel value to land. This approach also seems to rest upon the substitution principle of value. The land percentage is derived from market evidence and applied to individual parcels. The approach implicitly says that if land typically accounts for a given percent or ratio of total value, then the percent or ratio is the likely land share of value for a given property.

Market value of land may be estimated more accurately using the **contribution** value approach. The approach is based on the assumption that differences deemed important in even similar properties within the same location will translate into different prices that the buyer will be willing to offer. The contribution value method emphasizes the principle of contribution, which says that value is related to effective market demand for the housing services or utility provided by various property attributes, rather than by their cost. Some features of a property may add either more or less than their replacement costs, as evaluated by the typical buyer.

The notion of market value seems to be more closely aligned with the principle of contribution to value – that is, how much does each characteristic of site and improvements contribute to the market value of the particular parcel? The most appropriate analytical tool for addressing the question is a statistical model that explains the sales price of individual properties as a function of the land and improvements attributes.

Mills (1998) was pessimistic about this approach to land valuation) when he said:

There is no prospect of a hedonic equation that would be adequate to assess site values of developed residential properties; much less a prospect of an equation that could assess site values of developed commercial property; and there is simply no other way to estimate site values of developed properties;

There are several literatures on examples of hedonic pricing models that have made contributions.

Earlier works on land value taxation focused on the use of models that combined vacant and improved sales to decompose total property values between land and buildings and analyzed winners and losers under a shift to a site value tax (Almy, Gloudemans, Jacobs & Denne , 2001).

Ashley, Plassmann, and Tideman (1999) addressed the question of how accurately developed commercial land can be assessed in an urban center where there are limited or no sales of such land. They assessed the value of commercial land in downtown Portland, Oregon, U.S.A by using a combination of a hedonic model of the value of improvements and a quadratic spatial smoothing technique for the value of land. Their model predicted land value for improved downtown commercial land better than the model used by assessors in the city and they concluded that the performance of the method was good enough to warrant further study (Ashley, Plassmann, and Tideman, 1999). The method is similar to Colwell (1998) that also used a parabolic smoothing function but based on the estimation of land value at certain key points or corners.

Gloudemans (2000) explored the possibility of using modern mass appraisal techniques to develop separate estimates of land and building values for residential properties, and

analyzes the tax shifts inherent in implementation of a land tax. He used data from three large North American metropolitan areas – Ada County, Idaho (Boise); Edmonton, Alberta; and Jefferson County, Colorado (suburban Denver) to test both a traditional “additive” multiple regression model typical of those used by assessment authorities and a “hybrid” model using nonlinear regression analysis. Results of the nonlinear models are tested on combined sales and separately on improved and vacant land sales. Based on his research findings, he concluded that modern mass appraisal methods can be adapted to estimate both vacant and improved residential land values with reasonable accuracy, even when there are no or few vacant land sales in certain areas [Gloude-mans 2000].

In a study to evaluate whether modern computer-assisted valuation methods can combine vacant and improved residential sales to develop more stable and reliable vacant land values (Almy, Gloude-mans, Jacobs & Denne , 2001) analyzed data from three urban areas in Canada (Boise, Edmonton, and suburban Denver) and concluded that properly specified and calibrated models could be decomposed into land and building components. The research concluded that vacant land can be modeled with improved property, provided that vacant land is similarly serviced and there are sufficient vacant land sales to provide benchmarks to ensure a reliable decomposition of values.

Gloude-mans, Handel, and Warwa (2002) tested the efficacy of different models, based on different data sets, in estimating the value of vacant land in urban, built-up, areas. Their concern is the fact that the appraisal of vacant residential land tends to be comparatively difficult and studies of assessment performance consistently show values to be far less accurate or reliable than for improved residential properties. They tested three different models to estimate the value of land – a land model using only vacant land

sales; an improved a model using only improved sales; and a combined model using both vacant and improved sales. They reasoned that if the combined model could perform as well (or nearly as well) as the individual models in estimating land value, they should be able to perform even better in other, older, areas with fewer vacant land sales. They concluded that the combined model, using both vacant and improved sales, performs as well as the individual models. Thus, a combined model lends stability to vacant land values and provides much needed market benchmarks where vacant land sales are lacking. They concluded that the contribution principle of value seems more consistent than either the abstraction or allocation principles with the notion of market value; that market data will capture the value represented by the anticipation principle better than a cost-based approach; and that there are adequate analytic tools available to estimate with reasonable accuracy independent land and improvement values.

Plassman and Tideman (2003) developed an empirical framework for dividing property value between land and improvement value and used this method to estimate land value in downtown Portland, Oregon U.S.A. The method which they adjudged simple, ensures transparency in property assessment and yields separate estimates of land and improvement value that are important for income tax and insurance purposes as well as for property assessment and property taxation. One shortcoming of their data set is that they did not take cognizance of building characteristics other than square footage and building age. Rather they used land value as a proxy for the value of building characteristics.

Bell and Bowman (2006) addressed the question on accuracy of separate land and buildings values through case studies of land valuation in selected localities in four states

in the United States requiring separate land and building values. They identified three different methods as used by the study areas: abstraction, which calculates land value as the difference between total parcel value and estimated value of buildings (replacement cost less depreciation); allocation, which assigns a given "typical" percentage of total parcel value to land; and contribution value, which uses non-linear multiple regression to identify the marginal contributions to market value made by various property attributes. Their study found out that one county- Lucas County in Ohio, United States made considerable effort of separate regression models for each of several property attributes, rather than a single model that includes variables for the several attributes thus developing a methodology that is different from what the other areas are doing. According to Bell, Bowman and German, 2009 Lucas County uses a set of estimation procedure that we consider a variant of the contribution value method . This led to their optimism about the ability to value land reasonably and accurately for land value taxation, even where there are not many sales of vacant land.

In another study to determine if values differ with methodologies or different valuation approaches, Bell and Bowman (2008) compared the land value estimates obtained from the three areas to baseline estimates derived for each area using a single, consistent approach for all three areas. The purpose of the comparison is to determine the extent to which different valuation methodologies result in different estimates of land values for tax purposes. The study applied a hedonic pricing model to estimate in a single, consistent manner the land contribution to market value of sold properties. These estimated land values then are compared to the assessed values of land obtained from the

localities. The study found that different results do flow from different valuation methods.

This study took a cue from the literature to depart from the current practice of applying code or prescription rates on property values to determine land value by APLUC. It instead adopted a variant of contribution value method that suits the study area to partition property values into land value and building values.

## **2.4.1 Mass Appraisal and Modeling**

### **2.4.1.1 Computer Assisted Mass Appraisal**

Mass appraisal is the systematic appraisal of groups of properties as of given date using standardized procedures and statistical testing. Single-property appraisal, in contrast, is the valuation of a particular property as of a given date.

The basic principle of Mass appraisal is the same as that of single-property. This is because both involve basically the appraisal of many properties as of a common date, but mass appraisal techniques emphasize models (equations, tables, and schedules). Mass appraisal, unlike single-property appraisal, requires the development of a valuation model capable of replicating the forces of supply and demand over a large area and appraisal judgments relate to groups of properties rather than to single properties. Model construction can be viewed as a two - step process: (1) specification of the basic model structure and (2) Model calibration.

Computer-assisted mass appraisal (CAMA) is the term applied to computer software that incorporates automated valuation methods (AVMs). The more common AVMs used in

CAMA systems are the traditional cost method, comparable sales method, multiple regression analysis, adaptive estimating procedure (AEP) (also referred to as feedback), and the transportable cost-specified market (also called market-calibrated cost). CAMA models use regression analysis or other statistical methods to measure the separate contributions of each different attribute to total value (Bell, Bowman and German, 2009). They pointed out that that for all properties sold and unsold, the computer program can multiply each attribute value by its estimated effect, add them all up, and produce an appraisal of the total value of the property.

Mass appraisal analysis begins with classifying properties to their various use classes or strata based on highest and best use, which in most cases equates to current use. Model in valuation or appraisal is a representation in words or an equation of the relationship between value and variables representing factors of supply and demand. Firstly the supply and demand factors that influence value, for example the plot size will be identified by the valuer/appraiser and this will help specify the model. Then, the model is calibrated. That is, the adjustments or coefficients that best represent the value contribution of the variables chosen are determined.

Mass appraisal builds on the same basic principles as single-property appraisal because it involves the appraisal of many properties as of a common date. However, mass appraisal techniques emphasize equations, tables, and schedules, collectively called models. The basic steps in CAMA valuation modeling can be categorized into 4 steps.

### **Step 1- Exploratory Data Analysis**

The questions that are answered under this step are:



- What data is available?
- Is the data correct?

The model builder looks at the data from every possible perspective. The summary statistic can also be looked at. A graphic output can be done and chart the two variables against each other such as sale price and square foot of living area. This step makes sure that available data is correct and can be used for modeling.

### **Step 2- Model Specification**

Model specification is the first major step in the development of any mass appraisal model. It is the designing of models based on economic and appraisal theory and market analysis. It includes selecting the supply and demand variables to be considered and defining their relationship to both value and one another. A general mass appraisal model is one that permits the appraiser to determine its specific format or content. The model builder poses the question:

- What data is useful? i.e. what factors contribute to value?

He develops a form of the model regardless of how the model will be calibrated or estimated later on.

Thus the model builder specifies the variables, or property characteristics, to be used in the model and their relationships. A simple general model can be expanded to reflect the complexities of the market by expansion of each variable.

Mass appraisers must understand the models they use and be sure they reflect the way property is valued in the local market.

### **Step 3: Data Transformation and Model Calibration**

Model calibration is the process of adjusting mass appraisal formulas, tables, and schedules to the current market. It involves solving for unknown quantities in a model, for example, construction costs and depreciation in the cost approach, the adjustment amounts in the sales comparison approach, and the capitalization rate in the income approach. This step answers the question;

-How do you use data in a model?

In the cost approach, for example, calibration involves setting or updating base rates and cost adjustments. Although the structure of a mass appraisal model may be valid for many years, the model is usually calibrated or updated every year. To update for short periods, trend factors may suffice. Over longer periods, complete market analyses are required. The goal is for mass appraisal equations and schedules to reflect current local market conditions. Data transformation is very helpful as the equation to use is developed. It involves taking a variable and turning it into a different form. For example;

$$\frac{\text{Sale Price}}{\text{square foot of living Area}} = \text{Price per Square foot of living area}$$

### **Step 4: Model Testing**

The question: how good is the model result? is answered under model testing. In

summary, model building requires good theory, data analysis, and research methods. The best valuation models will be accurate, rational, and explainable. Models which are not in line with these three qualities are questionable. For example cost manuals not tuned to the local market. The accuracy or reliability of property value estimates is as good as the data used in the model development as is confirmed by McCluskey et. al (1997) and Ward (2001), who state that mass appraisal is effective and efficient if developed from data that is consistent and accurate. The problem, which is common to most jurisdictions, is that the data is not always consistent (Ward, 2001). For example, different condition codes may have been entered for similar dwellings and important data may be missing.

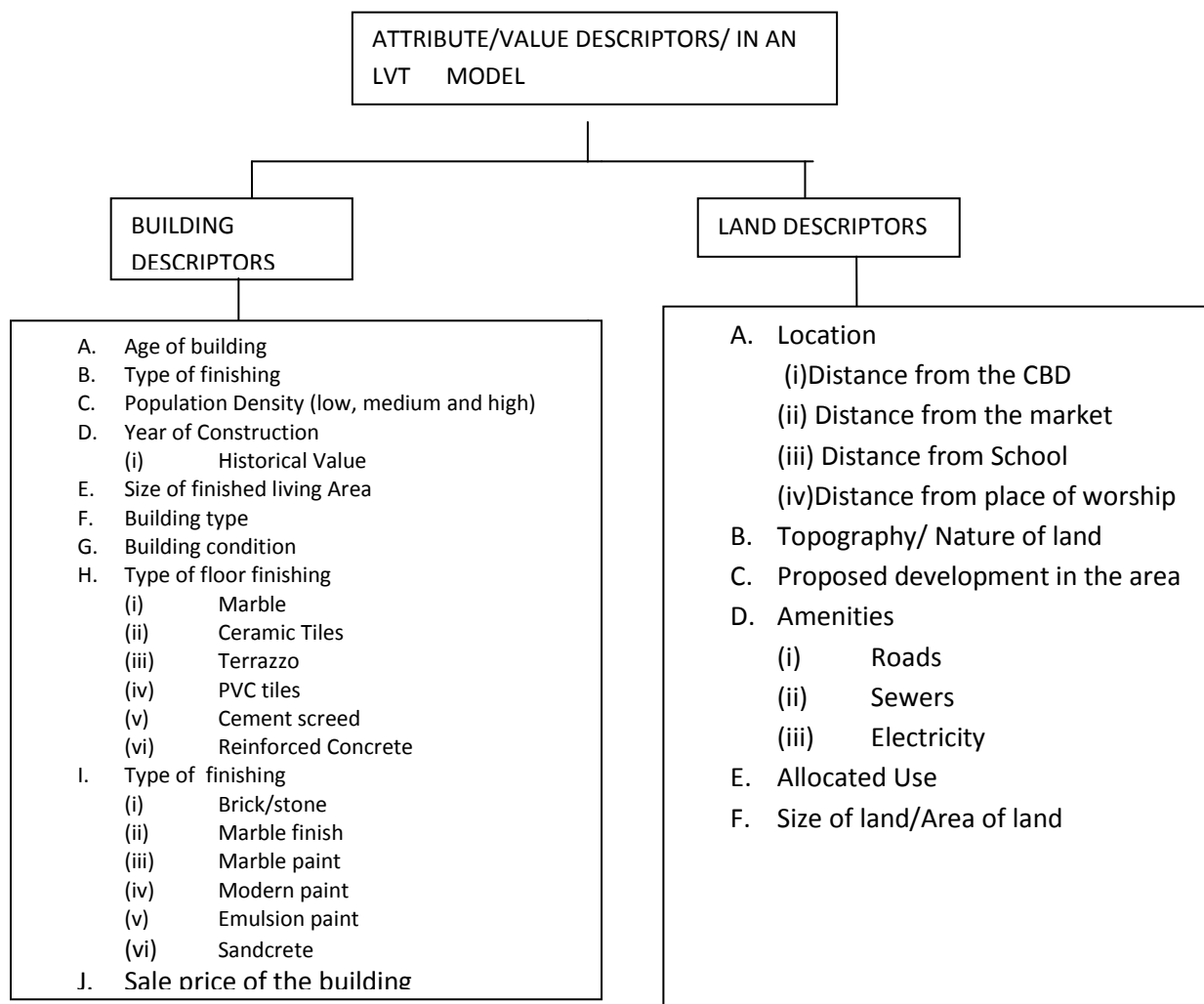
#### **2.4.1.2 CAMA and Geographic Information System (GIS)**

Appraisers have taken a step further in mass appraisal of land by valuing land using land value maps. Land value maps break down sales data for vacant lots into square-foot and front-foot rates modified with depth tables to account varying lot dimensions (Bell, Bowman and German). These land value maps and tables are then linked to the detailed attributes of individual parcels with the aid of the computer. CAMA procedures essentially require refined manipulation and spatial analysis which is achievable with GIS. Bell Bowman and German (2009) observes that the specification of location effects in CAMA models has progressed from using a simple multiplier for each fixed – boundary neighborhood to quantifying the data that go into choosing and determining those areas. In effect, GIS helps the appraiser in neighborhood analysis by ascribing a locational factor or multiplier to similar properties (similar in age, size, quality and condition) within a neighborhood.

These studies affirm that the issue of separating land value from building value has been in the forefront of land value taxation issues. Most of the literatures are on practise and policies associated with land value estimation for taxation in a few States in the U.S. There are no existing literatures on separation of land value from improvement value for land value taxation purpose in Nigeria. This study therefore intends to fill the gap by developing a framework that will determine land value and improvement value separately to obtain residential property value in Anambra State. Past works on CAMA models indicates that computer program multiplied attribute values by its estimated effect and adds them up to produce the total value. In contrast this study develops a model that measures the impact of individual attributes on land and improvement value and on property value.

### **2.5 Attributes/ Value Descriptors of a Land Value Taxation Model of a Residential Property**

Attributes or value descriptors that make up a generic valuation model for a residential property are the characteristics of the property. They are such things as the size, land use, neighborhood etc. They can be classified into two groups, Building Descriptors and Land Descriptors.



**Fig 9: Value Descriptors in a Land Value Taxation Model**

In developing a model, one is constantly faced with a task of ascertaining which of these descriptors will form part of it. The importance of an attribute is known only after the data have been analysed. Therefore more attributes are usually collected than are needed for valuation (Ping, 2005). Relationships usually exist between descriptors but generally two relationships are seen;

- (1) How are the descriptors related to each other?
- (2) How does changes in quality and quantity (size) of descriptors relate to changes in value? For example does every square meter added to the size of a property make the same marginal contribution in value? i.e. are the descriptors related linearly or non-linearly?

### **2.5.1 Building Descriptors**

These are the variables that best describes an improvement or property. These variables are given numerical values before they are imported into the LVT mode. Variables whose values can be quantified easily (finished area, age of building, no of floors, sale price of property, etc) are measured then the rest are quantified by ranking or percentage adjustment ( e.g. property type, type of finishing, floor finishes, etc). There are techniques which are used to come up with quantities for descriptor type of variables of which quality class will be one of it. For example the quality of construction can be in a category ranging from

A - Mansion type classification or construction

C -Typical quality of construction

D, E, F - from sub-quality to poor grade construction.

Any descriptor that will be part of any LVT model is usually defined during model specification.

## **2.5.2 LAND DESCRIPTORS**

Unlike building descriptors, land descriptors are few. Location is the most important of the descriptors. This can be seen in this analogy; people would attach additional value for a well located land site with special advantage rather than a land site that is not properly located with advantages. Another very common descriptor is the lot size or area of the land. Topography as a quality descriptor defines the land as rolling, swampy etc. A numeric quantity which is done as percentage or ratio is attached to it. For example, a level ground will be the basic value of 1.0, higher or rolling ground will have a higher than standard value (1.25) because of distinguishing characteristics of a rolling terrain (as per good view). Lower level /swampy land will have a value like 0.8 because of poor topography.

Literatures succeeded in establishing that land value attributes are strong determinants of property value but to what extent or degree is not known. This study therefore uses a model to determine the degree of influence of land attributes on property values and not mere deductions.

## **2.6 Land Value Taxation in Nigeria**

Before discussing the prospects or if Nigeria qualifies for LVT it will be appropriate to briefly review Nigeria's land use structure and consequently its land market.

### **2.6.1 Nigeria's Proprietary Land Structure**

The proprietary land structure or the system of land holding is an important factor for consideration in land tax modeling or system reform (Igwe-kalu, 2009). Every country's

land tenure is in one way or the other tied to its culture. This is because every land tenure system is founded on certain social and economic concepts (Faravacque and Auslan, 1992).

Nigeria is a country with three major ethnic groups and multiple ethnic groups. This multiplicity can be envisaged in the multiple land tenure systems. In Nigeria there were basically two systems of land tenure before the enactment of Land Use Act. The first which operated in Northern Nigeria over much of Hausa land was feudal tenure system under which the Fulani's' claimed over lordship of the land after the Islamic conquest. The tenure was signed into law as Native Rights Ordinances of 1910 and successively amended, until the Land Tenure Law of 1962. The law declared certain lands in northern Nigeria as "native lands" and vested the management and control of these lands in the Commissioner for Lands and Survey to administer such lands for the use and common benefit of the natives. The Ordinance laid down maximum of 1,200 acres for agricultural grants and 12,500 acres for grazing purposes.

In southern Nigeria, customary system of land tenure governed land interest and land was owned by communities, extended families and individuals in freehold. The system recognized families and lineages as owners of land. There were also crown lands held by Governors which has been acquired for public purpose. This became state lands after independence. This has led to the land market we presently have.

### **2.6.2 Review of the Land Market in Nigeria**

Nigeria's long history of private land markets and private land ownership was widespread pre-1978. In 1978 the military government adopted the Land Use Decree No. 29 of



March of 1978 (herein the "Land Law") which nationalized land. The law placed ownership of land in the hands of the state governors "in trust" and for the benefit of all the Nigerian people.

These land rights are administered by the Governor's office and local government in urban areas and non-urban areas respectively. In urban areas, land rights prior to the enactment of the law were superseded and today, landholders may obtain only a statutory right entitling them to obtain a "certificate of occupancy" evidencing their rights, which is essentially a state lease of up to 99 years.

The Land Law resulted in 3 major changes. First, it ended private ownership *per se* and established statutory rights of use which may be alienated in market transactions only with the consent of the governor. Secondly, though the Land Law essentially nationalized all land, persons in occupancy at that time and whose land has not since been subjected to a specific government acquisition action, remained in possession. They are entitled to convert their rights to a statutory certificate of occupancy, and their rights to do so are frequently traded as it is possible for any current holder to convert the right by establishing the chain of title. Such rights are actively traded despite the lack of a statutory certificate of occupancy. Thus it can be argued that, the land law created a vibrant informal land market that did not theretofore exist as they are unregistered and lack the certificate of occupancy and the official consent required by law.

Thirdly, the Land Law created the primary market for state land grants, as it induced significant state land acquisition and re-distribution activity, which continues today to a

somewhat lesser extent. As a result of the 1978 land nationalization there are today 3 distinct land markets in Nigeria:

- The primary market for direct state allocations;
- The organized secondary market for statutory land rights which are documented by official certificates of occupancy;
- And the informal secondary market for pre-1978 land rights, which have not yet been converted to statutory rights and for which no statutory certificate of occupancy exists (Butler, 2009).

The size of the primary state market may differ significantly among the Nigerian states, depending on many factors, including the amount of unused or unallocated land controlled by the state and the local willingness to engage in further land acquisition.

The formal market exhibits two primary characteristics - the existence of a statutory certificate of occupancy and compliance with the formal consent procedures for market transactions with land. It is clear that there are quite a few transactions in which existing statutory certificates of occupancy are transferred by standard contractual documents and which follow the rules of common law legal transactions and it is quite difficult to find the proportion of the land market transaction that is formal or informal, though it is evident that a significant amount of allocated state land appears to be under-utilized or not used at all.

### **2.6.3 Prospects of Land Value Taxation in Nigeria**

There are no readily available tools, and less political will, to recapture land for the community due to a number of reasons;

- Once land is allocated, there is only an obligation to develop it, not to use it continuously, and many large and serviced commercial and industrial land sites allocated by the state may sit unused for years. The initial and recurring costs (maintenance costs, etc) of owning the land right are probably too low to compel re-use, leading to long term speculation. Once the initial development obligation is met public officials view allocated land sites as being in the secondary market regardless of whether they are used and the state has not derived a means of dealing with long term speculation in state land allocations. Thus, it is not uncommon to see deteriorating and dilapidated properties lying vacant while remaining under the control of the original grantee.
- Another contributory factor is prices for state land grants which are usually significantly lower than market prices, encouraging speculation and under-utilization. Some land administration officials in Nigeria estimate that prices for state land grants are 40 percent below prices for equivalent parcels in the private secondary market.
- With respect to new state grants, violation of the mandatory two year development period is commonplace and enforcement is lacking. The usual procedure is that all land granted by state are subject to a “development covenant” that requires the recipient to invest in land improvements within two years of the grant. In principle

it is not permitted to transfer land rights prior to satisfaction of the development covenant, but this is not strictly enforced. Statistics are not available on the typical holding period for state land grants and particularly the number of transfers prior to satisfaction of the development covenant, but by past observation, this practice is believed to be widespread. In effect, failure to enforce restrictions on the number of land grants allowed to any individual is widely believed to allow significant speculation in state land, something that the Land Law was intended to prevent.

- On adoption of Land Law, one of its main objectives was to exercise control over land allocation and use in such a way as to prevent excessive speculation and accumulation of landed wealth in a few hands, and to assure access to some land for a large part of the population. From the existing evidence, the Land Use Law does not appear to have met its original objectives. Speculation is widespread in state lands; restrictions on accumulation of multiple state land grants are haphazardly enforced; many land grants benefit only the wealthy and well-connected; and the secondary markets, both formal and informal, are strong alternatives to a broad state land program.

These strong points suggest that effective land taxation policy, simplified procedures, adherence to taxation objectives and increased transparency together with recouping land value for the community could lead to substantial improvement of the land markets.

## **2.7 Studies on Practice of Land Value Taxation**

Land is a ready target of taxation because its immobility and its taxation can be correlated with land registry. Its taxation has been undertaken around the world on both Georgist

and non-Georgist ideas. Land value tax and two-rate taxes were used and are still being used by developed and developing countries alike. Taxation of land values began with its 1849 adoption in New Zealand, and today it is practiced in countries as diverse as Estonia, Fiji, Denmark, Estonia and parts of Australia, New Zealand and the USA.

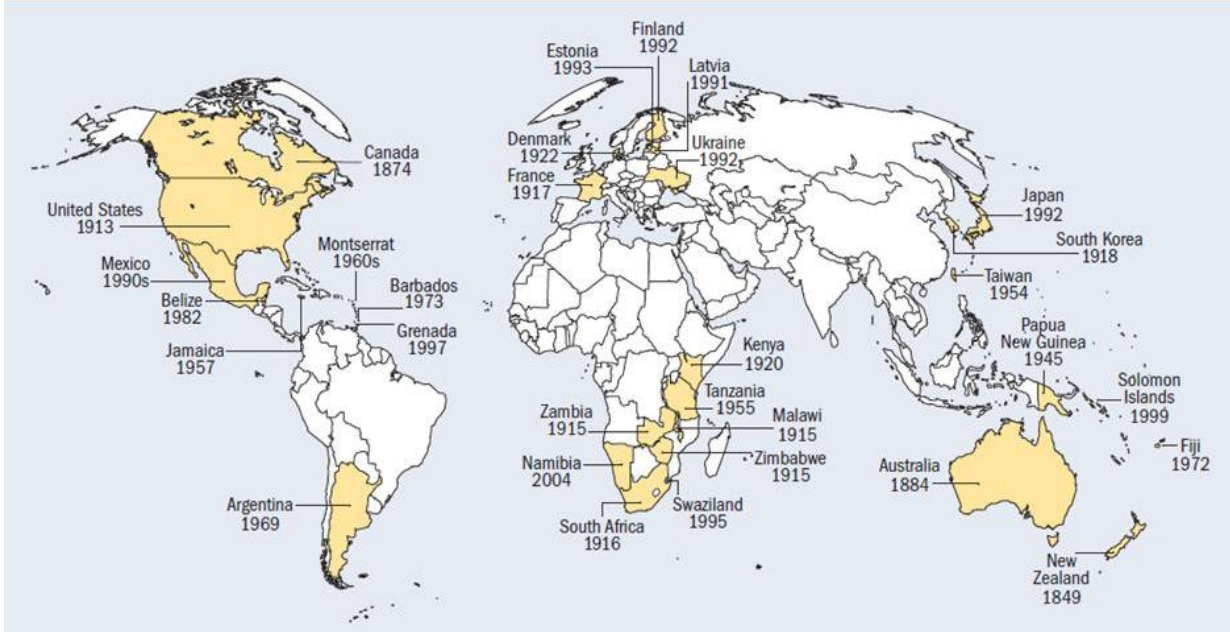
Some of the countries that used or are still using some form of land value tax are listed in Table 1 and Figure 10 (with year of adoption)

**Table 1: Countries where Land value taxation was practiced/are still practiced**

CONTINENT	COUNTRIES
Africa	Kenya, Namibia, Zimbabwe, South Africa,
Asia	Japan, South Korea, Taiwan,
Australia and the South Pacific	Australia, Fiji, New Zealand, Papua New Guinea, Solomon Islands, Vannutu.
Caribbean and Latin America	Bahamas, Barbados, Belize, Grenada, Jamaica, Mexico, Argentina, Chile.
Europe	Denmark, Estonia, France.
North America	Canada, United States.

*Sources: Franzsen (2009); Franzsen and McCluskey (2008); Bird and Slack (2004); Andelson (2000).*

**Countries with Land Value Taxation Experience by Year of Adoption**



**Figure 10: Countries with Land Value Taxation Experience**

*Source: Adapted from Dye and England (2009)*

**2.7.1 Land Value Taxation in Developed Countries**

Australia consists of six states-New South Wales, Queensland, Victoria, South Australia, Western Australia and Tasmania. In the nineteenth century, land value taxation (the adoption of which can be traced to Henry George) with base as unimproved value was used extensively. State land taxes were introduced into the six states in the following order: South Australia 1884; New South Wales, 1895; Tasmania, 1907; Western Australia, 1907; Victoria, 1910; and Queensland, 1915 (Forster, 2000). A federal land tax was introduced in 1910-11 (Land Tax Assessment Act, 1910; Herps, 1988) with the aim of financing a nationwide old-age pension plan and as a means to break up large tracts of underutilized land(Dye and England, 2010, Smith, 2005, Reinhard and Steel

2007). The federal land tax was abolished in 1952 (Herps, 1988). However, at present all State apart from the Northern Territory applies land tax as a state tax based on the unimproved value of the land. Its use began in New South Wales and Queensland in 1890 and in Western Australia in 1902. In South Australia and Victoria, net annual value rating is predominant, though site value rating has existed in the two states.

Land value, capital improved value as well as annual rental value are extensively used as tax bases within the country with some states applying more than one tax base (e.g. Western Australia and Victoria). Out of the eight states, six states as well as the Australian Capital Territory has land value as their tax base. Queensland is the only state that still exclusively uses unimproved value as its tax base. The Northern Territory does not have a land tax.

New Zealand's tax base coverage is comprehensive and its system in many respects is a best practice model that could be studied. Since colonial settlement, local authorities have the choice of three alternative systems on which the real property tax or rates may be levied. These systems are;

- i. The total value of land, buildings and other improvements (capital improved value);
- ii. Land value only (previously known as unimproved value); and
- iii. The annual rental value.

Provision for the rating and taxation of land and property was made from the earliest days of organized European settlement in New Zealand. During the first decade of British

colonization in the 1840s, annual value (rental value system) was the most extensively used basis for rating, which was in effect an adoption of the 'English system' of rates. Because the system was inconsistent with the predominant pattern of land tenure, it was not successful (Dowse & Hargreaves 1999). From 1854-1855 rates were successfully levied on an estimate of land alone excluding houses or building. By this time all the main rating systems employed today (capital improved value, annual rental value and unimproved value) had been adopted in one form or another by various local authorities under the then provincial system of regional government (McCluskey, 2005). After 1896, with the advent of three recognized systems of rating available to local authorities, there was a steady move away from annual value and capital value rating to unimproved value rating. A major conceptual change to rating took place in 1970 when the term 'land value' effectively replaced 'unimproved value' as the basis for rating valuations such that 90 percent of all municipalities had by poll adopted land value rating as at 1982, which accounted for 80 percent of local government revenue (Dye and England 2009). However, there has been a gradual, swing away from land value to capital improved value (McCluskey and Franzsen, 2004).

The Local Government (Rating) Act 2002 replaced the Rating Powers Act 1988 and provided the powers to set assess and collect rates to fund local government activities. Its intent was to update existing rating powers to meet the needs of modern local authorities. In the 2006-2007 fiscal years, forty four local authorities used capital value for their general property tax, thirty- six used land value, and only two used rental value. All three property tax systems are used by the five large cities in New Zealand. Auckland, the largest city, is one of only two jurisdictions using rental value. Christchurch, Dunedin,



and Wellington all use total value. Only Hamilton still uses a land value system( Dye & England, 2009 as cited in McCluskey, Grimes, Aitken, Kerr, Timmins. 2006).

History of land value taxation in United states can be linked to Henry George's Progress and Poverty , where he refers to "the effect of substituting for the manifold taxes now imposed a single tax on the value of land" (Young, 1916, Goodale 1955) . land value taxation has appeared in three states (New York, Hawaii, and Pennsylvania) but maintains a significant presence only in Pennsylvania. The State of New York's lone participant in land value taxation, the City of Amsterdam, adopted the policy from 1995-1996 after the state passed legislation in 1993. Hawaii adopted land value taxation statewide in 1963. In 1913, legislation was passed in Pennsylvania to allow the states two second-tier cities, Pittsburgh and Scranton, to tax buildings and improvement at a lower rate than land. Subsequently, further legislation was passed by the mid 20th century to allow other municipalities and taxing districts to adopt forms of land value taxation. Among the localities to take advantage of this legislation were Harrisburg (1975), Allentown (1997), and Altoona (2002). As of 2008, sixteen districts maintain a split rate tax system. These municipalities and school districts have continued to employ the policy because it is believed that it encourages, or at least does not impede, economic development, that it is viewed as a more stable tax base, or that it is a more equitable and just tax

### **2.7.2 Land Value Taxation in Developing Countries**

In the early twentieth century, various provinces in South Africa enacted legislation permitting cities to adopt land value taxation. After the establishment of the Union of

South Africa in 1910, most municipal ratings were based on the total value of both land and improvements. At this stage the labor party of South Africa included the taxation of land in its manifesto.

Transvaal Provincial Ordinance No.1 of 1916 allowed for site-value rating and prevented flat rating (total value). This ordinance which consolidated into Ordinance No.20 in 1933 had the effect of ensuring a higher rate on land than on improvements by one penny in pound. This provision was removed in the Ordinance no.11 of 1977, where the emphasis is still on rating land but allows equal rating of improvements under certain conditions.

Three tax bases from which the municipalities can choose evidently existed. This tax bases are-; land value (site value rating); total value (flat rating) and the value of both land and improvements (composite rating).

Johannesburg was the first municipality to adopt site-value rating in 1918, followed by other municipalities. By 1955, 20 out of 60 urban municipalities were practicing site value rating and by 1979, all the major municipalities in the Transvaal had followed suit. By 1984, 62 cities were practicing site-value rating (this accounted for over 70 percent of the total value of rating in South Africa), 2 cities (Cape Town and Port Elizabeth), were on flat rating, and the rest of the cities on composite rating. Those on composite rating, collect a larger percentage from land values than from improvements (Andelson, 2000). Thus for nearly a century, various cities in South Africa relied upon taxation of urban land values as a significant revenue source.

In 2001, the national government enacted legislation mandating a traditional property tax throughout the country. This elimination of land value taxation redistributed the tax

burden in various South Africa cities in years to come. Improved capital value became the tax base not because of the inadequacy of land as tax base, but the intricacies of property taxation seemed easier.

Land value tax in Jamaica was recommended to be adopted in 1943(Copes and Rybeck 2001) as a land reform. According to Dye and England (2009), the proposed reforms only gained momentum in 1955 after the government employed the services of J.F.N. Murray (a qualified advisor in the ‘unimproved Value Systems’), who prepared a comprehensive report in 1956 which served as the blueprint for the development of the systems of land taxation based on unimproved values. He provided the legislative and practical framework for the implementation of a land value tax thus laying the important foundation for its adoption (Franzsen, 2009). A few years later, when Norman Manley’s colonial administration took office the land valuation law was passed by the Jamaican and proclaimed on January 18, 1957. During the debate on the bill, Mr. Manley said amongst other things that “the present system (taxation of land and buildings is a tax not upon land, but on man’s efforts put into land. It is a tax on labor- and the consequence is that it implies that there is no tax upon those who do nothing with land, and more tax on those who do more and more with land” (Copes and Rybeck,2000). To undertake a valuation program as envisaged by the Jamaican land Valuation law adequate cadastre (a large scale map), upon which is delineated the presumptive boundaries of each parcel, identifiable by a numerical map reference system was created using aerial photography. In carrying out the valuation, it was found that there were many small parcels—over 30 thousand—with land of negligible value, worth 100 Jamaican pounds or less. These lands were all charged a flat minimal fee of pennies, simply to keep track of ownership titles.

On the extreme side were properties worth 20,000 to a million pounds, held by only 78 landlords. 10 thousand owners of properties lie between the very poor and the very rich and they were the only one that had parcels of modest value. So the government decided to use progressive tax rates, the higher the land value the greater the tax rates. Though LVT had a good beginning, there apparently was insufficient “grounding” of the concept and practice of LVT in the minds of the people and the political leadership for it to sustain a fuller implementation. The implication is that local officials have to go to the federal government to finance every little public works and public services. If the issue of LVT were to be revisited by the government, they could work to replace the high income taxes that are stifling production while simultaneously reaping more revenue from LVT. This would properly harness incentives to put Jamaica back on the road toward economic recovery.

Kenya introduced Land taxation in 1900, when the first system was applied in Mombasa on an annual rental value basis under street cleaning and regulations. In Nairobi, unimproved site value rating was introduced in 1920 in conformity with the systems then existing in Australia, New Zealand and Western Canada. The desire to widen the tax base to all the provinces necessitated the recommendations of the District Committee. In 1928, unimproved site value rating was introduced which was to a great extent influenced by Henry George’s ideas of a single land tax system. The Valuation for Rating Act provides for three systems of rating namely: area rating, unimproved site value rating and improvement rating. Unimproved site value rating and improvement rating apply to urban areas whereas area rating was to be applied to agricultural land. Urban authorities by law are allowed to use either of the two, but because unimproved site rating is simple and

amenable to mass appraisal when compared to other methods it became more attractive to local authorities. In applying site value rating, rates are based on the market value of the unimproved bare land, and where the land is developed, the improvements are ignored. Improvement rating, however, was only tried in Mombasa but was abandoned after a short period of time due to defects in the law (Aritho-Gitonga, 1980). The property tax (rating) system in Kenya was introduced early in the 20th century. It spread from South Africa to Rhodesia and from there to the three British East African colonies of Kenya, Uganda and Tanganyika (now Tanzania). Mombasa (in 1900) and Nairobi (in 1901) introduced a rating system based on annual rental value Syagga (1994) as cited in McCluskey and Franzsen, 2001. The English system was 'unsuitable for introduction in the new growing townships' and therefore, in the early 1920s, site rating was introduced - following the example of Australia and New Zealand ( Syagga and Olima, 1996 as cited in McCluskey and Franzsen, 2001). In 1920 unimproved site value (USV) was introduced for the following reasons:

- It would encourage land development and the expansion of the small, little-developed towns;
- It would prevent (or at least discourage) large land holdings for speculative purposes, especially by absentee landlords;
- It was easy and simple to administer, especially with a limited number of trained valuers (Gachuru and Olima, 1998).

The Ordinance was repealed in 1956 with the passing of the Local Government (Valuation and Rating) Ordinance, whose aim was to establish a uniform rating system

for all municipalities established under the Municipalities' Ordinance of 1955 (Ayiecho, 1996). A single rating law (Valuation for Rating Act (Cap 266) was promulgated for the whole country.

All of the rating authorities in Kenya presently utilize site rating, i.e. a land value tax although legislation in principle provides for area rating, an agricultural rental value or the possibility to also tax improvements (Ahene, 1997). Soon after the new rating legislation for Kenya was enacted, rating contributed substantially to annual local revenue.

Since the introduction of rates in Kenya, there has been debate on whether the property tax system should be based on land alone or on land and improvements. Several commissions and reports have concluded that improvements should form part of the tax base (Feetham Commission, 1926; Nyagah Commission, 1975; and the Omamo Commission, 1995). Some commentators are in favor of a rating system based on capital improved values, rather than site value. Syagga and Olima (1996) argue for site rating for undeveloped land and capital improved rating for developed sites. The Valuation for Rating Act 1956 already makes provision for rating improvements, but, there is strong opposition from wealthy landowners and politicians (Gachuru and Olima, 1998). Increasing urban populations has resulted in increasing demands for urban services and thus derived demand on local authority expenditure. Local authorities in Kenya are currently faced with the problem of inadequate revenue sources to finance the provision of local services. Property tax or rates commands the major source of revenue among the five major sources of local authority revenues even with the level of arrears and the rates of annual delinquency.

After surveying the experiences of taxing jurisdictions around the world, it can be concluded that land value taxation is more than an intriguing and attractive idea. It is a form of taxation that has actually worked since the nineteenth century at national, state, and local levels of government.

## **2.8 Assessing the Applicability of Land Value Taxation in Nigeria**

Land nationalization and ownership system is the major factor that may work against LVT. By virtue of our Land Use Act, Laws of the Federal Republic of Nigeria, the issue of land value may be a major argument against land value taxation as it is specified that land does not have value. So we cannot be proposing land value taxation in Nigeria, as there is invariably no open market value and thus capital value from which land value tax can be obtained. My opinion about this can best be illustrated by this particular picture which land use law practice in Nigeria paints; when government acquires land for overriding public interest, that land itself does not have capital value and so it is not paid for by government. But when the same land owners sell their land for the purpose of carrying out development on the land they obtain the open market value of land which is recognized by Government in the form of acceptance of Deed of Conveyance or Assignment for the preparation of a statutory right of occupancy for the benefit of the purchaser. The Government collects about seven percent of the consideration as fee to be paid in the processing of the documents for the purpose of consent by the governor of the state. A good amount of revenue is generated through such consent fees by the Government from applicants of statutory right of occupancy. Thus Government can still in the spirit of generating more revenue to encourage sustainable development make provision for capital value as it concerns land value taxation.

A major fact which supports land value taxation in states that has adopted land use charge is that their taxation policy has already land as a tax base, thus the issue of seeing land as not having value need not arise.

The feasibility of land value taxation (taxing land at a higher rate than buildings) cannot be overemphasized considering the fact that it has been practiced in various nations. But a quest to implement this type of property tax reform could meet with some challenges (assessment, legal and political) especially in developing countries like Nigeria. Although most of the challenges can be surmounted, they need to be brought into fore when proposing for reforms.

The issues of tax administration are always a setback for tax reforms and land value taxation cannot be an exception. The most pressing concern is to assess the land and improvement values of all taxable parcels in a timely and accurate fashion (Bell, Bowman, and German 2009). Going by innumerable literature on LVT and evidence of its practice around the world, assessment challenges can be surmounted. For example, one survey in United States found that 29 states already require county and municipal assessors to list land and building values separately on their property tax rolls (Brunoi and Carr 2002). Even in states (USA) with no such requirement, local assessors often record land and improvement assessments, in addition to the total assessed values of properties (Dye and England 2010). In countries like Australia and South Africa there are also evidences of separate valuations of land and buildings to achieve LVT.

It would then seem that the administrative apparatus for a two rate property tax is a foregone alternative, thus the property rate reform to LVT should have a smooth sail.



This appearance is deceptive. However a little background on the position of property tax can give an insight on the foreseeable hitches with LVT. In Property taxation, one rate is applied on a property (building) by assessors to determine the tax payable, thus the issue of two rates on land and buildings does not arise. But a shift to LVT requires assessment of land and buildings thus assessors need to measure both components of total parcel value accurately to avoid tax payers' complaints and political reaction.

In urban areas, land value taxation is most likely to be implemented as an economic redevelopment tool. Because sales of land alone may be rare in urban areas, it will be unreasonable to rely on recent land only transactions to measure the land values of nearby properties with buildings and other improvements already installed.

There are various methods that are used to assess land values as different from improvements, i.e. the traditional and modern methods. Traditional methods have various drawbacks. The abstraction or extraction method obtains the market value of a property and deducts the cost of replacing its building and other improvements and leaving the residual value for the land. As time passes, economic depreciation and obsolescence may occur, and subjective judgments are needed to extract the residual land value from market data (Dye and England 2010). The allocation method which makes the assumption that land values are the same fixed percentage of total value for properties is erroneous in practice.

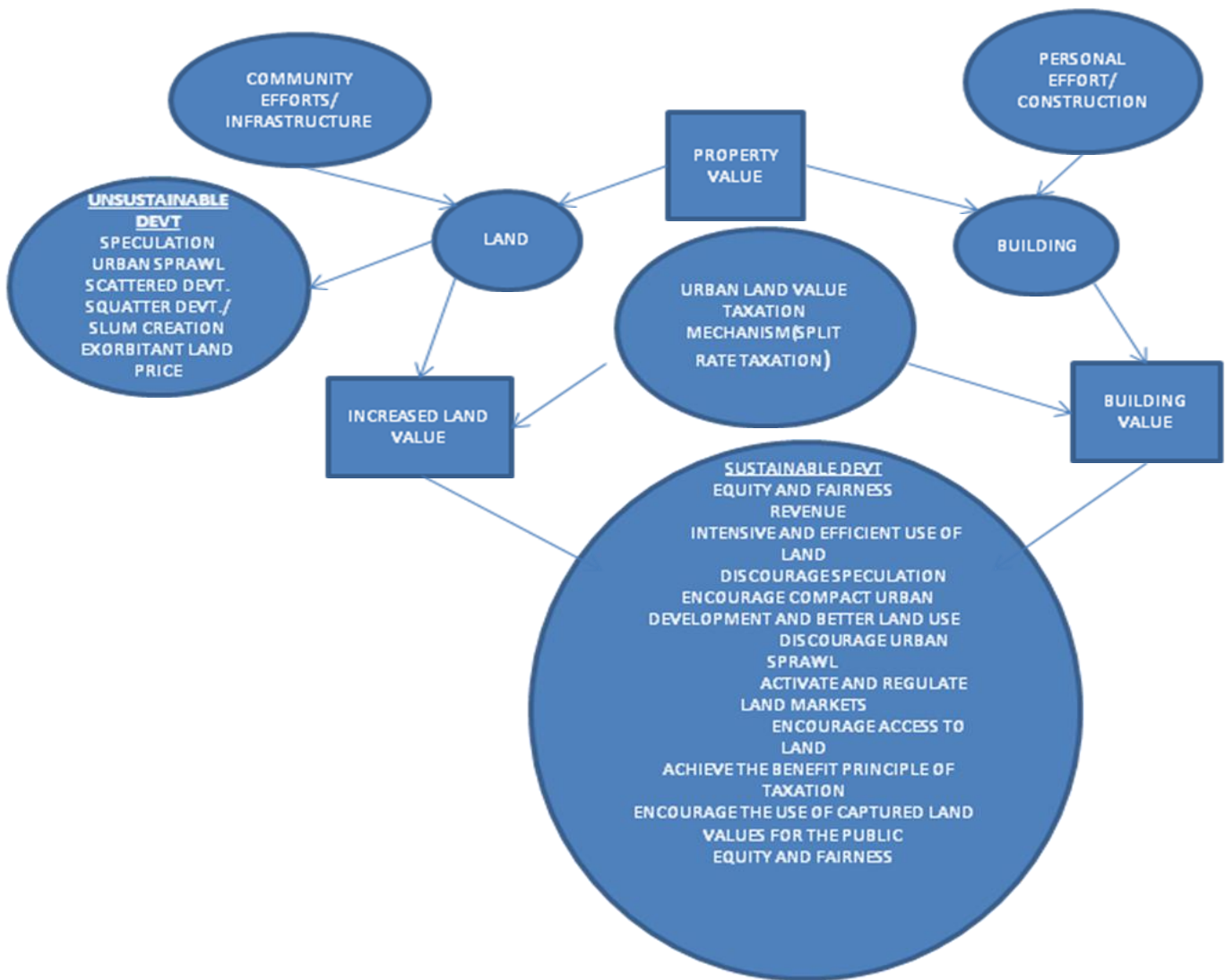
The traditional methods cannot provide the assessment data that is needed for a successful LVT. CAMA models (regression model) which are modern techniques have been used to break down the sales prices of houses or other properties into values

contributed by location, lot size and shape, building square footage, building style and age, and other property characteristics. Sophisticated assessors now use geographic information system (GIS) methods to define neighborhoods with roughly the same land value per acre (Dye and England 2010). Thus if best assessment practices are adopted, LVT will be a major solution to some of Nigeria's development strategies that are not sustainable.

In summary, before land value taxation can be implemented, some basic research needs to be done on these highlighted issues and assemble a broad coalition of supporters as the policy is likely to fail unless a broader group of taxpayers voices its support.

## **2.9 Conceptual Framework**

The conceptual framework defines the important concepts that predicate this research. They are the concepts of urban land value, land value taxation and sustainable land use. It also provides an insight or in depth understanding to the need to tax land value as different from building value.



**Fig 11 : Urban Land Value Taxation Concept Mapping**

### **2.9.1 Urban Land Value**

In pure economic sense, land is simply a natural resource, the only factor of production that cannot be created and is highly demanded by the rich and poor alike. Urban land is land that is situated in an urban area (a place which is surrounded by the city). Urban Land markets and prices are the chief determinants of urban land values, urban spatial expansion and geographic social patterns. Urban land prices rises with provision of infrastructures and amenities without corresponding increase in the income of city dwellers. The aftermath of this scenario is that cities living close to urban centers are increasingly faced with choices of unplanned settlement, emergence of slums or complete eviction. Furthermore population growth, urban expansion, economic development and investments in infrastructure and services, has continued to increase the demand for urban land and due to its limited supply, the ownership quest favors a few urban settlers.

In sub-Saharan Africa like Nigeria, 90% of all new urban settlements are taking the form of slum or in some cases sprawl development. Urban sprawl is responsible for changes in the physical environment, and in the form and spatial structure of cities. In many countries including the developed countries like United States, evidence of the environmental impacts of sprawl continues to mount. Kirtland et al. (1994) report that the impact of urban land on environmental quality is much larger than its spatial extent would imply.

It is recognized that over 70% of urban growth currently happens outside of the formal planning process and that 30% of urban populations in developing countries live in slums

or informal settlements, i.e. where vacant state-owned or private land is occupied illegally and used for illegal slum housing.

Increased land value is regarded as unearned income, and this is how fully or partially recouping benefits and redistributing wealth coming from land value increments is justified. These increments are converted into public revenues / benefits through fiscal tools such as taxes, tariffs, contributions and other measures to be paid by the private landowner to facilitate the capture of the value for the public sector, or through regulatory / land management / in kind / cost sharing tools such as on-site improvements that the landowner essentially finances out of his/her increased land values that benefit the community, the public, or residents in general (Smolka and Furtado, 2002 and 2003).

### **2.9.2 Urban land Value Taxation**

Urban land value taxation proposal is built on the theories of old and modern economics theorists. There are few differences in their views especially as it concerns tax burden and benefits of land value taxation. Nineteenth century political economist like Henry George ([1879]1962) proposed LVT (or site value taxation) in its strictest sense and thus defined it as a tax based on the value of land only, which ignores buildings, improvements, and personal property. This is done with the aim of retrieving from land owners the value of land for which they have no contribution. One of the advantages frequently claimed for land value taxation by Henry George (1879) is that it discourages speculators from holding land out of production by betting it will be worth more in the future—that is, it is thought to encourage the development of land sooner rather than later. According to him, taxes on the value of land not only do not check production as do

most other taxes, but they tend to increase production by destroying speculative rent. According to him if land were taxed to anything near its rental value, no one could afford to hold land that he was not using, and consequently, land not in use would be thrown open to those who would use it. The main idea behind the proposal for the land value tax is to eliminate the lumping of land and building and to tax only the land. The land value tax will be the most beneficial only when landowners pay it personally.

Modern economic theories on land value taxation propose a split rate taxation that shares the rate among the two components of property (land and building). They conclude that a land value tax is neutral in the choice of investing now or waiting to invest at a later time and in the choice of how much to invest at any point in time. Their conclusion is that when the taxable value of land is independent of its current use and instead based on its “highest and best use,” then timing of development is neutral.

The land tax is neutral with respect to the amount of investment, the timing of development, and the location or density of development. But, if the land tax replaces a traditional single-rate property tax that yields an equal amount of revenue, then the transition may affect timing and density of development (Dye and England, 2010).

Proponents of land value taxation are also confident that LVT is an exception to the general rule that taxes generate excess burden (deadweight loss). A tax levied on land will not reduce the provision and consumption of land. The feature that set land apart and makes it go against the general norm is its fixity. It means that a tax levied on land will not result to reduction in its provision and consumption. LVT will not change the quantity supplied as well as that demanded hence, does not distort investment choices.

The gross price of land (including the tax) remains unchanged; the net price to suppliers (landowners) fall by the full amount of the tax: and the quantity of land remains unchanged (Oates and Schwab, 2009).

In other words LVT is an efficient and neutral tax- it does not distort choices as to how much to invest in structures. The case for LVT and urban sprawl is seen to go either the way of decreasing urban sprawl or increasing it. Brueckner and Kim (2003) in their analysis about the impact of substituting a land tax for a traditional property tax with the aim of achieving the same revenue weighed both effects (urban sprawl or non- urban sprawl) and concluded that a standard property tax (where improvements are taxed) leads to a spatial expansion of the city thus will result to urban sprawl. Their analysis implies that substituting a traditional property tax with a land value tax (increased rate on land and decreased rate on structures) while maintaining a revenue neutral switch will decrease sprawl (Oates and Schwab, 2009).

As an alternative to traditional property tax, a pure land value tax will not be able to generate enough revenue stream. Oates and Schwab (2009) conclude that the revenue potential of a land value tax is much greater than often supposed. This is very true where LVT has taken the form of a two-rate tax, not a pure land value tax. That is, a lower rate on improvement values and higher rate on land values.

Dye and England (2010) reiterated that a pure land tax will tax all the rents from land away if improvements are completely exempted. Given these fiscal realities, it is not surprising that the land value tax is often phased in as a two-rate tax system instead of a pure land tax (England 2007).

Land value taxation fascinates economists who worry about inequality, such as the Nobel-prize winner Joseph Stiglitz who argued that land and housing, rather than the distribution of income and productive capital, are the key to a fairer economy. When public investment improves the value of a site—for example by building a new road nearby—the benefit comes back to the community in the form of higher tax receipts, rather than ending up as a windfall in the pockets of the owners.

Gaffney (1994) and Harrison (1983) stress that the land element of value is created by the community at large and that the capital element depends on what is built on each site and is unique to it and the landowner. The logic of land value taxation is that any tax on property should be based on land not capital (labour and buildings/improvement, so that the community can regain what it expended while building value which is borne out of the owners efforts is reserved.

### **2.9.3 Split Rate Taxation**

Traditional property taxation is very popular around the world as it is practiced by many countries. Property taxes have a number of advantages, both in terms of providing revenues to government (especially local government) and as a tool for guiding land use and development (Dale & Mclaughlin 1999). Although it is a venerable and important source of revenue in various nations, the property tax is controversial because it is widely perceived to be unfair and inequitable ( Youngman 2002) as it imposes a uniform tax rate on land and building. Literatures on property tax reform often recommend either a replacement of the general property tax by a land value tax, or at least a move in this direction by incorporating a differential tax incidence which is; heavier taxation of land



than of improvements. The main aim of most land based tax is to generate enough revenue needed by the government for providing and maintaining infrastructures. The implication is that any tax on land or improvement that does not distort revenue has the potential of being adopted as a tax system. Going from economic point of view, land value taxation is an appealing form of taxation. It taxes land which is fixed in supply and not subject to deadweight loss while reducing the tax on labor ( buildings and improvements), which is subject to deadweight loss and decrease in supply with increased tax rate.

In the context of this research work, LVT is a split-rate tax/two rate tax that works to split taxation of real estate property into its two component parts ‘Land and Building’ and is therefore different from other property taxes on real estate, which include the combination of land, buildings, and improvements to land. This is different from property taxation that taxes property as a single entity without separating into the two component parts.

Land based taxes (capital gains tax, stamp duties, property rates, etc) in Nigeria targets improvements thus penalizing hard work while encouraging some negative acts like speculation, urban sprawl, urban decay, informal developments etc. The dominant land based rate tax in Nigeria is property tax though a few states like Lagos, Anambra and very recently Edo states have lumped some land based taxes into what is known as land use charge. The land use charges are seen to tax land but the practice cannot be seen as to be land value taxation because it does not incorporate the characteristics for which land value taxation is known.

This study proposes a shift from a pure traditional property tax to land value taxation. There are two aspects to a shift to taxing land value. First aspect is keeping the rate on improvement steady while increasing the tax on land value. Second aspect entails raising the tax on land values while decreasing that of improvement. The former aspect will increase public revenue which may be source of public spending, while the latter will keep revenue neutral.

The consequence of this shift is that in the second case, a revenue-neutral increase in the land tax and decrease in the improvement tax increases the amount of development in the city: that is the density of development rises (Brueckner 1986). He also reiterated that the value of land will decrease where the whole community in a metropolitan area (as is obtainable in Nigeria) and not a single community adopt a split rate tax.

This research work, while proposing split rate taxation that increases the tax on land value, went further to develop a model that shows the impact land value variables have on the property value. The implication is that if the land value variables are very significant or even more significant than building value variables, there is every reason for land value to be taxed heavier than building value.

## **2.10 Effects of Land Value Taxation**

### **2.10.1 Studies on Effects of Land Value Taxation**

To discuss the relevant literature on effects of land value taxation this study draw upon John E. Anderson's write –up in Lincoln Institute of Land Policy's Land Value Taxation,

Theory, Evidence and Practice (2009), edited by Richard F. Dye and Richard W. England.

### **2.10.1.1 Theoretical Models**

Theoretical models help establish a basis for analyzing real-world empirical data that is found in general equilibrium and regression model. Jan Brueckner's 1986 study laid much of the ground work for modern analysis of land value taxation (Anderson, 2009). His study found that the move from a traditional property tax to a split rate tax in which land is taxed at a higher rate than improvements generally increases land intensity. He also made the important observation that as a tax on improvements is lowered, land values increase. Conversely, as a tax on land is increased, land values decrease. These opposing forces and their magnitudes are crucial to understand the potential ramifications of a split rate tax (Brueckner, 1986). Brueckner found that the overall impact on land values depends on the relative size of the tax zone to which the tax regime applies. If the said zone is a small share of the market area, then housing prices would be exogenous and remain constant. This is because the area in which the tax regime applies is negligible compared to the market area in determining housing prices. He also notes that while improvements per acre rise as a result of the lower tax rate on improvements, that land value increases as well. This latter effect is the result of the reduction in deadweight loss associated with the reduced improvement tax rate and increased land tax rate. A reduction in deadweight loss presents itself in the form of higher land rents, a residual of what revenue is left over after other factors of production earn their returns. The higher land rents are captured by landowners. Deadweight loss under the old tax regime has become surplus value. Therefore, this surplus value is reflected in higher land values. In this case,

Brueckner concludes that the impact of these increased land rents would be stronger than the impact of the direct tax on land.

On the other hand, if the zone of the equal yield tax regime change encompasses the entire market area, then the value of land would likely decrease. According to Brueckner's model, the likely decrease in land prices is the result of the elasticity of housing demand, the lack of locational advantage, and the resulting reduction in the profitability of development. In this case, the tax regime change does impact the price and supply of housing. The lowered tax rate on improvements means that improvements per acre are likely to increase. In turn, this is likely to lead to an increase in the supply of housing and a decrease in price. Additionally, the increased taxes on land cannot be passed on to final demand. Any attempt of the landowner to raise the price or rent of land would lead to less land being demanded, subsequently causing an excess supply of land and downward pressure on price (Oates & Schwab, 2009). While the lower tax rate on improvements would still likely cause an increase in improvements per acre and deadweight loss would still be reduced, these effects would be marginalized by the drop in housing prices, leading to an overall reduction in land values.

From Brueckner's groundbreaking modern analysis, theoretical models moved toward a discussion of land value taxation's impact on the time of development. Anderson (1999) posits that a move from a traditional tax regime to a split rate system hastens timing of development and increases capital intensity, which means the amount of investment devoted to improving a land parcel.

In line with Anderson's work, a number of other studies including D. Mills (1981a, 1981b, 1983) and Anderson (1986, 1993) conclude that property tax can alter the timing and capital intensity of development. However, Tideman (1982) offers an important grounding to the discussion. He clarifies that pure land value taxation is neutral with respects to timing of development. Tideman's research modeled land value related to current land use, not the highest and best use. If land value is determined in a way that is unrelated to current land use, neutrality with respects to timing of development holds true. This is because cost-benefit analysis shows that both traditional property tax and land value tax subtract the same from the present value of both the choice to develop now and the choice to postpone development, assuming highest and best use is used to determine taxable value.

Discrepancy over land value taxation's effect on timing of development in this case is the result of differing assumptions and frameworks. Anderson (1999) assumes a significant liquidity effect in his analysis, the result of increased costs associated with holding land whereas Tideman (1982) neglects this effect in his analysis in addition to focusing on the valuation process of land. As a result, different conclusions about land value taxation's effect on timing of development were reached.

Furthering the discussion of the impact of land value taxation on the timing of development, Arnott (2005) conducts research distinguishing between "residual land value," "post-development property value minus improvement value" and "raw land value," (the value of land without any structures on it or improvements to it). He found that a tax on the raw value of land, similar to its highest and best use, is neutral in regards to timing of development. A residual land value tax, he finds, is non-neutral in this

respect as it is related to current land use, as was also pointed out by Tideman (1982). Arnott also concludes that there is a trade-off here in attaining neutrality in timing of development. Post-development raw land value would be highly complex and difficult to determine, likely resulting in unfair and arbitrary assessments.

### **2.10.1.2 General Equilibrium Models**

General equilibrium models are more ambitious in terms of the scope of assumptions made by the researcher. As Anderson (2009) describes, models of this vein attempt to provide description of the equilibrium conditions in all markets at the same time. These markets include but are not limited to land, buildings and other improvements, labor and output. Such models are often made to replicate the initial conditions of an economy and then used to calculate changes that occur in the aftermath of an intervention.

(Grosskopf, 1981) uses Harberger's (1962) tax incidence framework to find that a tax regime change from traditional property tax to a split rate scheme would result in increased equilibrium land prices. This was significant in establishing land value taxation as a tax policy switch that could potentially pay for itself (Anderson, 2009). DiMasi (1987) developed a model of the City of Boston, Massachusetts, U.S.A and concluded that a switch to a land value tax policy would decrease land rents, increase improvements per acre, decrease housing prices, increase population density, reduce the area covered by urbanization, and increase wages.

More modern analysis in this aspect has been relatively scarce, although Nechyba (1998) and Haughwout (2004) tried to put up models. Nechyba examined the effects of an increase in land tax and a decrease in capital tax with his model, which was set up to

represent U. S. state and local governments. He concluded that this intervention would increase capital stock and decrease land values. Haughwout (2004) developed a model of the New York City economy, but removed the city's sales, income, property, and general corporate taxes while only retaining the tax on land at its current rate. This Henry Georgian study concluded that private output would increase, land values would increase, private capital stock would increase, and population would increase but the provision of public goods and per capita tax revenue would decrease by over 50%.

### **2.10.1.3 Regression Models**

Regression analysis offers quantitative approach to examining the effects of a switch to land value taxation. By using this method, impact of the policy intervention on key factors of interest, known as dependent variables, can be isolated by the researcher. At the same time, the research can control for a number of other factors, known as independent or control variables, which may also affect the dependent variable (Anderson, 2009) In this way, the research can quantitatively examine the significance of one variable in relation to another.

Studies by Mathis and Zech in 1982 and 1983 formed the groundwork for the regression analysis of land value taxation. In these papers, they studied the value of construction in 27 Pennsylvania cities, towns, and boroughs over the period 1976-1978. They computed two tax measures to make data in each municipality compatible and fit into single-equation models. These measures were the ratio of the city tax rate on land to the city tax rate on improvements in 1977 and the same land-to-improvements ratio but from the combined city and county tax rates. They concluded that neither tax measure had

significant impact on median or mean value of construction across the Pennsylvania municipalities (Mathis & Zech, 1982, 1983). Only three of the 27 Pennsylvania municipalities studied by Mathis and Zech had implemented land tax rates that exceeded improvement tax rates at the time. Thus, there was not much variation among the tax measures across municipalities, possibly accounting for the lack of significance (Anderson, 2009).

Bourassa (1990) was the first to use regression analysis to analyze the value of new residential building permits in the broader scope of the effects of land value taxation. To do this, he examined housing development in Pittsburgh, McKeesport, and New Castle, Pennsylvania. He tested for the hastening of development as a result of a higher land tax rate and for encouragement of further housing development as a result of lower relative tax rates on improvements. He found that land value taxation may have impacted residential housing permits in Pittsburgh, but not in McKeesport or New Castle.

Oates and Schwab (1997) explored new building activity in 15 cities in the multistate region of the Pittsburgh metropolitan area using time series data. Conducting before-and-after analysis, they conclude that after 1979-1980, the period when land-to-improvement tax ratios shifted in Pittsburgh, something dramatic happened to building activity in Pittsburgh compared to the other cities in the region. The increased building activity, and therefore increased value of building permits, was caused by both the change in tax regime and the occupancy rate, results indicated. Additionally, the effects attributable to the tax regime change are muddled by the influence of the property tax abatements associated with Pittsburgh's economic development program. Schwab would go on to write, "It appears that a land tax did not cause a building boom in Pittsburgh, but it did



allow the city government to avoid policies that might have undercut that boom” (Schwab & Harris, 1997 [as cited in Anderson, 2009]).

Pollakowski (1982) examined property transactions in Pittsburgh from 1977-1981(a period of great change in Pittsburgh’s property tax policies). They observed that from 1925 to 1978, Pittsburgh’s land-to-improvement tax ratio was 2:1. In 1979 it was increased to 4:1 and then increased to 5:1 in 1980. Pollakowski’s dependent variable in his study was the probability of a parcel being transacted. He found a positive and discernable effect of the land tax rate. Of the 6812 properties transacted in 1979, Pollakowski estimated that 60 were attributable to the land tax increase. Thus, though the effect of the change in land tax rate was discernible and significant, its overall magnitude was quite minimal.

Plassmann and Tideman (2000) furthered Pollakowski’s study by examining building permit data in Pennsylvania cities from 1980-1994 to determine the impact on building activity. Their dependent variable was defined as the number of building permits per person per month in each city. They then developed an independent variable which calculated the difference between the city’s tax rate on land and its rate on improvements then divided that difference by the average ratio of assessed value to sales value in the city. In this way, they would eliminate variation based on differences in assessment ratios across cities. They found that an increase in this differential equated to a significant increase in building permits.

Similarly but broader in research scope, Tideman and Johnson (1995) studied building permit data in Pennsylvania cities over the period 1980-1992 to determine if a shift of

taxes from improvements to land produced economic growth. However, they went on to find that available data are insufficient to identify any effect adequately.

#### **2.10.1.4 Comparison Approach**

After numerous other studies of his own, Cord (1987) used a comparison method to examine construction activity in Pennsylvania cities that shifted to split-rate taxes. In this study, Cord compared such cities to neighboring cities that continued to employ traditional property tax. While the study found that cities with the split rate tax experienced more construction activity, the method did not control for other factors that may have impacted building activity nor did it account for selection bias (Anderson, 2009).

#### **2.10.2 LVT Vs Property Taxation**

The basic criteria by which a tax is judged relative to another tax or hypothetical neutral tax are effects on the supply and allocation of resources, whether it is equitable, whether it is a good stabilizer, and whether it is costly from an administration point of view (Newell, 1977). Property (land and buildings) is a very definite sign of 'wealth', easy to value and therefore a legitimate target for taxation. As a source of investment, it represents one of a number of targets for funds and therefore its taxation is necessary for a balanced tax system (Muellbauer,2005; IAAO, 2010). Expenditure on public services by government usually leads to an increase in land values. For example, new motorways, rail systems, educational facilities (higher institutions) and health facilities lead to dramatic increases in land prices. These public services/community activities which often provide landowners with huge windfall gains are unearned by the landowner. By what is

called natural justice this land values belong to the whole community and not just a few landowners, so its proceeds would be recycled to the public purse, instead of creating greater and greater inequality. Thus LVT is a just and fair way of paying for public services by the landowners back to the community from which it has gained. Compared to taxes on buildings alone (property taxation), LVT provides a broad tax base because it would include all empty properties and empty sites.

In the majority of municipalities nationwide, property tax is a prominent direct source of public finance (England, 2007). Generally speaking, it combines a few attributes of property: land, improvements to land, and - in some cases - personal property but the only attribute which is subject to tax is improvement. This shortfall in the property tax scheme encourages land speculation and, in turn, allow for the persistence vacant lots and urban sprawls in urban cores. It also discourages property owners from improving their properties as it will increase the tax levied upon them. As a result, property owners are not always encouraged to generate the most utility out of their land. A reform to such an entrenched institution is LVT, where land value, if not the only element of real property taxed, is taxed more than improvement value (Dye & England, 2009). Within land value taxation, Land speculation is theoretically discouraged as property owner's face a sizable tax regardless of if they improve their property or not. Thus, landowners are encouraged to develop their land in a way that generates the most utility because their taxes are fixed to land value and do not increase based on improvements they make to the property. Again, when speculation is discouraged, the huge sums of money that investors have sink into property, on the expectation of increasing site values, could be redirected to wealth

creation. E.g. investments in property speculation would be diverted into real capital improvements.

The land value tax is also theoretically a more economically efficient tax scheme than property tax because demand for the taxable item is not reduced. For example, demand for construction services and materials are reduced when those improvements to land are taxed in a traditional property tax system. As a result, a switch from a traditional property tax to a land value tax should, theoretically, lead to reduced urban blight, increased wealth generation, and increased economic efficiency (Murphy (Jr) 2011).

Tax evasion is easy with property tax but difficult with LVT. Unlike income tax and business taxes every landowner would be required to register their land and to pay LVT on all their land holdings. Government can under LVT uphold that any site with no registered owner would be sold by auction for the benefit of the government.

Sites which are disadvantaged by a new development will be provided with automatic compensation. For example: with a new road, airport, most sites (especially those near facilities) benefit from big increases in land values but some sites (maybe housing close to the airport and suffering from its noise) would lose some value. These sites would pay a lower Land Value Tax, and automatic compensation (injurious affection) will be provided without any complicated appeals system.

Land values are an absolutely vast untapped source of revenue, which could gradually replace taxes on companies, trade and workers, i.e. the wealth creators. Nigeria have so much dwelt on proceeds from the oil sector and given the global fall in oil prices it may be imperative to divert our attention to other sources of revenue of which LVT is a very

viable potential. According to Emoh & Nwachukwu (2012), Nigeria can improve its revenue drive by exploring boundless opportunities that abound in the lands and housing sector, especially through land value taxation.

LVT is a ready tool for redistributing wealth especially for poor people who do not own valuable land. The benefits accruing from LVT can be summarized under these headings:

- It offers a tax base that cannot move or run away, unlike capital or labor;
- It encourages desired development;
- It imposes the greatest cost of holding undeveloped land where there is highest values in alternative uses;
- It captures as public revenue a part of the benefits accruing to landowners from investments in infrastructure and other amenities by the public sector.

Generally, a land value tax is an economic policy tool that can be used to support the objectives of sustainable development. It is important to the national, state and local government as well as community and city planners. This tool splits the standard property tax into its two components of land values and building values. The land part of the tax is increased and that on building or improvement decreased. The increased tax on land has a negative capitalization effect, resulting in land being priced closer to its true market value. The decreased tax on building improvements has a positive capitalization effect, similar to other property tax abatements. This increased holding costs on vacant or underused land and diminished or eliminated taxes on buildings, supports compact and

dense development, affordable housing, distinctive neighborhoods, and mixed use building, that is, overall sustainable development.

Change from a traditional property tax where land and improvements are taxed at an equal rate to a split rate tax produces some interesting effects. Oates and Schwab (2009) outline these effects in their article “The Simple Analytics of Land Value Taxation” in *Land Value Taxation: Theory, Evidence and Practice*.

Their discussion on the effects was based on tax incidence, neutrality, speculation, and land development patterns. In their opinion, a shift from traditional property tax to a split-rate tax in which a higher rate is placed on land value than improvement value produces many effects.

Unlike excise taxes on a particular commodity, the burden of a tax on land value falls directly on the producer upon whom it is levied and cannot be passed on to final demand. Tax on land is not passed on to the consumer and is borne entirely by the landowner.

Land taxation in its purest form is a “neutral tax” that generates revenue in an economically efficient way by not inducing deadweight loss. The land value tax is a neutral tax and reduces deadweight loss by avoiding economic distortions of higher prices for consumers and reduced supply.

A higher tax on land value does not, theoretically, distort economic decisions. Therefore, it does not affect speculation and timing of development. In addition, land value taxation should not, theoretically, induce sprawl land development patterns.

Lastly, while landowners with low land intensity stand to gain from a switch to land value taxation, landowners of high land intensity parcels do not universally stand to lose. Due to increased land rents as the result of gains in economic efficiency, property owners can stand to benefit regardless of land intensity. Depending on the scope of the policy's implementation, the increased land rents may make up for the higher tax on land.

In conclusion, the implementation of land value taxation should result in a more efficient economic system. It can help us to meet basic objectives: a healthy economy; social inclusion; equal opportunities; sustainability and a fairer society. It offers government the opportunity to offer a modern and fresh vision where all would share in our country's natural wealth.

### **2.11: Urban Land Value Taxation and Sustainable Land Use and Development**

As a result of continued increasing population, the consumption of the natural resources and the consequent generation of waste and pollution in the built environment, developed and developing countries are faced with rapid urbanization and consequent environmental, socio-cultural and economic issues that need to be addressed. The need to provide solutions to challenges faced by the developing and developed countries in areas such as land use and development brought about the concepts of sustainable development.

Sustainable development is conceived in different ways (Brandon and Lombardi, 2011; Edum-Fotwe and Price, 2009; Worika, 2002) and particularly in the context of: environmental issues (Bruntland, 1987); economic (Ding, 2008); social (Ding, 2008); and sustaining created assets benefits (Franks, 2006). This divergence depends on the interest

(Worika, 2002); the assessment and evaluation strategy for sustainability (Brandon and Lombardi, 2011); as well as cultural variation, ideological preference, and the development purpose (Worika, 2002). As a result, there are today over 300 definitions of sustainable development published which represent the products of diverse world views and competing vested interests in the field (De Vries and Peterson, 2008; Kelly and Moles, 2000).

Therefore, the challenge is to depict the meaning of sustainability in one's context and if the use of sustainability in urban land use and development differ from the goal of its general objectives.

The crucial point in all circumstance is what constitutes sustainable and unsustainable development. Boothroyd's (1991) indicated that it is sustainable development if it reduces the disparities between the poor and the rich. Rees (1998) in his study argued that it is largely a matter of subjective opinion and that which expresses public preference. However, the environmentalists, planners, surveyors and engineers argued that it is sustainable development when nature's ability to replenish is less challenged, while unsustainable development is when the nature's ability to replenish is more challenged.

Fundamentally, sustainable development tackles three major areas which ensure that: people living today are entitled to justice and equal rights; environmental degradation must be alleviated or eliminated; and future generations must not be impoverished as a result of current actions. Moles and Kelly (2000) opined that sustainable development is not only being in a state of harmony; rather it should involve a process of change in which the exploitation of resources, the orientation of technological development, and



institutional changes are made consistent with future as well as present needs. A broader concept of sustainable development known as the Brundtland Report was developed by the World Commission on Environment and Development (WCED 1987) by defining sustainable development as development which “meets the needs of the present without compromising the ability of future generations to meet their own needs”.

The main concept of sustainable development was adopted at the World Summit – the United Nations Conference on Environment and Development – in Rio de Janeiro in 1992. Principle 3 proclaims the concept of sustainable development: “the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations”.

Sustainable development was validated as the main, long-term ideology for social development. The concept of sustainable development rests on three components of equal value: environmental protection, economic development and social development. The Commission emphasized that addressing these problems requires global economic growth whilst recognizing ecological constraints. Abu Bakar *et. al.*, (2009) in adapting the commission definition of sustainability/sustainable development, opined that the commission not only considered that environmental problems needed to be addressed but also that the social and economic problems were equally significant to be tackled. For instance: inequality; property; non-prosperity; and the violation of human rights; are related to increasing population and the enormous expansion of environmental damage caused by human activities.

While the sustainability concept at first focused on environmental phenomenon, currently, it has gone beyond the boundaries of environmental issues to include a consideration of social, economic, political, and development issues (Brandon and Lombardi, 2011; Edum-Fotwe and Price, 2009; De Vries and Peterson, 2008).

Ding (2008) argued that sustainable development is a development concerned with attitudes and judgment to help ensure long-term ecological, social, and economic growth in society. According to Worika (2002) sustainability may mean adapting the ways we all live and work towards meeting the needs while minimizing the impacts of consumption, providing for people of today and not endangering the generations of tomorrow

From the views of these researchers, it is clear that while the concept of sustainable development from literature is well known and widely used, it is also evident that there is no common understanding and approach for it (Ihuah, 2015) but all the researchers' views on sustainable development revolve around the definition given by the WCED and adapted to their perceptions of the goal/objectives targeted to accomplish a particular endeavor. Hence, sustainability is seen as having its diverse implications in every corner of the world and in every sector of the economy (Bell and Morse, 2003). Lutzkendorf and Lorenz (2005) opines that sustainable development is '*a journey towards a destination: 'sustainability'*' and it is a '*triple-bottom line*' concept involving balancing economic and social development with environmental protection.

Whether or not "sustainability" is a fantasy, its underlying concepts and issues are important.

In Nigeria land use and development is known to continuously spread from the urban areas into the rural areas at the outskirts because of non-affordability of urban land. The rate at which land use and development encroach into rural land is subject to availability of urban land. The specific economic signs are urban sprawl, scattered development, development in urban fringes, slum creation etc. When urbanization is not properly steered, managed and sustained with fair distribution of public funding in social and basic infrastructures, social development and employment generation for broader-based well-being it becomes a great problem to the nation. Taxes can affect the density of cities and therefore the spread of an urban region. Taxes on land increase the carrying cost of under used land and encourage the development of more efficient city form by reducing the amount of discontinuous development (Skaburskis and Tomalty, 1997).

Land taxation policies have been used in some parts of the USA, Australia, Denmark, Syria, and Spain with the intention of stimulating development and increasing the intensity of urban land use (Lichfield and Darin-Drabkin 1980). The tilting of tax rates to place a greater burden on the land portion of real estate has also been used in Western Canada, New Zealand, South Africa and Jamaica to promote development and in Japan to reduce speculation, stabilize land prices, and improve the efficiency of land use ( Skaburskis And Tomalty, 1997). Land taxes in Korea were intended to penalise the owners of under used land and combat monopolistic land accumulation (Youngman and Malme 1994). Thus Lichfield and Darin-Drabkin (1980) describe the land value tax as “one of the oldest of the proposed remedies of the ills inherent in the urban land market”.

This study x-rayed the consequences taxing the land value component of landed properties has on land use and development. Consequences of moving from a general property tax to a land value tax in Anambra State were also assessed.

The basic assumption in land value taxation is that any land taxation system that tax buildings or improvements and not land value encourages unsustainable land use and development. The existing land taxes have not ensured that land is used sustainably, effectively and efficiently while encouraging development.

With land and property largely untaxed, this increases interest in land and being fixed in supply and location, this increased interest has the effect of making land more expensive. It is a known fact that land is a scarce resource, but being untaxed, creates an artificially increased demand which encourages speculation as a continuous process. The major inducement in land speculation is that the value of land generally increases year on year which induces landowners to withhold land from the market. It creates an incentive to hold on to land without improving or developing it because gains can be made simply by retaining possession. When land (and property) values are rising there is less incentive to sell or develop today (Henry George Foundation, 2002). This result to many derelicts, vacant and under used sites which is not confined to depressed areas but choice locations too. Evidence of this abounds in Nigeria's major cities.

Speculators action of withholding urban land presents a false scarcity of urban land makes it expensive to develop land. This requires developers to continually look for ways to keep costs to a minimum. The only way developers do this is to build on the outskirts of towns and cities where land is generally cheaper to buy, and cheaper to fit sites to

buildings than buildings to sites. This results to urban sprawl, that is; the continuing outward spread of towns and cities into the surrounding rural areas. The adverse consequences of this phenomenon is that many facilities and services become less and less convenient because of increased geographical space between dwellings and urban areas are less attractive.

The withholding of land from development and consequently making land and property more expensive to buy encourages unsustainable land use because they;

- discourage urban regeneration;
- encourage urban sprawl the continuing outward spread of towns and cities into the surrounding countries (with its associated disadvantages);
- increase the cost of housing by making it less affordable;
- increase the cost of development thereby acting as a deterrent to further development;
- make compulsory purchase and compensation more expensive

The question then is; what are the effects urban land value taxation (split rate tax) would have for sustainable development and land use?

First effect of the shift would be to **reduce the withholding of land** from improvement. If the tax applied to the publicly-created, land element of property value was on its highest and best use irrespective of its present (vacant or not) it would create an incentive for speculators to release land they have no immediate need for or put land to better use. This would apply most suitably to vacant and derelict land, unused and under-used buildings. It will discourage vacant and under-utilised land possession in prime locations for

speculative purposes by making it expensive, thereby encouraging compact urban development and better land use.

A second effect would be to *reduce speculation in land*. It would become less attractive to purchase land unless it is intended for better use. This would result to reduced demands and stabilization of land prices and consequently make housing more affordable.

There would be *environmental benefits* because urban regeneration would increase and lead to improved urban environments. The demand for sprawl would fall with a consequential reduction in the loss of rural land (which is mostly used for agriculture) .

In line with the above attributes and benefits, LVT is a unique form of taxation because it promises to;

1. Reduce price escalation, regulate and activate land markets;
2. Encourage access to land by making the price of land more affordable;
3. Return the value of government investment in amenities and infrastructure to government and community;
4. Encourage redistributive justice by imposing higher taxes on those who choose to own land in choice locations and using part of this revenue to finance government subsidized housing and services in less privileged areas;
5. Attain administrative goal that eschews simplicity and functionality, ease of assessment and valuation processes, that is, having a functioning and updated land cadastre, ownership, recordkeeping, revaluation, billing, collection, and a strategic focus on enforcement;

6. Encourage the use of captured unearned land values for the greater, public good;

Furthermore, LVT has been proven to have the effectiveness of achieving the following outcomes and objectives of a good taxation system:

***Equity and Fairness;*** in terms of equitable access to land, who pays, how much is paid and for what.

***Benefit principle*** – in terms of capturing unearned value; Designed that those who enjoy the benefits of accessibility to public infrastructure and amenities, pay more; captured unearned value increments are redistributed for pro-poor development.

***Spatial structuring*** –in terms of enhancing spatial efficiency and inclusivity (developments that is pro-poor and integration of different social groups /classes); Enabling ease of access to well-located land and associated opportunities.

***Gender Equity*** –in terms of ease of access to land by vulnerable and marginalized groups including women; Promote and enable access to land, housing, services and amenities for all classes of people.

Urbanization with the ongoing economic activities in cities is inevitable and generally desirable. Increasing economic density remains the objective for all areas at different stages (initial, intermediate and advanced) of urbanisation. It is essential that appropriate priorities for policies are set at different stages in urbanization, which will provide the essential elements of urbanization strategy that conforms to the reality of growth and development.

Land value taxation is a much needed policy which has worked and still works to achieve this objective. It is a tool that fundamentally facilitates the use of land in a way that enhances accessibility, optimizes land-use and curtails the use of land for speculative purposes (compaction, density, mixed-use, integration, use of vacant land); Promote intragenerational sustainability (equal access for all current social groups / classes) and inter-generational sustainability (equal accesses without compromising future generations), thus satisfying the objective sustainability.

For this research, the objective is to analyse land value taxation as a tool that can be used to sustain land use and development in Anambra State. This limits the work to analysis of land based taxes in Anambra State and suggesting reform that will ensure sustainable land use and development.

## **2.12 Summary of Reviewed Literature/ Gap in Literature**

This literature discussed taxation; its meaning, characteristics, principles and objectives. Origin and history of taxation were highlighted and property taxation could be seen to have existed in various forms even before the existence of monetary system. The literature exposes land based taxes like, Capital Gains tax, Withholding tax, Development tax which are operational in Nigeria as taxes that achieve mainly the revenue objective of a good tax, but other objectives like equity and fairness, regulatory, developmental etc. are not realized.

Proposals to tax land value more heavily than improvement values can find support in both historical and modern economist's views. The physiocrats who are the earliest economists supported the idea of a single tax on land by maintaining that any payment to



a factor over and above its supply price is a kind of surplus and should be taxed. Classical economists explored and proposed land valuation by opining that it is fair to tax ground rent as a means of taxing away surplus. Henry George who is known as the father of LVT argued for taxing economic rent alone with the exclusion of other taxes. A few economists like Richard T. Ely disagree with idea of LVT by opining that land taxes would force premature conversion.

Further into the review, the economics of land value taxation, principles of land value taxation, land value taxation modeling that support land taxation were discussed. It was seen that the major factor which lends land as factor for taxation is the fixity of its supply and the view that the income derived from the ownership of land is an unearned surplus which need to be taxed.

To highlight the non-fictitious nature of land value taxation which began with its 1849 adoption in New Zealand, countries (developed and developing) where it is practiced was discussed. It was established that developed countries like United States (up to 29 states practice LVT in the United States), Australia, and New Zealand are seen to have practiced and are still practicing LVT. In fact, more than 30 countries around the world have implemented land value taxation, so it is not a utopian proposal (Dye and England, 2010). Though LVT was practiced by South Africa and is practiced by developing countries like Jamaica and Kenya and the tax has remained largely untapped in developing countries.

The Land Use Charge practice in some states of Nigeria was seen to have some semblance with the proposed Land Value Taxation when viewed against the backdrop of

taxing land /land value or incorporating land as well as building as its tax base. This is in contrary with the property rate system that has building /improvement as its tax base.

Assessment challenges (which are topmost on the reasons why some countries and a few states in the United States have seen LVT as impracticable) were seen to exist. The researcher opine that the major constraint in the past is on how the value of an improved property can be separated into land and improvement, so as to justify an increased tax on land and reduced tax on improvement. Some countries that were practicing LVT were seen to have stopped due to initial assessment constraints e.g South Africa. This major problem, have been seen to be surmountable. The introduction of use of computers and mathematical formulas (CAMA) to establish a relationship between property characteristics and sale prices, brought a new dawn to LVT. More sophisticated and less expensive GIS technology offers the potential for full integration with CAMA for spatial analysis. It enables mathematical models to be developed for each geographic region or with similar characteristics.

There is indeed a strong theoretical support for LVT, in particular for reducing the tax on real estate improvements as a number of studies, and real world experience gives evidence that has been used to test the economic theory supporting the land value tax.

In contrast, this research contends that the benefit of LVT may have been tapped in developed countries but remains grossly untapped in developing countries. In some states in Nigeria like Anambra where Land Use Charge has taken over, there are no structures for sustainable land use and development but only strategies for increased

revenue. This implies that our land based taxes are not sustainable if they cannot achieve the listed objectives of taxation.

The review presents that sustainability in land use and development is very necessary to curb unsustainable practices like speculation, and urban sprawl.

The fact that land value and its variables impacts strongly on property value hence the need to tax it higher than building/improvement and that LVT is a redevelopment tool which can be used to sustain our land use and development is the gap this research has bridged. The key factors that support the need to increase tax on land value while reducing tax on building value are analysed to support the initiative by some state governments to initiate Land Use Charge laws and to aid them channel the policy towards achieving other objectives than revenue, thereby achieve sustainable land use and development.

## **CHAPTER THREE**

### **3.0. RESEARCH METHDOLOGY**

In this chapter, a detailed methodology that was used to achieve the stated aim and objectives were described. The research design, procedure for examining the postulated hypothesis, population of the study, sample size, method of data collection and analysis needed to achieve the objectives of the research were outlined.

#### **3.1 Research Design**

The research design that is most appropriate for this research is field survey design. Field survey relies mainly on the techniques of sampling a large number of subjects by interviewing and/or the use of questionnaires (Udoh, 2004).

The choice of this research method is rooted in the saying that “if we wish to know what people are thinking about certain things, we must ask them” (Bennett, 1983). It is on this premise that the choice of field survey design was made, also considering the fact that when constructed and tested adequately it can be used to project cause and effect relationships.

The study has six objectives. They are:

- Identify the principles and practice of land – based taxes in the study area.
- Develop a model that will partition property value into land value and building value.

- Derive models that can establish the contributions of individual explanatory variables to property values in the study area.
- To determine if statistical evidence support theoretical postulation on the relative importance of land value variables and building value variables in the property valuation model.
- To examine the consequence of taxation of urban land value for sustainable taxation and land use in the study area.

To achieve these objectives, qualitative and quantitative research methods were used to obtain measure and analyze data. Objective 1 was achieved using the qualitative and quantitative method. To examine the principles and practice of land based taxes in Anambra State, questionnaires were administered on Estate surveyors and Tax Assessors. Tax Assessors were interviewed to ascertain the practice of land use charge which has replaced property taxation. Their opinions were also sampled with some open ended questions in the questionnaire to elicit qualitative data. To this end respondents views on the principles and practice of land taxes, modification and reforms were sought. Estate Surveyors were entreated to give their views on property rate practice in Anambra State. They were prompted to express opinion about the Land Use Charge Law, its advantages and disadvantages. Other questions centered on acceptability of the basis of valuation stipulated by the Law. Questions on the appropriateness of the property rate tax burden, revenue adequacy, reform were posed to bring to light their views on property rate administration. A percentage of their responses to the questions were taken to measure the weight of their views.

Objectives 2, 3 and 4 were achieved using quantitative and qualitative method. The variables that determine land and building values were determined (based on literature and respondents' opinion), quantified and extrapolated in excel sheet to determine land, building and property values. The values were then run in statistical software Stata SE9 to derive models that can establish the significance and influence of explanatory variables to property values.

A qualitative approach was drawn from the model, literature and questionnaire to achieve objective 5. This was done by highlighting the significance of the variables in the model while comparing them with the current property taxation practice of taxing in Anambra State (APLUC). Also respondents were asked to give information on the methodology employed by APLUC office to arrive at values and the information was compared with literatures and models obtained from this work. Literature on sustainable taxation and land use were brought to fore, to see how they have played out in property taxation by APLUC.

### **3.2 Sources of Data Collection.**

The data was drawn from two sources, primary and secondary data.

#### **3.2.1 Primary Data**

Oral interviews and questionnaires were used to generate primary data for the study. The research questions is the base on which the questionnaire, that was used to elicit responses from respondents was constructed. Some primary data on the residential buildings in the study areas were obtained from Estate firms. Data were gathered from

self declaration and field data collection from Anambra State Property and Land Use Charge (APLUC).

Interviews (oral and telephone) were conducted to probe for further information especially from the Estate Surveyors and Valuers and Tax Officials.

### **3.2.2 Secondary Data**

Secondary data on residential buildings and land was collected from property registers of Anambra State Property and Land Use Charge (APLUC) in Anambra State and Anambra State Housing Development Corporation (ASHDC).

Textbooks, journals, periodicals, official publications, periodicals, gazettes, conference proceedings, Maps, etc were all used to generate secondary data.

### **3.3 Instruments for Data Collection**

Questionnaire and interview are the instruments used to collect data for this study. The questionnaires were self administered thereby ensuring that questions posed to the respondents were uniformly phrased. The interviews helped the researcher explain issues and terms which the respondents are not familiar with while giving them opportunity to express their views comprehensively. questions permitted respondents to give detailed answers in cases where only few options will not suffice The intention was to frame questions in the form of a questionnaire combined with personal interviews to clarify information by the respondents where required.

Three sets of questionnaires were prepared. First was for property owners (Appendix I), second for Estate Surveyors and Valuers (Appendix II), while the third was administered to Tax Assessors (Appendix III).

### **3.4 Population of Study**

Three groups made up the population of study. They consist of residential properties, firms of Estate Surveyors and Valuers, and Tax Officials in the study area, Onitsha and Awka of Anambra State. A total of four residential areas, two low density areas (G.R.A Onitsha and G.R.A Awka), and two high density areas (Fegge Onitsha and New Haven Awka) are the crop of the population of study.

In Onitsha, the total number of residential properties in G.R.A and Fegge is 941 and 2143 respectively. While in Awka the number of residential properties in Agu-Awka G.R.A and New-Era is 975 and 445 respectively. (Source: 2016 Anambra State Property and Land Use Charge Register ). Thus the total number of residential properties in these areas is 4504.

24 registered Estate Surveying and Valuation firms in Onitsha and Awka (NIESV secretariat Awka) and nine tax professionals in Anambra State Property and Land Use Charge office in Awka are also part of the population.

### **3.5 Determination of Sample Size**

The ever increasing need for a representative statistical sample in empirical research has created the demand for an effective method of determining sample size. To address the



existing gap, Krejcie & Morgan (1970) came up with a table for determining sample size for a given population for easy reference (Appendix IV)

Using the sample size determination table, the sample size for the residential properties is 351. Given that the population of Estate firms and Tax Assessors is few (24 and 9 respectively), they both formed part of the sample. Thus the sample size is 384 i.e 351 property owners, twenty-four Estate Surveyors and nine Tax Assessors.

From the sample size of 351, sample size for each neighborhood was estimated using Bowley's Proportional Allocation Technique (Pandey & Verma, 2008). In stratified sampling the sample size for proportional allocation is given by  $n_i = nN_i/N$

Where,  $n_i$  = number of unit allocated to each sub-group in this case, sample size of each neighborhood

$n$  = Individual population of residential properties in the each neighborhood.

$N_i$  = Total sample size

$N$  = Total population of residential properties in the neighborhoods

For G.R.A Onitsha;

$n = 941, N_i = 351, N = 4504$ ;

thus  $n_i = 941 \times \frac{351}{4504}$ ;  $n_i = 73$ . The same technique is used to derive the sample size of residential properties in the other neighborhoods as shown in Table 2

**Table 2: Sample size for residential Neighborhoods in the study area**

<b>Neighborhood</b>	<b>No of Residential Properties</b>
G.R.A Onitsha	73
G.R.A Agu- Awka	76
Fegge Onitsha	167
New-Era Awka	35
Total	351

### **3.6 Validity and Reliability Tests**

Validity is the extent to which an instrument measures what it ought to measure and performs as it should. There are many kinds of validity test and they generally involve pilot testing. Piloting is the term for testing a data collection instrument on typical respondents before the main study is conducted (Simmons, 2006). It evaluates each question in the designed instrument before the final administration. This procedure is important for any data collection instrument because it evaluates how respondents interpret the questions and if the range of response alternatives is sufficient Content Validity test was used in this study to determine if the measurement truly reflects the concept being studied.

Reliability refers to consistency and ability to obtain the same answer each time a measure is used. If findings from research are replicated consistently they are reliable ( McLeod, 2007) .

Nigeria's land based taxation was x-rayed to ascertain their underlying philosophies towards achieving sustainable land use and development. A pilot test was used to determine the reliability and validity of the questionnaire.

For face and content validity of the instrument (content-related evidence), senior academics, Estate Surveyors and other experts on the topic were consulted to determine the appropriateness of the items of the instrument. This was to find out if the instrument covered the breadth of the content area and ascertain if the format used in designing it is appropriate for obtaining the required information.

Parallel -forms reliability was used in this study. A large set of questions that address the same construct was randomly divided into two sets. Both instruments were administered to the same sample of people. The correlation between the two parallel forms was used as the estimate of reliability.

Pilot studies were carried out on Nnamdi Azikiwe University community, G.R.A and Fegge Onitsha. During the pilot study, some specialized aspects and items that were discovered to be unnecessary and wrongly worded questions were consequently re-worded, reconstructed, or removed. The pilot test actually revealed possible difficulty that the researcher would have encountered during actual data and information collection exercise thus precautionary measures were put in place.

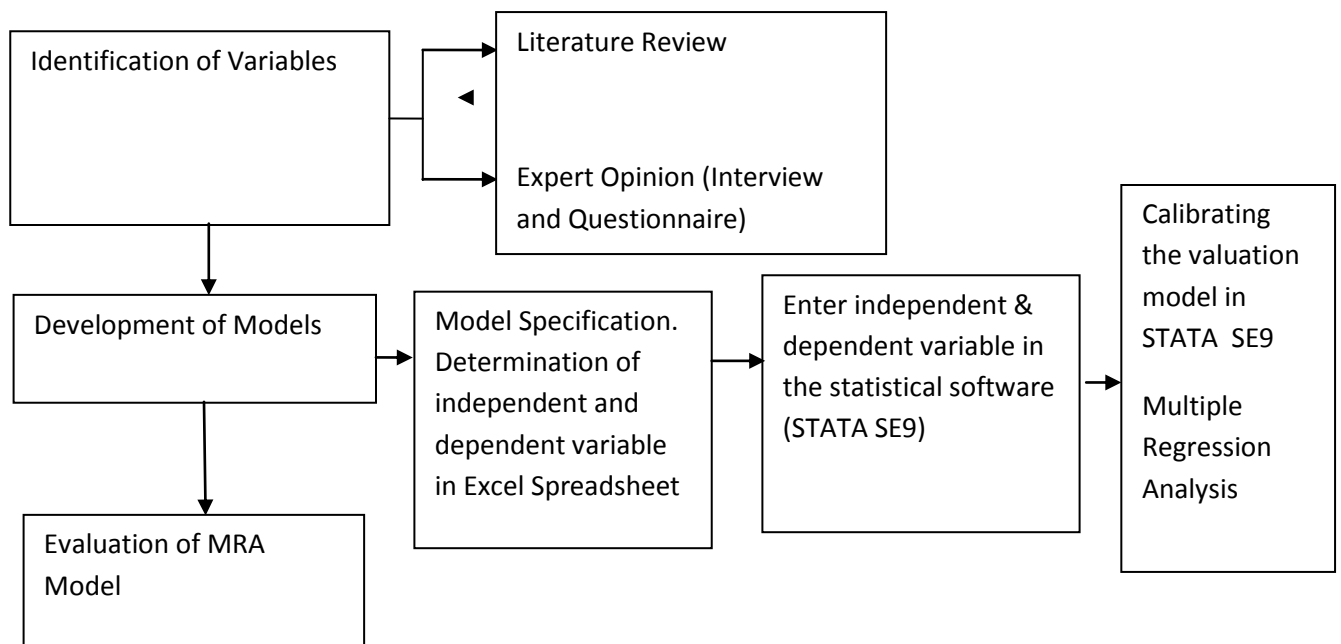
### **3.7 Method of Data Presentation and Analysis**

Information obtained from Estate firms, Tax Assessors and Landlords (from the questionnaires) were presented using tables (frequency distribution table) and diagrams

(histograms and bar charts). In analyzing the data, a number of processes were followed, which are identification of variables, development of a basic regression model and a hybrid multiple regression analysis models, and evaluation of the models. The techniques and application are explained in the next subsections.

### 3.7.1 Approach to Analysis

The approach to analysis is highlighted in figure 13:



**Figure 12: Process for Model Analysis**

#### 3.7.1.1 Identification of Variables

Two avenues were explored in the collection of data at this stage. Firstly, variables were identified using past literatures. Then a given number of variables were listed in the questionnaire to sample respondents opinion. The variables for land are;

- (i) Location factor
- (ii) Land Area
- (iii) Price per plot in the neighborhood ( PPIN)

Variables for building are;

- (i) Finished Area
- (ii) Building condition
- (iii) Age of property
- (iv) Property Type
- (v) No. of Floors
- (vi) Nature of Development
- (vii) Floor Finish
- (viii) Land Use Density
- (ix) Type of Finishing
- (x) Construction Cost

### **3.7.1.2 Ranking of variables**

Data on sample properties were collected from the following sources:

- (1) Anambra State Housing Development Corporation (ASHDC), Awka.
- (2) Anambra Property and land Use Charge Office, Awka.
- (3) Professional Estate Surveyors and Valuers and Practicing Estate Surveying and Valuation Firms

Some of the variables which are qualitative in nature (e.g floor finish, nature of development etc) were ranked to obtain a quantitative data thus:

**Table 3: Ranking of Variables**

<b>VARIABLES</b>	<b>RANKING CRITERIA</b>	<b>RANK</b>
<b>1. Building Condition</b>	<b>Condition</b>	
	Very good	5
	Good	4
	Fair	3
	Poor	2
	Very Poor	1
<b>2. Property Type</b>	<b>Type</b>	
	Detached family house/Semi detached family house	8
	Bungalow	7
	1 storey	6
	2 storey	5
	3 storey	4
	4 storey	3
	5 storey	2
	Tenement	1
<b>3. Nature of Development</b>	<b>Condition</b>	
	Improved	3
	Not fully improved	2
	Not improved	1
<b>4. Finishing</b>	<b>Type of Finish</b>	
	Marble	7
	Brick/Stone	6
	Marble & Paint	5
	Texcote	4
	Modern Paint	3
	Emulsion Paint	2
	Sandcrete	1

<b>5. Floor Finish</b>	<b>Type Of Finish</b>	
	Marble	6
	Ceramic tiles	5
	Terrazzo	4
	PVC tiles	3
	Cement screed	2
	Reinforced concrete	1
<b>6. Location Factor</b>	<b>Density</b>	<b>Grade</b>
	Low	1
	Medium	0.8
	High	0.7

### 3.7.1.3 Development of Models

#### Regression Analysis

After ranking, variables of sample properties were ran and transformed in an excel sheet to obtain land, building and property value.

To obtain land value a linearised plot value of each property was worked out. The plot linearised value is multiplied with the price per plot in the neighborhood and the location factor to arrive at the land value thus;

$$\text{Land Value} = \text{Plot LV} * \text{PPIN} \dots \dots \text{equation 1}$$

LA represents Land Area; Loc. Fac is Location Factor; Plot LV is Plot Linearised Value (Land Area/Standard Plot Size in the Neighborhood); PPIN- Price of Property in the Neighborhood.

For building values, variables like floor finishes, property type, building condition, nature of development, were quantified. Their values with the other values of the variables helped obtain a quality class (in an excel spreadsheet). The quality class is the multiplying factor that was applied on the cost of construction to obtain the building value thus;

$$\text{Quality Class (QC)} = \text{Typ. of Fin.} * \text{Bld. con.} * \text{Age} * \text{nat. of Dev.} * \text{No. of Flrs} * \text{Ppty. Typ.} * \text{Flr. Fin} \dots \dots \text{equation 2}$$

Where Typ. of Fin - Type of finish; Bld. Con - Building Condition; Nat. of Dev - Nature of Development; No. of Flrs- Number of Floors; Ppty. Typ- Property Type; Flr. Fin- Floor Finish.

Building Value =

$$\text{Fin lvgArea.} * \text{Loc. Fac} * \text{Sqrt Fin. lvg. area} * \text{QC} * \text{Cost of Cons} \dots \dots \dots \text{equation 3}$$

Fin lvg. area represents Finished living area; Cost of Cons. is Cost of Construction; loc.fac is location factor; sqrt fin.lvg area is Square root of finished living area

This gives a basic property value model of structure:

$$\text{Property Value} = \text{Land Value} + \text{Building Value} \dots \dots \dots \text{equation 4}$$

$$\text{Land Value} = \text{Property Value} - \text{Building Value} \dots \dots \dots \text{equation 5}$$



$$\begin{aligned}
\text{Land Value} = & \text{Property Value} - \text{No. of Flrs} * \% \text{Typ. of Fin.} * \% \text{Bld. con.} * \text{Age LV} \\
& * \% \text{nat. of Dev.} * \% \text{Ppty. Typ.} * \% \text{Flr. Fin} * \text{Fin. lvg area} * \text{Loc. Fac} \\
& * \text{SQRT fin. lvg area}
\end{aligned}$$

The excel spreadsheet for land and building values of the sample properties is attached in Appendix V.

Twenty land, building and property values were taken from the two low density and two high density areas, giving a total of eighty land, building and property values. Medium density properties were excluded because it was noticed that there is a very slight margin between the property values in the medium density areas and high density areas thus will not give room for better representation. These values were run in Stata SE9 statistical software. Three non-linear/hybrid models that can accommodate both multiplicative and additive terms of land and building value were formed. These models took the form of regression equation with dummy regressors as suggested by Gujarati 0. (2009).The models are presented as follows:

### **Model 1: Land Value Model**

To show the determinants of land value, a model is specified with land value as dependent variable and the variables that are potential determinants are specified as explanatory variables. This is shown in equation 1 below.

$$\begin{aligned}
\text{LogLV} = & \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{Dumloc} + \alpha_3 \text{Dumdens} + \alpha_4 \text{Dumlocdens} \\
& + \mu \dots \text{equation 5}
\end{aligned}$$

Where Log LV represents log of Land Value (the dependent variable),  $\alpha_0$  is the constant, while  $\alpha_1$  to  $\alpha_4$  represent the coefficient of the independent variables. The independent variables in the model are size (size of land), Dumloc (dummy for location), Dumdens (dummy for density), Dumlocdens (interactive dummy for location and density).  $\mu$  is the stochastic error term. For the location dummy, Awka is specified as the base category. That is to say that Awka is denoted as 1 in the data set while Onitsha is denoted as 0. In the dataset for density, the low density area is used as the base category. This means that the low density area is denoted as 1 while the high density area is denoted as 0. In both Awka and Onitsha, GRA is the low density area.

**Model 2: Building Value Model**

This second equation was used to estimate the determinants of building value.

$$\text{LogBV} = \beta_0 + \beta_1 \text{Fin} + \beta_2 \text{Con} + \beta_3 \text{Age} + \beta_4 \text{Nat} + \beta_5 \text{Floor} + \beta_6 \text{Storey} + \beta_7 \text{Type} + \beta_8 \text{La} + \beta_9 \text{LogSize} + \beta_{10} \text{Dumdens} + \varepsilon \quad \dots \dots \dots \text{equation 6}$$

Where Log BV represents building value,  $\beta_0$  is the constant term, while  $\beta_1$  to  $\beta_{10}$  represents the coefficient of the independent variables. The independent variables in the model are fin (external house finishing), con (condition of building), age (age of the building), nature (nature of development), floor (the type of floor finishing-i.e. tile, etc.), storey (number of storey in the building), type (type of building-eg bungalow, duplex, etc.), La (living area i.e area occupied by the building), Log of size, Dumdens (dummy for density). Just like in the first model, low density is the base category, denoted as 1 in the data set while high density is denoted as 0. The dummy of location and density are the same as of equation 1 across all equations if specified in the model.

### **Model 3: Property Value Model**

The third equation was used to estimate the determinant of property value

$$\text{LogPV} = \gamma_0 + \gamma_1 \text{Con} + \gamma_2 \text{Age} + \gamma_3 \text{Nature} + \gamma_4 \text{Floor} + \gamma_5 \text{Lasize} + \gamma_6 \text{Logsize} + \gamma_7 \text{Dumdens} + \pi \dots \dots \dots \text{equation 7}$$

Log PV is log of property value, Lasize is the living area size ratio. Every other variable are as explained in equation 5 and equation 6. The constant term is denoted in the model as  $\gamma_0$ , while  $\gamma_1$  to  $\gamma_6$  are the coefficient of the independent variables.  $\pi$  is the stochastic error term.

With the development of the model the significance of the variables to the land, building or property values were brought to fore. Most importantly the result of the model analysis was kept side by side the literature on land value taxation to evaluate the contribution of land variables and building variables to property values hence the need to tax land value or not.

#### **3.7.1.4 Evaluation of Model**

Model Testing: Some performance measures (statistics) were used to evaluate the model after calibration and specification. This is done to know:

- How good the model result is;
- If the model is reasonable and rational.

The model was tested with various parameters like:

### **Coefficients**

The coefficients define the size of each independent variable and give the magnitude of the effect the variable is having on the dependent variable. The sign on the coefficient (positive or negative) gives the direction of the effect. In multiple regression analysis like this, with multiple independent variables, the coefficient tells how much the dependent variable is expected to increase when the independent variable increases by one, holding all the other independent variables constant.

### **T-Statistics**

This was used to verify whether there is a significant influence of each of the variables on the land or building values even when the coefficients indicates a positive or negative relationship. When  $t$  is large, one can be confident that the variable is significant in the prediction of value, conversely when  $t$  is small, it cannot be said that the variable is not related to value or is unimportant in explaining value because  $t$  values measure marginal contribution of a variable in predicting values when all other variables are held constant. As a result some variables duplicate or interfere with other variables information and even when they may be highly correlated with value they are insignificant predictors as indicated by their  $t$ -values.

Again, some variables can predict values in combination of other variables but individually they may not be correlated with value (land and building).

Generally, provided that sample size is large a  $t$ -statistic in excess of  $\pm 2$  indicates that one can be 95% confident and that the variable is significant in predicting value.

Results of the nonlinear models were finally tested on the combined value-Estimated market value and separately on the building and land value

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS

This Chapter presents and analyses data collected from questionnaires administered to property owners, Estate Surveyors and Valuers and Tax Assessors. The chapter is divided into two sections which are; presentation of data which includes analysing the questionnaire and core questions in the questionnaire. The second section entails analysis and interpretation of results vis-a-vis the expectant theories.

#### 4.1 Preliminary Survey Details

##### 4.1.1 Questionnaire Administration

Three sets of questionnaires were administered to Property Owners, Estate Surveyors and Tax Assessors. The rate of response from the respondents are given in Table 4

**Table 4: Response rate by Respondents**

S/N	Respondents	No of Questionnaires Administered	No of Questionnaires Returned	Response Rate (%)
1	Property Owners	351	315	89
2	Estate Surveyors and Valuers	24	22	92
3	Tax Assessors	9	9	100
	Total	384	346	90

Out of 351 questionnaires administered to property owners to elicit their views on land value taxation, 315 (representing 89%) were returned. On the part of Estate Surveyors, 22 (representing 92%) out of 24 questionnaires that were administered were returned. 9 questionnaires were administered to Tax Assessors and all were returned. Totally, a response rate of 90% was achieved from the respondents. This rate became possible because the questionnaires which were administered by the researcher were backed up with interviews.

From Table 4, it can be deduced that the response rate of the respondent- Estate Surveyors and tax Assessors was highly encouraging with ninety-two percent and hundred percent success achieved respectively. The Estate Surveyors and especially the Tax Assessors were very keen to give their opinions and concerns on urban land value taxation, land use charge and property taxation in general.

Table 5 shows the number of questionnaires distributed to property owners according to proportion and the corresponding returned questionnaires.

**Table 5: Analysis of Distributed and Returned Questionnaires**

PROPERTY TYPE	FREQUENCY OF QUESTIONNAIRES DISTRIBUTED AND RETURNED							
	G.R.A Onitsha		G.R.A Agu-Awka		Fegge		New-Era	
	NO. Distributed	NO. Returned	NO. Distributed	NO. Returned	NO. Distributed	NO. Returned	NO. Distributed	NO. Returned
<b>Detached/ Semi detached family house</b>	48	41	50	43	-	-	-	-
<b>Bungalow</b>	25	24	26	26	-	-	-	-
<b>1 storey</b>	-	-	-	-	19	16	4	3
<b>2 storey</b>	-	-	-	-	36	31	7	7
<b>3 storey</b>	-	-	-	-	65	56	14	12
<b>4 storey</b>	-	-	-	-	24	26	6	5
<b>5 storey</b>	-	-	-	-	18	17	3	3
<b>Tenement</b>	-	-	-	-	5	4	1	1
<b>TOTAL</b>	73	65	76	69	167	150	35	31

In respect to property type, the frequencies and percentage frequencies are given in Table

**Table 6: Property Types in the Area of Study**

S/N	Property Type	Frequency (Neighborhoods)				Total Frequency	Percentage
		G.R.A Onitsha	G.R.A Agu-Awka	Fegge Onitsha	New-Era Awka		
1	Detached/Semi detached family house	41	43	-	-	84	26.7
2	Bungalow	24	26	-	-	50	15.9
3	1 storey	-	-	16	3	19	6
4	2 storey	-	-	31	7	38	12.1
5	3 storey	-	-	56	12	68	21.6
6	4 storey	-	-	26	5	31	9.8
7	5 storey	-	-	17	3	20	6
8	Tenement	-	-	4	1	5	1.6
	Total	65	69	150	31	315	100

Table 6 shows the distribution of property types in the study areas. Detached/ Semi detached family house and 3 storey buildings are seen to predominate (with 26.7% and 21.6% respectively) in the study areas. Tenement property type is gradually fading from the area as only 5 tenement buildings (representing 4% of the distribution) are part of the study.

#### **4.2 Analysis of Land Based Taxes in Anambra State, Nigeria**

This sub section presents the analyzed results and discussions on the study carried out to examine the principles and practice of land – based taxes in Nigeria. It also looks at the adequacy or otherwise of Nigeria’s contemporary system of land-based taxation. This



addresses the first and second research objectives which are the basic steps in the development of sustainable urban land value taxation.

The analysed data were collected using questionnaire. The main sub-objectives of this sub section are:

- To determine respondents' familiarity with the Land related tax system;
- To seek their opinion on our land based taxation vis-à-vis the principles and objectives of taxation ;
- To ascertain if they advocate for reform of some or all of the land based taxation.

Tables were used to show the questions asked to investigate them, their frequencies and ranking.

#### **4.2.1 Analysis of Property Owners View on Principles and Objectives of Land-based Taxation in Anambra State, Nigeria.**

Property owners were furnished with questions on land related tax system in Anambra state. Table 7 shows the distribution of their responses.

**Table 7: Percentage Distribution of Property Owners views on principles and practise of land-based taxes**

S/N	Research Objective	Question	Options	Percentage Distribution
1	Examine the principles and practise of land – based taxes in the study area.	Are you familiar with Nigerian Land related tax system?	Yes No	303 (96.2%) 12 (3.8%) <b>Total 315 (100%)</b>
		Which of the under listed tax systems do you pay?	A Capital Gains tax B Value Added Tax C Personal Income Tax D Land Use Charge (APLUC) E Company Income Tax F Property Tax G Capital Transfer Tax H Tenement Rates I Land rate etc J Withholding Tax	17 (1.9 %) 302(33%) 167 (18.5%) 296 (32.8%) 47 (5.2%) 0 (0%) 47 (5.2%) 9 (0.9%) 0 (0%) 26 (2.9%) <b>Total 902(100%)</b>
		In your opinion what is/are the main objectives of land related tax systems in Nigeria	A Revenue B Equity and Fairness C Redistribution of Asset D Discourage Speculation E Land use control F Provision of Public amenities/service G Management of Urban Density and Expansion	315(98.5%) 0(0%) 0(0%) 0(0%) 0(0%) 5(1.4%) 0(0%)
		With the knowledge that a	(a) Very Good (b) Good	5 (1.5) 38 (12.1)

		good tax system ought to imbibe all or a great percentage of the above listed objectives, how will you rate the Land based Taxes?	(c) Poor (d) Very poor (e) Undecided	243 (77.1) 16(5.1) 13 (4.1)
		Do you or anyone you know pay any tax on vacant land?	(a)Yes (b) No (a) I do not know	0(0%) 298 (97%) 17 (3%)
		Which of these do you think is/are remedy/ies to our land related tax system?	(a)Reduction of tax rates (b) Increase of tax rates (c)Introduction of new taxes (d)Increase of tax base/s (e)Elimination of some taxes	295 (93.5%) 0 (0%) 12 219 (69.5) 315 (100%)

From Table 7 it is deduced that 303(96.2%) of property owners are knowledgeable about land related tax systems. 296(37.4%) pay Land Use Charge, while property tax and land rate taxes have a distribution of 0 (0%) because they have been incorporated into

APLUC. The various taxation objectives were enlisted and the respondents were required to give their opinion to what is obtainable in the State. A greater percentage of property owners (98.5%) opine that land based taxation is solely for revenue purpose. 243 (77.1%) respondents rates land based taxes as poor indicating that they do not believe that revenue alone should be the sole objective of land based taxation. 298(97%) respondents stated that they or people they know do not pay tax on vacant land. They also affirmed the need for land based taxes reform in Nigeria which will gear towards eliminating some taxes 315(100%), reduction of tax rates 295 (93.5%) and increase of tax base(s) 219(69.5%).

In establishing opinions concerning land value, building value and land value tax, the researcher assigned 5, 4, 3, 2 and 1 to "Strongly agree", "Agree", "Undecided", "Disagree" and "Strongly Disagree" respectively to guide the respondents. Table 8 shows the details of respondents' opinions on the posed questions.

**Table 8: Property Owners Opinion on Land Value and Building Value**

Research Objective	S/N	Question/ Statement	RESPONSE					Weighted mean
			Strongly Agree (5)	Agree (4)	Undecided	Disagree (2)	Strongly Disagree (1)	
Examine the principles and objectives of land – based taxes in the study area.	1	The principal components of a property are land and buildings	309	6	0	0	0	4.98
	2	Land value of a property which a land owner enjoys is not due to the owner’s efforts but a result of infrastructure provided by government with public funds.	88	188	21	14	4	4.09
	3	Building Values are strictly based on owner’s efforts	265	40	9	1	0	4.81
	4	A well maintained building attracts more tax	231	72	7	5	0	4.65
	5	A good tax system should be able to redistribute wealth (land value) while promoting equity, fairness and economic growth.	127	172	16	0	0	4.35
	8	Land in its unimproved state and as a component of a property should be taxed in property rating.	32	142	50	61	30	3.27

Table 8 shows property owners’ view on the land value and building value. Respondents agree that principal components of a property are land and buildings (4.98). The increased land values which an owner enjoys are not due to his efforts but that of government as supported by public funds (4.09), while building value is a result of owner’s efforts (4.81). Thus a good tax system should seek to redistribute this wealth created by all (4.35). For a land based tax to be progressive, equity and fairness should be

emphasized as the major objective (4.18) and not just revenue as seen in our present day taxation (4.85). On the issue of taxing land in its unimproved state and a component of property, respondents indicated that they are not fully in support of taxing land (3.27). The reason is most likely because they are all property owners and are probably of the view that taxing land will increase their tax base and possibly amount to pay as tax.

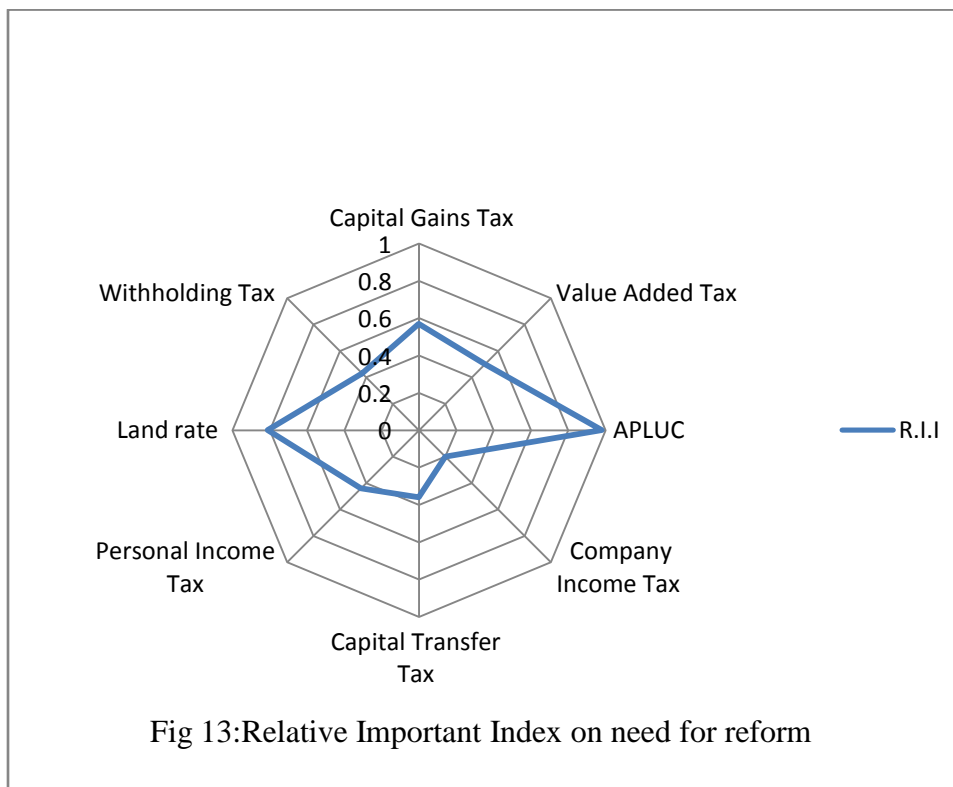
To further achieve the objective, property owners were given opportunity to rank the land based taxes in order of need for reform or modification. Relative importance index (RII) analysis was carried out by reducing the data to index numbers. Index number in this regard means division by a general measure of variate level. Details of their opinions in respect of ranking of the taxes for reform are shown in Table 9

**Table 9: Property Owners Ranking of Taxes in Order of need for Reform**

S/N	Taxes	1	2	3	4	5	6	7	8	R.I.I	Rank
1	Capital Gains Tax	0	108	37	76	0	0	59	35	0.57	3 <sup>rd</sup>
2	Value Added Tax	0	0	0	40	225	0	40	10	0.50	4 <sup>th</sup>
3	Land Use Charge (APLUC)	298	12	0	5	0	0	0	0	0.98	1 <sup>st</sup>
4	Company Income Tax	0	0	0	0	22	78	13	157	0.20	8 <sup>th</sup>
5	Capital Transfer Tax	0	15	168	0	40	0	53	38	0.36	7 <sup>th</sup>
6	Personal Income Tax	0	0	14	75	0	196	30	0	0.44	5 <sup>th</sup>
7	Land rate (development levy, ground rent, and premium)	17	180	75	15	28	0	0	0	0.81	2 <sup>nd</sup>
8	Withholding Tax	0	0	21	104	0	41	120	75	0.43	6 <sup>th</sup>

**Key:** RII – Relative Importance Index

In Table 9, the first row indicates numbering from 1 to 8 so as to guide property owners in carrying out the ranking. 1 represented the best, 2 second best and so on to 8 which represent the least in the ranking. The numbers in each cell below the first row are the number of respondents that ranked each tax according to their opinions of need for reform of each tax. From Table 9 and figure 13, respondents' opinions were interpreted using relative importance index analysis.



APLUC has a relative important index of 0.98 which gives it first ranking as the tax that mostly needs reform. Table 9 and figure 13 show how the respondents ranked the rest of the taxes.

#### 4.2.1.1 Estate Surveyors and Tax Assessors View on Land Value and Tax Burden

As a follow up on the first objective of study, Estate Surveyors and Tax Assessors in the study area were asked varieties of questions which covered factors that affect land value, property tax reform and taxation of land and improvement. This was with a view to establishing opinions on the current system of land based taxation when weighed against the received benefits and tax paid. The figures provided were analyzed and ranked values are as shown in this subsection.

To get their opinion on factors that make land value appreciate, the respondents were required to rank list of factors (in the questionnaire). Details of their ranking are as presented in Table 10

**Table 10: Estate Surveyors and Tax Assessors Ranking of the Factors that make Land Value Appreciate**

Research Objective	Factors	1	2	3	4	5	6	R.I.I	Rank
Examine the principles and Objectives of land – based taxes in the study area.	Accessibility to place of work, market, church etc.	0	20	7	4	0	0	0.74	2 <sup>nd</sup>
	Provision of Infrastructural facilities (electricity, roads, pipe borne water etc)	31	0	0	0	0	0	1.00	1 <sup>st</sup>
	Environmental quality{ view (water front, lakeside etc) topography)	0	8	17	4	2	0	0.65	3 <sup>rd</sup>
	Private development	0	1	7	16	8	0	0.52	4 <sup>th</sup>
	Government land charges/fees	0	4	0	5	17	5	0.39	5 <sup>th</sup>
	Land title	0	0	0	3	4	26	0.23	6 <sup>th</sup>

**Key:** RII – Relative Importance Index



In table 10, respondents opinion were ranked from 1<sup>st</sup> (highest rank) to 6<sup>th</sup> (least rank) using R.I.I. Respondents rated provision of infrastructure (1.00) as having the most influence on land value. The other factors which were adjudged by respondents to have a reasonable influence on land value are accessibility to place of work (0.74) and environmental quality (0.65). This highlights the fact that the benefit (increased land value) which land owners enjoys are not based on their private efforts but public efforts thus emphasizing the need to tax land. This further reiterates that the land based taxation is not adequate not tasking land works against one of the objectives of taxation-**Benefit Principle**- that tax obligations should consider fairness based on benefits receivable from the enjoyment of public services.

The opinions of Estate Surveyors and Tax Assessors were sought on the likelihood of their supporting land and building to be taxed under property taxation. Their response is as shown in table 11

**Table 11: Estate Surveyors and Tax Assessors Opinion on Incorporating Land and Building as Tax Burden**

Question	Options	Frequency (based on profession)		% frequency	
		Estate Surveyors	Tax Assessors	Estate Surveyors	Tax Assessors
Will you likely recommend land and building as tax burden for property rating?	(a) Yes	7	8	32	89
		(b) No	15	1	68
	Total	22	9	100	100

From table 4.7 a greater percentage of Estate Surveyors 15 (68%) will not recommend land and building as tax burden while 7 (32%) agreed to the notion of incorporating both values as tax burden for property taxation. Tax Assessors on their own part differed in their opinion. 8 (89%) agreed to the fact that land and building as tax burden is a good idea while only 1(11%) will not recommend land and building as tax burden. This is probably because tax assessors in APLUC are currently taxing land in their assessment of properties for land use charge.

#### **4.2.1.2 Estate Surveyors and Tax Assessors Knowledge about Land Value Taxation**

To dig further into the principles and objectives of APLUC as regards taxing land and buildings, more questions were presented to the professional respondents. Questions were asked to ascertain their knowledge about land value taxation practice. Their answers are presented in this subsection.

The subject of land value taxation was introduced by asking the respondents some basic questions.

**Table 12: Estate Surveyors and Tax Assessors knowledge of Land Value Taxation**

Research Objective	Question	Options	Frequency		% Frequency
Examine the principles and objectives of land – based taxes in the study area	Have you heard about land value taxation?	(a) Yes	7		23
		(b) No	24		77
			Total	31	100
	What do you think best describes land value taxation?	(a)Tax on income from land and land resources	6		19.4
		(b)Tax on land and Improvement value	5		16.1
		(c)Tax on land value only	20		64.5
		(d) Tax on improvement only	0		0
			Total	31	100

From the responses given by the respondents, 24 (77%) of the respondents are not familiar with land value taxation. Further enquiries reveals that 26 (83.9) have wrong notion of what land value taxation is all about. Breaking the percentage further down it is seen that 20 (64.5%) respondents thinks land value taxation is tax on land only and 6(19.4) respondents believes it is tax on income from land and land resources. Only 5 (16.1%) respondents know what is entailed in land value taxation. The implication is that even tax assessors working in APLUC are not knowledgeable about land value taxation even when they are taxing both land and improvement.

**4.2.1.3 Tax assessor’s response on land use charge (Property Taxation) in the state.**

To x-ray taxation practices in APLUC so as to further determine objective one a different questionnaire was administered on Tax Assessors for information in respect of taxation of

improved and vacant land and relevance of land values in the overall property value. This is with a view of weighing the current practice against the principles of taxation. Tax assessors were also interviewed when there was need for further clarification. Their responses to the questions in the questionnaire are contained in Table 13.

**Table 13: Tax Assessors Response on Taxation of Improved and Vacant Land and guidelines for taxation.**

Research Objective	Question	Options	Frequency	%
Examine the principles and objectives of land – based taxes in the study area	Are land values included in the assessment of properties for taxation by your agency	Yes	9	100
		No	0	0
	Does your agency tax land value of improved and vacant property?	Yes	9	100
		No	0	0
	Are there rules or guidelines pertaining to the requirement for separate valuation of land and improvements?	Yes	0	0
		No	9	100
	Is there a technique/s, which the agency uses to determine (a) land values and/or (b) improvements values?	Yes	9	0
		No	0	100

Table 13 clearly shows that land values (improved and vacant land) are assessed by APLUC to arrive at tax payable. In case of a developed property, its two components (land and improvement) are incorporated in their assessment and this is majorly what land value taxation advocates. Tax Assessors affirmed that vacant lands are also included as tax base by APLUC, though it is rarely implemented because of difficulty in establishing ownership due to lack of physical presence.

A question was asked to know the guideline that is followed by APLUC for separate valuations of land and improvements. The respondents confirmed that there are no laid down rules or guidelines. They further affirmed that they have a technique where land values are obtained as residual value after building value has been deducted from overall property value. Thereafter the land and building value tax are determined by applying a code rate on the assessed value. This technique can be defective especially when the method used to arrive at building value is deficient moreover the use of code rate does not conform to the principle of **transparency**.

Having established the fact that land value is taxed in property taxation by APLUC, it became imperative to determine the extent to which land value is made relevant in the overall assessed value. Tax Assessors were asked few questions to that effect.

**Table 14: Tax Assessors Response on the Relevance of Land Values in the Assessment Value of Properties**

Research Objective	Question	Options	Frequency	% Frequency
Examine the principles and objectives of land – based taxes in the study area	Do you have some means of gauging the accuracy of the land values especially for improved parcels?	Yes	9	100
		No	0	0
	Can appeals be based on the separate components of total assessed value if the taxpayer disputes either of the separate values?	Yes	9	100
		No	0	0
	Can taxpayers readily find the separate values of the two components of real estate values for parcels in your jurisdiction, other than their own?	Yes	0	0
		No	9	100

Table 14 shows that the accuracy of land values is checked by the tax assessor. When interviewed on the means of gauging the accuracy, they acknowledged that they use mostly comparable sales method of valuation (when possible) and in most cases intuition. They were also asked questions to ascertain the independent nature of the separate components of total assessed value. Their response (questionnaire and interview) shows that appeals can be made on separate components of assessed value but after fifty percent of total assessed value has been paid by the taxpayer. The importance of this analysis is to show that land values are taxed resulting to increased revenue base (land and improvement) in the state while neglecting the principle of **simplicity** as one of the criteria that qualifies a tax as a good tax.

The question on the transparency of the entire process became necessary after establishing that land value and improvement can exist separately in property tax assessment in the state. It was discovered that tax payers cannot assess land value of other tax payers (in the same location) when they do not agree to assessed values they are presented with. The implication is that what APLUC practices works against principle of **certainty and transparency** that a good tax system portrays.

### **4.3 Framework to Partition Property Value between Land Value and Building Value**

In this Section, effort was made to establish the relationship that exists between the Land value variables (size/area, location, density etc), building value variables (finished living area, floor finish, age, etc) and property values in the study area. This was carried out to ensure logically consistent findings in consonance with the second objective of the study.

- To develop a model that will partition property value into land value and building value.

### 4.3.1 Computation of Land Value

To do this, excel page was employed to compute land value from the variables that affect it. The variables were juxtaposed to arrive at the land values. Table 15 shows Land Value Computation for one of the study areas.

**Table 15: Land Value Computation for G.R.A Agu-Awka**

S/N	LAND AREA A	LOCATION FACTOR B	PRICE OF PROPERTY IN THE NEIGHBORHOOD (PPIN) (₦) C	PLOT LINEARIZED VALUE D=A/NBHD plot size	LAND VALUE (LV) (₦) E=D*C
1	912	1	1200000	1.013333	12160000
2	906	1	1200000	1.006667	12080000
3	1736	1	1200000	1.928889	23146667
4	1268	1	1200000	1.408889	16906667
5	928	1	1200000	1.031111	12373333
6	903	1	1200000	1.003333	12040000
7	1002	1	1200000	1.113333	13360000
8	5203	1	1200000	5.781111	69373333
9	1204	1	1200000	1.337778	16053333
10	967	1	1200000	1.074444	12893333
11	911	1	1200000	1.012222	12146667
12	909	1	1200000	1.01	12120000
13	821	1	1200000	0.912222	10946667
14	1014	1	1200000	1.126667	13520000
15	1003	1	1200000	1.114444	13373333
16	1908	1	1200000	2.12	25440000
17	1112	1	1200000	1.235556	14826667
18	1462	1	1200000	1.624444	19493333
19	1104	1	1200000	1.226667	14720000
20	909	1	1200000	1.01	12120000

Table 15 shows land values in the study area. To obtain Land Value (LV) for property 1, the following was done:

$$LV = Plot Lin V * Loc. Fac * PPIN$$

$$LV = 912/900 (NBHD plot size) * 1 * 12000000$$

$$LV = ₦12, 160,000$$

### 4.3.2 Computation of Building Value

Some building value variables which are qualitative in nature (floor finish, property type etc) were ranked.

**Table 16: Qualitative Building Variables and their ranking for G.R.A Agu-Awka**

S/ N	TYPE OF FINISH	BUILDING CONDITIO N	NATURE OF DEVELOPM ENT	FLOOR FINISH	PROPERTY TYPE
1	SANDCRETE 1	FAIR 3	IMPROVED 3	CEMENT SCREED 2	BUNGALOW 7
2	EMULION PAINT 2	GOOD 4	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
3	MARBLE &PAINT 5	GOOD 4	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
4	MARBLE &PAINT 5	GOOD 4	IMPROVED 3	TERRAZZO 4	1 STOREY 6
5	TEXCOTE 3	VERY GOOD 5	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
6	SANDCRETE 1	VERY POOR 1	NOT FULLY IMPROVED 2	REINFORC ED CONCRETE 1	DETACHED/SEMI DETACHED FAMILY HOUSE 8
7	TEXCOTE 3	VERY GOOD 5	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
8	EMULSION PAINT 2	GOOD 4	IMPROVED 3	PVC TILES 3	BUNGALOW 7
9	EMULSION PAINT 2	GOOD 4	IMPROVED 3	TERRAZZO 4	1 STOREY 6
10	EMULSION PAINT 2	POOR 2	IMPROVED 3	CEMENT SCREED 2	BUNGALOW 7
11	SANDCRETE 1	POOR 2	IMPROVED 3	TERRAZZO 4	DETACHED/SEMI DETACHED FAMILY HOUSE 8
12	EMULSION PAINT 2	GOOD 4	IMPROVED 3	CERAMIC TILES 4	BUNGALOW 7
13	SANDCRETE 1	POOR 2	IMPROVED 3	PVC TILES 3	DETACHED/SEMI DETACHED FAMILY HOUSE 8



14	TEXCOTE 3	VERY GOOD 5	IMPROVED 3	CERAMIC TILES 5	1 STOREY 6
15	TEXCOTE 3	GOOD 4	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
16	TEXCOTE 3	VERY GOOD 5	IMPROVED 3	CERAMIC TILES 5	DETACHED/SEMI DETACHED FAMILY HOUSE 8
17	EMULSION PAINT 2	GOOD 4	IMPROVED 3	CERAMIC TILES 5	DETACHED/SEMI DETACHED FAMILY HOUSE 8
18	TEXCOTE 3	GOOD 4	IMPROVED 3	CERAMIC TILES 5	1 STOREY 6
19	MODERN PAINT 4	GOOD 4	IMPROVED 3	TERRAZZO 4	BUNGALOW 7
20	SANDCRETE 1	POOR 2	IMPROVED 3	CEMENT SCREED 2	DETACHED/SEMI DETACHED FAMILY HOUSE 8

Subsequently these building variables were transformed in the excel spreadsheet to compute their corresponding quality class. Then the quality class was used to determine building values. Table 17 and 18 shows, Quality Class and Building Value computation respectively for one of the study areas.

**Table 17: Quality Class Computation for G.R.A Agu-Awka**

S/N	FLA	TF	BC	AGE	ND	FF	NF	PT	%TF	AG LV	%N D	%FF	%PT	QC
1	547.2	1	3	10	3	2	1	7	0.143	0.3	1	0.33	0.875	0.013
2	389	2	4	10	3	4	1	7	0.286	0.4	1	0.67	0.875	0.067
3	1326	5	4	10	3	4	1	7	0.714	0.4	1	0.67	0.875	0.167
4	644.4	5	4	10	3	4	1	6	0.714	0.4	1	0.67	0.75	0.143
5	418	3	5	5	3	4	1	7	0.429	1	1	0.67	0.875	0.25
6	561.2	1	1	15	2	1	1	8	0.143	0.06 7	0.67	0.17	1	0.001
7	609.8	3	5	9	3	4	1	7	0.429	0.55 6	1	0.67	0.875	0.139
8	3581.7	2	4	15	3	3	1	7	0.286	0.26 7	1	0.5	0.875	0.033
9	620.2	2	4	10	3	4	1	6	0.286	0.4	1	0.67	0.75	0.057
10	724	2	2	15	3	2	1	7	0.286	0.13 3	1	0.33	0.875	0.011
11	547.7	1	2	10	3	4	1	8	0.143	0.2	1	0.67	1	0.019
12	502.5	2	4	10	3	2	1	7	0.286	0.4	1	0.33	0.875	0.033
13	228.6	1	2	15	3	3	1	8	0.143	0.13 3	1	0.5	1	0.010
14	272.8	3	5	7	3	5	1	6	0.429	0.71 4	1	0.83	0.75	0.191
15	492.6	3	4	10	3	4	1	7	0.429	0.4	1	0.67	0.875	0.1
16	526.3	3	5	11	3	5	1	8	0.429	0.45 5	1	0.83	1	0.162
17	278.4	2	4	12	3	5	1	8	0.286	0.33 3	1	0.83	1	0.079

18	654	3	5	6	3	6	1	6	0.429	0.83 3	1	1	0.75	0.268
19	594.5	4	4	13	3	4	1	7	0.571	0.30 8	1	0.67	0.875	0.103
20	515.4	1	2	14	3	2	1	8	0.143	0.14 3	1	0.33	1	0.007

Thereafter most of the variables which are weighted to obtain their percentage mean values which are multiplied to obtain the quality class (QC). For example the quality class for property 1 was obtained thus;

$$QC = \text{No. of floors} * \% \text{type of finish} * \text{AgeLV} * \% \text{nature of development} * \% \text{floor Finish} * \% \text{property type}$$

$$QC = 0.143 * 0.30 * 1 * 0.33 * 0.875$$

$$QC = 0.01238735$$

**Table 18: Building Value Computation for G.R.A Agu- Awka**

QC	LOC.FAC	FIN.LVG AREA	SQRT FLA	COST OF CONST./M <sup>2</sup>	BUILDING VALUE (₦)
0.0125	1	547.2	23.39231	24,000	3840081
0.066667	1	388.96	19.72207	24,000	12273753
0.166667	1	1326	36.41428	24,000	193141357
0.142857	1	644.4	25.38503	24,000	56084971
0.25	1	418	20.44505	24,000	51276181
0.001058	1	561.2	23.68966	24,000	337641.58
0.138889	1	609.8	24.69413	24,000	50194933
0.033333	1	3581.7	59.84731	24,000	171484076
0.057143	1	620.2	24.90381	24,000	21182189
0.011111	1	724	26.90725	24,000	5194892.7
0.019048	1	547.7	23.40299	24,000	5859574.1
0.033333	1	502.5	22.41651	24,000	9011437.7
0.009524	1	228.6	15.11952	24,000	790016.72
0.191327	1	272.8	16.51666	24,000	20689643
0.1	1	492.6	22.19459	24,000	26239337
0.162338	1	526.3	22.94123	24,000	47041438
0.079365	1	278.4	16.68532	24,000	8847988.4
0.267857	1	654	25.57342	24,000	107517980
0.102564	1	594.5	24.38237	24,000	35680786
0.006803	1	515.4	22.70242		1910339.4

The Building Value (BV) for property 1 is computed thus;

$$BV = QC * Loc. factor * Finished living Area * SQRT of Finished Living area * Cost of Construction$$

$$BV = 0.01238735 * 1 * 547.2 * 23.39231 * 24,000$$

$$BV = ₦3, 805,482.$$

#### 4.3.3 Computation of Property Values

Property Values for the properties are computed by summing up the land values and building values. This is shown in table 18

**Table 19: Computation of Property Values for G.R.A, Agu-Awka**

S/N	LAND VAL.	BLD. VAL	EMV	%LAND VAL	% BLD VAL
1	12160000	3840081	16000081	76%	24%
2	12080000	12273753	24353753.4	50%	50%
3	23146667	193141357	216288023	11%	89%
4	16906667	112169942	129076609	13%	87%
5	12373333	51276181	63649514.5	19%	81%
6	12040000	675283.16	12715283.2	95%	5%
7	13360000	50194933	63554932.6	21%	79%
8	69373333	171484076	240857409	29%	71%
9	16053333	42364378	58417711.1	27%	73%
10	12893333	5194892.7	18088226	71%	29%
11	12146667	11719148	23865814.8	51%	49%
12	12120000	9011437.7	21131437.7	57%	43%
13	10946667	1580033.4	12526700.1	87%	13%
14	13520000	20689643	34209642.5	40%	60%
15	13373333	26239337	39612670.1	34%	66%
16	25440000	94082875	119522875	21%	79%
17	14826667	17695977	32522643.4	46%	54%
18	19493333	107517980	127011313	15%	85%
19	14720000	35680786	50400786.1	29%	71%
20	12120000	3820678.8	15940678.8	76%	24%
				868%	1132%
				Average percentage of land value 43%	Average percentage of Building value 57%

For property 1 the Property Value (PV) is computed thus;

$$PV = LV + BV$$

$$LV = PV - BV$$

$$PV = 12,160,000 + 3,840,081$$

$$PV = \text{₦ } 16,000,081$$

A further analysis shows that the percentage of land value in the overall property value is 43%, showing that it has a great contribution in the property value. The same pattern was seen in the other study areas. A good proportion of property value of the study areas is attributed to land value (Appendix V, VI, and VII). This shows that if land value is not taxed for vacant land a good proportion of revenue from it is thrown away. Government thus loses revenue by neglecting this avenue (land value) for increasing its tax base.

#### **4.4 Models to establish contributions of individual explanatory variables to land values, building values and property values in the study area.**

In this Section, effort was made to establish the contribution of land value variables (size/area, location, density etc) to land value, building value variables (finished living area, floor finish, age etc) to building value and on property values in the study area. This was carried out to ensure logically consistent findings in consonance with the third objective of the study:

To derive models that can establish the contributions of individual explanatory variables to land, building and property values in the study area.

In this respect, the hypotheses earlier formulated are re-stated in the null form as follows:

- Ho<sub>1</sub>: There is no significant relationship between urban land value and its explanatory variables in the study area.
- Ho<sub>2</sub>: There is no significant relationship between building value and its explanatory variables in the study area.

H<sub>03</sub>: There are no differences in individual contributions of the explanatory variables to property values in the study area.

The hypothesis was tested and results presented in the next Sub-Sections. In doing so, attempt was made to determine if there are statistically significant relationships between the variables using the multiple regression models.

#### 4.4.1 Land value Model

To develop the model land values that were computed in the excel spreadsheet were run in Stata E9 software to determine the significance of each variable in the model. Table 20 shows the result (Stata SE9 page for land value, building value and property value is attached in Appendix IX).

**Table 20: Land Value Model**

<b>Variable</b>	<b>Coefficient</b>	<b>t-statistics</b>	<b>Prob. of t-statistics</b>
<i>Log Land Value</i>	<i>Dependent variable</i>		
Size	0.0002266	20.04	0.00
Dumloc	-0.4740567	-17.96	0.00
Dumdens	0.5727094	19.78	0.00
Dumlocdens	0.2843725	7.81	0.00
Cons	6.794567	345.09	0.00
<i>R-Squared</i>	0.9694		
<i>Adjusted R-Squared</i>	0.9677		
<i>F-Square</i>	593.58		

The study adopted a regression approach to the statistical modeling. Given that location, density and size are the core variables that affect land value, they were used to develop a land value model as presented in table 20. The log of land value is the dependent variable; while dummy for location, dummy for density, and interactive dummy of both location and density are all explanatory variables. Since Awka and Onitsha in Anambra state are the cities being considered, the dummy for location had Awka as the base category. The density was categorized into low density and high density area. The low density area is the area with low population density and vice versa. For the study, GRA in both Awka and Onitsha are classified as low density area. The low density area was used as the base category.

From the result, the parameter sign of the coefficients are positive for all the variables with the exception of location dummy. The implication is that since Awka was the base category for the location dummy, it makes sense to say that land value outside of Awka tends to be cheaper. The reason for this cannot be farther than the fact that land in Awka as the capital of Anambra state has become more expensive than other areas because of government presence and increased political activities in the past few years. The probability of t-statistics for the location (0.00) is less than 0.05, as such, the relationship established is significant. The dummy of density is positive and significant. The implication is that land value in low density area tends to be more expensive than in high density area. The coefficient for size is positive and significant as expected. Hence size significantly affects the value of land.

The same process was likewise followed to get a building value model using building values. Table 21 shows the result.



#### 4.4.2 Building value Model

A statistical model similar to that of land value was also designed for the building value

**Table 21: Building Value Model**

Variable	Coefficient	t-statistics	Prob. of t-statistics
Log of building value	Dependent Variable		
Finishing	0.0374282	0.78	0.435
Condition	0.1782982	3.55	0.001
Age	-0.0322225	-5.49	0.000
Nature	0.2366449	1.33	0.188
Floor	0.1557906	3.70	0.00
Storey	0.049139	1.25	0.214
Type	0.0882039	3.36	0.001
Living area	0.1285908	0.38	0.706
Log of size	1.453648	9.16	0.000
Dumdens	1.086477	7.38	0.000
<i>R-Squared</i>	0.9974		
<i>Adjusted R-Squared</i>	0.9971		
<i>F-Statistics</i>	2706.39		

Type of finishing, condition of building, age, nature, floor type, number of storeys, type of building, and living area were introduced to the building model. Also, the dummy for location, density and the interactive dummy were also added. However, the location dummy and the interaction dummy were earlier introduced but later dropped because they were wrongly signed and statistically insignificant. This is expected knowing that location is affiliated more to land than building, thus it is the location of land that commands the value a building possesses.

The result presented in table 21 showed that the coefficient of type of finishing is positive but not significant implying that though the type of finishing should positively affect the value of a building, such effect is not significant. Similarly, condition of building have positive coefficient. That is to say that the condition of building affects the value of a building positively and this effect is significant. The age of the building is the only variable that has a negative coefficient. The variable is also significant. The sense to be made is that the older a building is, the lesser its value. And since it is significant, the variable is very important in determining the value of a building. The coefficient of nature of the building numbers of floors, and living area are all positive and insignificant. The implication is that these variables are not significant factors that affect building value. On the other hand the coefficient of floor finishing, type of building, size of land and the density of the area are all positive and significant. By implication, floor finishing significantly increases the value of building. Also the type of building, size of land and the density of the area significantly increases the value of land.

A third model was built for property value to establish the significance of the variables.

#### 4.4.3 Property Value Model

**Table 22: Property Value Model**

Log of Property Value	Coefficient	t-statistics	Prob. Of t-statistic
Condition	0.0657537	2.75	0.007
Age	-0.0090955	-3.17	0.002
Nature	0.4356841	4.84	0.000
Floor	0.0398732	1.84	0.070
Living area/size ratio	0.6433765	3.87	0.000
Log of size	1.841939	23.50	0.000
Dumdens	0.4233793	6.53	0.000
<i>R-Squared</i>	0.9994		
<i>Adjusted R-Squared</i>	0.9993		
<i>F-Square</i>	17357.55		

This property value model puts into consideration variables that should affect the value of a property. The variables in the land model and as well as that of building model are adapted into the property model. However, at first run, some of the variable were wrongly signed and insignificant hence not very relevant to the model. Such variables were therefore dropped. Hence the explanatory variables in the property value model are condition of the building, age, nature, type of floor finishing, living area as a ratio of size of land, log of size and the dummy for density. The dummy for location was wrongly signed and insignificant. As such it was dropped. Similarly, the interactive dummy for location and density was dropped also. Dropping these variables improved the performance of the rest of the variables in the model implying that there are not very important variables in the model. The implication of this kind of drop is that whether a property is in Awka or Onitsha, the average property buyer does not really care.

However, since dummy for density is significant across all three models, it implies that the density of the area is an important factor in the decision of the average buyer as such it affects the value of both land, building and in turn the property. It is indicative that the value of land, building or property is higher in low density area (in the case of this study the GRA) than they are in high density area (Fegge and New Era).

All the variables in the model with the exception of age have positive coefficients. That is to say that the condition of the building, nature of building, floor type, living area, size of land and density of the area all have positive and significant effects on the value of a property. The age of a building on the other hand have negative but significant coefficient. The implication is the age of a building reduces the value of a building.

#### **4.5 Theoretical Expectations Vs Observed results**

Having discussed the models, the variables and their significance in the value of the dependent variables (land, building and property), this section determined the fourth objective that is;

If statistical evidence supports theoretical postulation on the relative importance of land value variables and building value variables in the property valuation model

#### **Land Value Expectations Based on Theory**

Land values increase over time because of population growth and community improvements made by the public or private sector (e.g., utility infrastructure, roads etc). Taxing land value generates revenue that can benefit the community that provided the landowners with their unearned increases in land value.

The landowners who do not create land values enjoy the windfall gains on their land while excluding the rest of the community.

Land Value Taxation (LVT) is a just and fair way of paying for these public services by aiding the community to recoup the land values it created.

### **Observed**

Response from all respondents points out the fact that land values and consequently property values increases majorly as a result of public provisions by the government (Table 8). This benefit to a large extent is still enjoyed by property owners (especially vacant land) and has not been significantly transferred to the community which contributes the fund with which the services are provided. Land values are continually appreciating to the advantage of landowners, while the community that made it possible gains barely anything.

Taxation of vacant land in the study areas is rarely done and so not effective. This is because tax on vacant land is not administered until when it is up for sale.

### **Determination**

Out of the three variables which determines land value, two (size and density) were seen to be significant in the property value model (Table 21). This clearly shows that the variables that determine land values invariably determine property value. The interaction of the land value variables and building variables in the property model presented a model where some variables which were significant in the building value model became insignificant. The explanation is that the land value variables are quite strong and edged out these variables which also impacts on property values. This further suggests that for

any property taxation the incidence tax should be on building and land with land wielding a higher percentage as it plays a major role on how the property value model turns out.

The current practice to a reasonable extent still negates the fact that the government and community on which the land stands contributed to land value and as such are entitled to the value that accrue to it.

Theoretical expectations are evident in observations of property taxation practice in the study areas. The tax demand notices that are distributed by APLUC clearly show the portion for land value tax for improved land. There is no evidence possibly pointing to taxation of vacant land in Anambra State. It is evident that the state government through APLUC has taken a step towards reaping the benefit of land values on improved properties.

### **Variable- Building Value**

#### **Expectations based on theory**

For a tax system to be deemed good and sustainable, some major principles are used to evaluate it; Equity, Neutrality, Stability, Benefit principle, Transparency. These will indicate whether the tax design is good or not.

#### **Observed**

To arrive at the property tax figures code rates are used which are determined by tax assessors. The amount of rate is same for each house type, for example two nos. one storey building in the same neighborhood will be assessed with the same code rate. There are no laid down policies that inform the review of these rates.

From Table 8 item 3 property owners affirmed that building values are achieved by their own efforts as they received no benefit from the government, while item 4 reiterates that building maintenance attracts more property tax which may influence their decision on maintenance especially external repairs.

### **Determined**

Equity/Fairness principle insists that taxes should be fair based on benefits received and ability to pay. This is not adhered to in APLUC as the code rates presume that all properties are homogenous thus invalidating the unique nature of each property. Transparency principle has also been neglected by use of code rates. Moreover as the taxpayers did not erect their buildings with the help of the government, it becomes fair that land whose value is fallout of governments' expenditures should be taxed with even a greater percentage than buildings.

The uncertainty of this tax system is apparent as the amount to be paid yearly is not certain because rates are not stable.

The present land use charge cannot boast of being efficient because it distorts economic behavior when it makes one decide what improvement to make on his/her property. A property owner whose building is due for maintenance or facelift will prefer to leave it in its present state because of the fact that any maintenance work or facelift will attract more property rate.

## **Variable – Property Value**

### **Expectations based on theory**

Property value which is the basis for assessing property taxes comprises of the value of building and the land on which it is standing. When the property has no structure on it then the property value is the land value alone. Property tax is usually based on the value of the property (including the land) one owns.

### **Observations**

Across the state, tax payable is achieved by applying a code rate on the capital value of the property (specifically building).

Land and building values are taxed for improved properties but not effectively done for vacant parcels of land. This is as a result of administration and implementation difficulty associated with vacant land.

### **Determined**

Computation of land and building value shows that both values can be obtained separately (Tables 16 and 17). The property value model (Table 21) clearly indicates that building value and land value both play significant role in the resultant property value. This is seen in the interaction of the variables that determines their values. The implication is that both the value of land and the value of building are important factors that determine the value of a property. That is to say that none of them should be neglected. It also implies that they can be distinct. The distinction is such that both can be separate from each other.



The interesting aspect of this model is that land value variables are quite prominent in the property value model. This highlights the case that is made for Land Value Taxation. That taxation of only improvements or buildings in property taxation is not appropriate because buildings alone do not contribute to the value of a property, but the value of building and land makes up property value. This probably informs the proposal of LVT proponents for reform where land value, if not the only element of real property taxed, is taxed more than improvement value (Dye & England, 2009). Going by the result obtained it can be proposed that a higher tax value be assigned to land value and a lower value on building value because the former is seen to have more impact on property value than the latter. The consequent effect will be a revenue- neutral-tax that reduces land value while achieving denser development.

#### **4.6 To Examine the Consequences of Taxation of Urban Land Value for Sustainable Taxation and Land Use in Anambra State**

In this Section, the attempt was to resolve some theoretical issues on urban land value taxation as deduced in the literature. This is with a view to determine the fifth objective of the study which is to examine the consequences of taxation of urban land value for sustainable taxation and land use in Anambra State.

In doing this, the study conceptualized sustainability of urban land in the context of urban land value taxation and identifies the benefits there from. Therefore, a number of theories and concepts identified in reviewed literature were examined by seeking opinions of practicing Estate Surveyors and Valuers and Tax Assessors who rated them according to set options. The options are Strongly Agreed, Agree, Undecided, Disagree, and Strongly Disagree, which were rated 5, 4, 3, 2 and 1 respectively with the weighted

mean used. The resulting figures are shown in Table 22, which contains the frequency of each option.

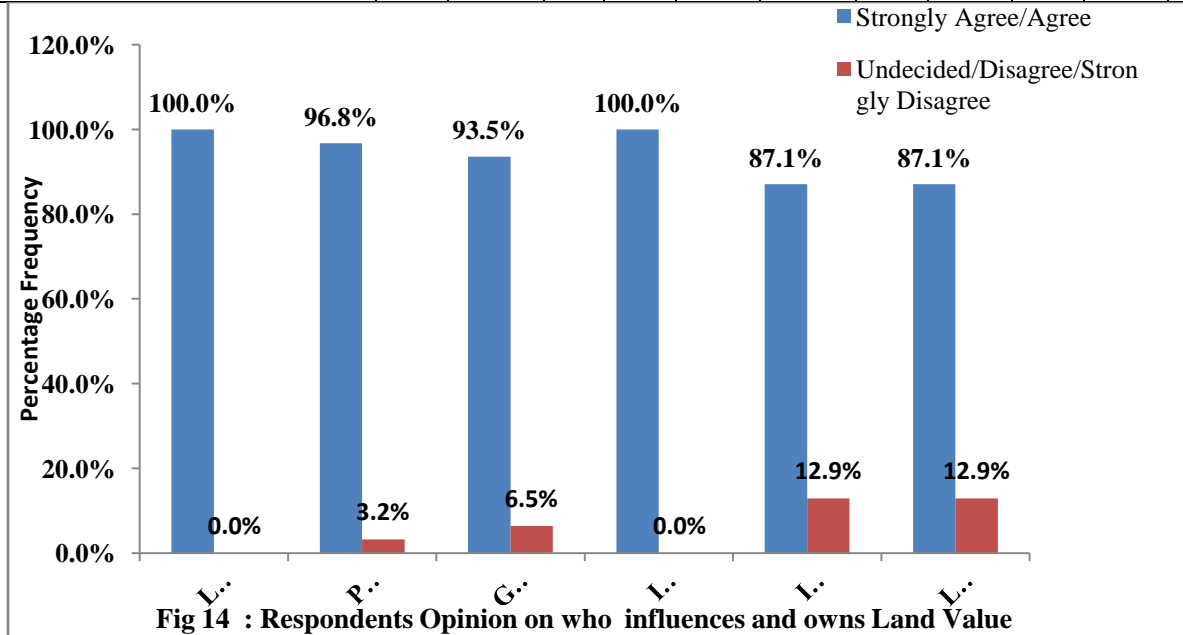
From Table 22, an average of 90% of the professionals (Estate Surveyors and Tax Assessors) strongly agreed that land is a gift from nature and that the value it commands is solely created by social demand not the land owners efforts. They also agreed that land values increases with provision of infrastructures from government. As a result, gains from land value belong to the community because infrastructures provided by government are from tax paid by the community.

Opinions of respondents were abbreviated as follows:

- LUSGN - "Land in its unimproved state is a gift of nature"
- PULSCDNP - "Payment for use of land reflects socially created demand and not payment to bring land into existence"
- GRFTPI - "Government use revenue from taxes to provide infrastructures"
- IELV - "These infrastructures enhance land values"
- ILVCEAUGL - "Increase in land values are due to community's economic activities thus unearned gains by landowners"
- LVBTC - "Land value can then be said to belong to the community"

**Table 23: Respondents opinion on who influences and owns Land Value**

Statement	Strongly Agree(5)		Agree (4)		Undecided (3)		Disagree (2)		Strongly Disagree (1)		Weighted Mean
	F	% F	F	F	F	%F	F	%F	F	%F	
Land in its unimproved state is a gift of nature LUSGN	29	94	2	6	0	0	0	0	0	0	4.94
Payment for use of land reflects socially created demand and nonpayment to bring land into existence (PULSCDNP)	25	81	5	16	1	3	0	0	0	0	4.77
Government use revenue from taxes to provide infrastructures (GRFTPI)	19	61	10	32	2	6	0	0	0	0	4.55
These infrastructures enhance land values (IELV)	22	71	9	29	0	0	0	0	0	0	4.71
Increase in land values are due to community's economic activities thus unearned gains by landowners (ILVCEAUGL)	9	29	18	58	0	0	4	13	0	0	4.03
Land value can then be said to belong to the community (LVBTC)	8	26	19	61	0	0	4	13	0	0	4.00



**Fig 14 : Respondents Opinion on who influences and owns Land Value**

Table 23 shows response to the statements made on if either of the two components of property should be taxed or in the alternative a Split-rate taxation of both land and building.

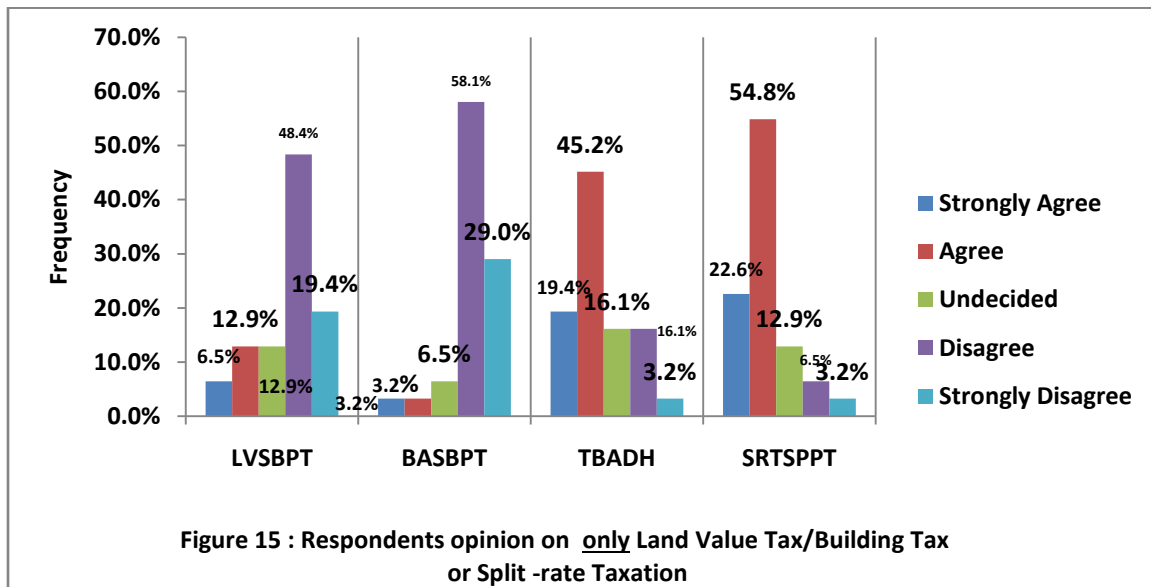
All the respondents agree that building /improvement values are as a result of an owner's effort. A good number of the respondents disagree with the idea of taxing land or building alone. They believe that taxing building alone discourages maintenance of existing structures. About 70% agreed that split rate taxation that splits property taxation into its two components is a practical alternative to taxing land or building. Their opinions were abbreviated as follows:

- LVSAPT - "As a result of the public efforts and unearned gains land values only should be the basis of tax in property taxation"
- BASAPT - "Buildings/ Improvements alone should be basis of tax in property taxation"
- TBADH - Taxing building alone will discourage hard work( putting up structures and maintaining existing ones) while encouraging laziness and non improvement
- SRTSAPT - Split -rate taxation (taxing land and building at different rates) is the solution to some major problems inherent with property taxation

**Table 24: Respondents’ opinion on Land /Building only Taxation vs. Split-rate taxation**

STATEMENTS	Strongly Agree (5)		Agree (4)		Undecided (3)		Disagree (2)		Strongly Disagree (1)		Weighted Mean
	F	%F	F	%F	F	%F	F	%F	F	%F	
As a result of the public efforts and unearned gains land values <u>only</u> should be the basis of tax in property taxation (LVSAPT)	2	6.5	4	12.9	4	12.9	15	48.4	6	19.4	2.39
Buildings/ Improvements values are due to private sectors efforts	28	90	3	9.7	0	0	0	0	0	0	4.9
Buildings should not be taxed in property taxation	6	19.4	8	25.8	2	6.5	7	22.6	8	25.8	2.9
Buildings/ Improvements alone should be basis of tax in property taxation (BASAPT)	1	3.2	1	3.2	2	6.5	18	58.1	9	29.0	1.94
Taxing building alone will discourage hard work (putting up structures and maintaining existing ones) while encouraging laziness and non improvement (TBADH)	6	19.4	14	45.2	5	16.1	5	16.1	1	3.2	3.61
Split –rate taxation (taxing land and building at different rates) is the solution to some major problems inherent with property taxation (SRTSAPT)	7	22.6	17	54.8	4	12.9	2	6.5	1	3.2	3.87

A split-rate taxation where; Taxing land at a higher rate than building is a practical alternative to taxing only land or building	6	19.4	14	45.2	3	9.7	2	6.5	6	19.4	3.39
(1) Taxing building at a higher rate than land is a practical alternative to taxing only land or building	0	0	2	6.5	3	9.7	18	58.1	8	25.8	3.74



Respondents strongly agreed (90%) that with urban land value taxation socially created values can be channeled into government use, thereby achieving one of the major objectives of taxation- benefit principle: that taxes should be paid according to benefits received.

Majority of the respondents (80%) agreed that property taxation which encourages land speculation, vacant lots and urban sprawls in core urban areas can be curbed by use of

urban land tax. That urban land tax can be used to manage land use and development and to achieve sustainable development. Their opinions were abbreviated as follows:

- LTBRLRAL - Lowering tax on buildings and raising tax on land can help to achieve a revenue-neutral alternative
- SCVCGPU - “Socially created values would then be channeled into government use rather than private uses”
- BPTWBA – “Benefit principle of taxation will be achieved as taxes could be related closely to the cost of governmental services”
- EWTFGLG - “Land value taxation will be a more equitable way of financing local government.”
- ULVTDLDD - Urban land value taxation will encourage denser patterns of land development thus inhibit metropolitan sprawl
- HPULEBE - “High price for some urban land is essential to encourage the best employment of it”
- ULVTDS – “Urban land value taxation will discourage speculation as property owners face a sizable tax regardless of how they improve their property
- RUBIWGE - “A switch to a land value tax will lead to reduced urban blight, increased wealth generation and economic efficiency”
- ULVTLUSD – “Urban land value taxation is a tool that can be used to manage land use, urban density and expansion thus achieving sustainable development”

**Table 25 Respondents opinion on benefits of Urban Land Value Taxation**

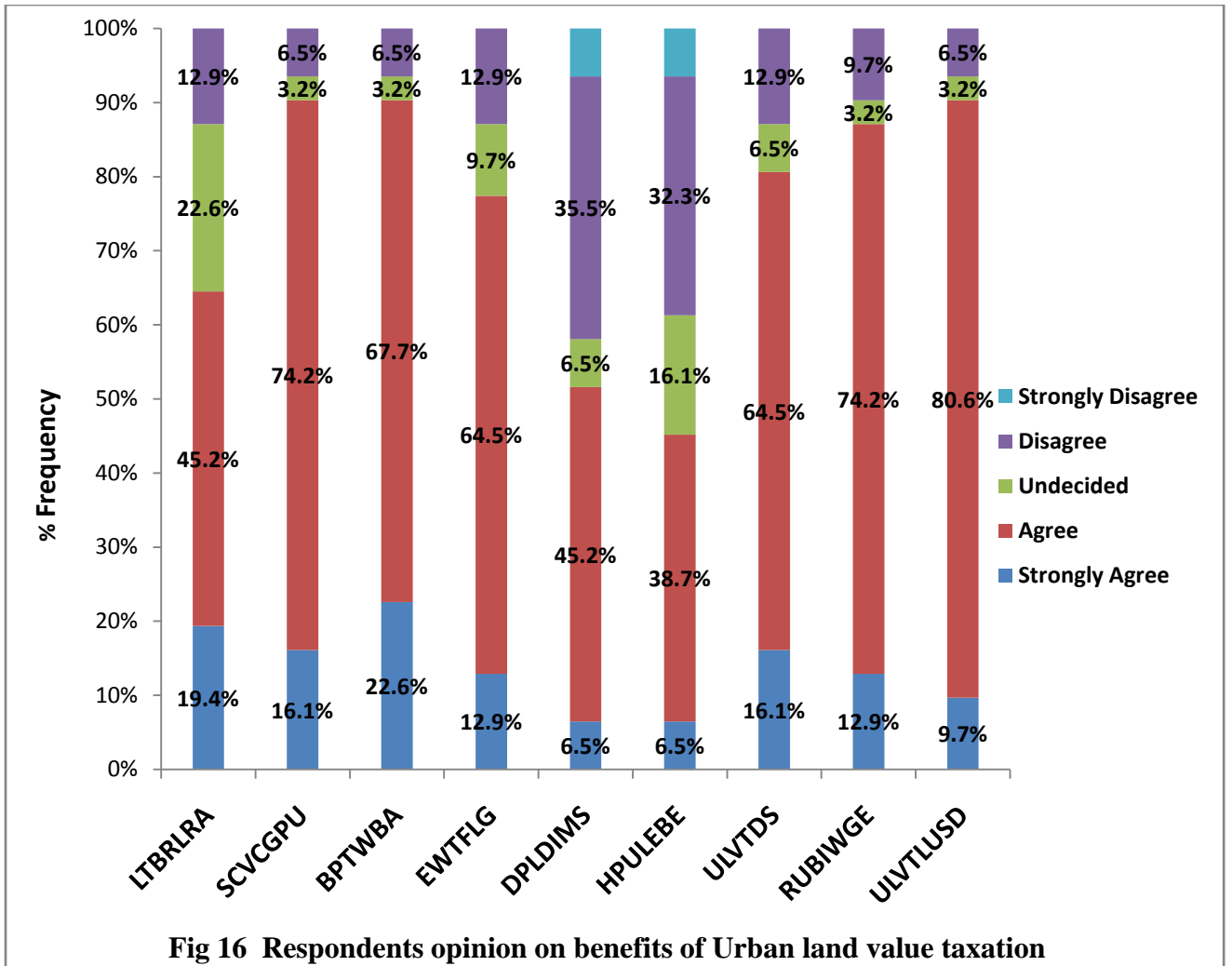
STATEMENTS	Strongly Agree (5)		Agree (4)		Undecided (3)		Disagree (2)		Strongly Disagree (1)		Weighted Mean
	F	%F	F	%F	F	%F	F	%F	F	%F	
Lowering tax on buildings and raising tax on land can help to achieve a revenue-neutral alternative (LTBRLRA)	6	19.4	14	45.2	7	22.6	4	12.9	0	0	2.74
Land value tax levied on the market value of all land would constitute a continuous pressure on land owners thus inducing them to compete favorably with intending land owners.	2	6.5	16	51.6	1	3.2	8	25.8	4	12.9	3.13
A buyer of land ought to pay the amount of its worth at best use while the owner who faces no cost of production need not receive all that is paid.	1	3.2	13	41.9	4	12.9	10	32.3	3	9.7	2.97
Sequel to the statement above; (i) The total collected from users would not change, but private owners of land would retain less, enabling the public revenue to increase as	1	3.2	7	22.6	13	41.9	9	29.0	1	3.2	2.94



the treasury gets more.											
(ii) On the long run, land owners would get less of the increments in land values and the public would get more.	3	9.7	18	58.1	2	6.5	6	19.4	2	6.5	3.45
(iii) Socially created values would then be channeled into government use rather than private uses (SCVCGPU)	5	16.1	23	74.2	1	3.2	2	6.5	0	0	4.00
(iv) Benefit principle of taxation will be achieved as taxes could be related closely to the cost of governmental services (BPTWBA)	7	22.6	21	67.7	1	3.2	2	6.5	0	0	4.06
(v) Land value taxation will be a more equitable way of financing local government (EWTFLG)	4	12.9	20	64.5	3	9.7	4	12.9	0	0	3.68

Urban land value taxation will encourage denser patterns of land development thus inhibit metropolitan sprawl (ULVTDLDD)	2	6.5	14	45.2	2	6.5	11	35.5	2	6.5	3.10
High price for some urban land is essential to encourage the best employment of it (HPULEBE)	2	6.5	12	38.7	5	16.1	10	32.3	2	6.5	3.06
Property tax scheme (not taxing land) can encourage land speculation thus allowing for the persistence vacant lots and urban sprawls in urban cores	7	22.6	19	61.3	1	3.2	4	12.9	0	0	3.94
Urban land value taxation will discourage speculation as property owners face a sizable tax regardless of how they improve their property(ULVTDS)	5	16.1	20	64.5	2	6.5	4	12.9	0	0	3.84
Landowners will be encouraged to develop their parcels in a way that generates the most utility because their taxes are fixed to land value and not improvements they make to the property	4	12.9	18	58.1	2	6.5	5	16.1	2	6.5	3.55

A switch from a traditional property tax to a land value tax will lead to reduced urban blight, increased wealth generation and economic efficiency (RUBIWGE)	4	12.9	23	74.2	1	3.2	3	9.7	0	0	3.9
Urban land value taxation is a tool that can be used to manage land use, urban density and expansion thus achieving sustainable development (ULVTLUSD)	3	16.1	25	80.6	1	3.2	2	6.5	0	0	3.94



## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

#### 5.1 Research Findings

A number of deductions were made from the data analysis, these are highlighted as follows:

1. Property Owners agreed that the value of a property comprises of land value and building value. They further affirmed that increased land values they enjoy are not due to their efforts but that of the government which is made possible by public funds contributed by the community. They reiterated that a good tax system should among other objectives seek to redistribute wealth, be progressive, fair and equitable.

However, a greater percentage of property owners and Estate Surveyors were not in support of taxing land value unlike most Tax Assessors in APLUC office who are really in support of taxing land value

2. Property owners ranking of factors that influence land values, they adjudged provision of infrastructure the most influential factor compared to others. This goes further to buttress the need that land value is not incident of personal but communal effort.
3. The study further shows that most professional respondents (95%) (Estate Surveyors and Tax Assessors) are not knowledgeable about LVT and its

- principles. They believe LVT is tax on only land value (instead of split rate taxation) or tax on income from land and its resources.
4. It was also established that for a developed property, land and improvement values are jointly assessed in APLUC's assessment and a given percent assigned to land. Tax Assessors affirmed that vacant lands (in paper) are also included as tax base by APLUC, though it is hardly implemented and that there is no guideline for separate valuations of land and improvements. It was also gathered that a code rate is applied on the assessed value to arrive at tax payable.
  5. Tax Assessors indicated that intuition and in few cases comparable sales method of valuation is mostly their basis for gauging land value accuracy and that appeals can be made on separate components of assessed value (land and building). APLUC's assessment was seen to have some semblance with LVT practice but different in a good number of their principles.
  6. The study also established that tax payers cannot assess land value of other tax payers and this works against principles of transparency and certainty of a good tax system.
  7. A regression equation can be used to compute land values, building values and property values.
  8. Regression model of the dependent and independent variable for a land value model shows that land value outside Awka is cheaper than land in Awka town (which has become more expensive), population density and size of land affects

land value. A similar regression model on building value shows that condition of building, floor finishing, type of building, size of land and the density of the area have a positive and significant effect on building value. Age of a building though significant, inversely affects building value.

9. A multiple regression model on property value (with land value and building value variables as explanatory variables) shows that among other variables (land and building value) that the density of the area is an important factor in the decision of the average buyer of a property. The value of land, building or property is higher in low density area (in this case G.R.A) than they are in high density area (Fegge and New Era). The study showed that land value variables, when compared to building value variables are very significant; hence they contribute a great deal to the overall property value. Four out of ten building variables and two out of three land variables were significant in the model at 0.05, indicating that the variables that influence land values play a great role on how property value model turns out.
10. Urban land value taxation can effectively function as a tool to curb unsustainable practices (land speculation, urban blight etc), manage land- use, urban density and expansion.

## **5.2 Conclusion**

Urban land value taxation as a tool for a sustainable land use and development in Anambra State Nigeria was studied and specific objectives attained. The aim and objectives were achieved through the analysis of views of property owners, Estate

Surveyors and Tax Assessors in the study area; while the land and building value variables and their impact on land and building values were examined. In addition, the relationship between the explanatory variables in the component and combined models single were derived and evaluated.

It is hopeful that the research would stimulate other studies particularly from Tax Assessors and that the results and findings would be found to be useful contribution to knowledge. This study has opened otherwise hidden aspects of land value and expanded the research frontier in taxation of residential properties, It has reinforced the effect and significance of factors like density of an area, no. of floors, land size etc has on building, land and property value.

The study has thrown up challenges, especially in trying to use scientific means (excel worksheet) and not intuition to arrive at land, building and property value and then linking them in a multiple regression model for evaluation. The researcher is also hopeful that the findings in this study would be of great assistance to Anambra State Government especially at this time when the operations of tax assessors to arrive at property and land use charge is not clear to people. Also it is hoped that the implementation of urban land value taxation will result in sustainable use of land and development.

Lastly, the land value, building value and property value that were generated with excel sheet was applied for its simple and quite analytic features that enabled some qualitative data (e.g nature of building, floor finishing, etc) to be turned into quantitative data. The property value model that was developed with Stata SE9 to explain out the importance and significance of the variables that affect property value has not been used in any



earlier study to emphasize the relationship between land value and property value, hence the need for land value to be taxed.

There also have not been earlier studies in Nigeria on urban land value taxation and sustainable land use and development. This study is therefore a great contribution to knowledge in this regard and it is hopeful that it would open more research in this direction.

### **5.3 Recommendations**

The following recommendations are given based on the research findings;

1. A Split rate taxation where land is taxed at a higher rate than buildings should be established. In view of this, landownership should be established especially for vacant and under used land, as LVT is levied on property owners, not occupiers. Local government authorities or any authority that is saddled with the duty should establish land value maps in their government offices where land value of every property is displayed. By doing so, assessment of land values will not be a cumbersome task. Land value maps will also be a document for reference purpose where property owners are in doubt of the land value of their properties. A Geographic Information System can be used to display land values, characteristics and statistical data
2. Anambra State government having made a step towards taxing land value, in APLUC should carry out a study with the aim of deducing how to phase-in LVT to replace APLUC. This will gradually remove some of the anomalies that

- APLUC is associated with (e.g. use of code rates, non-transparency) and make the taxation system transparent and reliable.
3. As with all new policies, the general public should be educated about LVT and the inherent benefits there from, so that payers of tax will not agitate for wrong reasons.
  4. The regressive nature of taxing only building or improvements in general and outright emasculation should be stopped. There should be a reasonable equitable distribution of communal wealth (land value) and not individual wealth (building/improvement value) by taxing land value. Government above all should strive to institute a tax that is transparent, fair and equitable.
  5. Government should at all times weigh the tax it imposes on its citizens by keeping the benefits side by side the overarching criteria for assessing taxation, namely, fairness, efficiency, predictability and local democratic accountability so as to feel the pulse of its citizens and ascertain if the tax is delivering as promised.
  6. Government can carry out a pilot study on LVT a substantial and disparate area to allow the effects of interaction to show themselves.

#### **5.4 Areas for Further Research**

LVT and its principles though old in developed countries is still a novel approach to taxation of landed property thus grey areas still abounds in developing countries. Further studies needs to be done in other urban cities of Nigeria especially where property taxation is the system of taxing landed property to ascertain the general application of

present findings. There is also study opportunity of creating model to surmount the hurdle of separating land value from building value in LVT.

From this study, opportunity for further research also exists in using scientific techniques like GIS to analyze land value. This will capture the slightest change of landed properties even when they are in the same location. The model developed to partition land value and building value is a hypothetical model and purely for academic purpose thus further works can be carried out for the model/ modified version to be used practically to predict land value, building value and consequently property value.

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## APPENDIX I

Table 1: Table for Determining Sample Size for a Finite Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

The Table is constructed using the following formula for determining sample size:

*Formula for determining sample size*

$$s = \frac{X^2 NP(1 - P)}{d^2} + (N - 1) + \frac{X^2 P(1 - P)}{d^2}$$

$s$  = required sample size.

$X^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

$N$  = the population size.

$P$  = the population proportion (assumed to be .50 since this would provide the maximum sample size).

$d$  = the degree of accuracy expressed as a proportion (.05).

*Source: Krejcie & Morgan, 1970*

Nnamdi Azikiwe University,  
P.M.B 5025,  
Awka, Anambra State

Dear Sir/Madam,

**Questionnaire for Research Purpose**

This questionnaire is required to gather and analyze data for a Ph.D. research work on the topic “Urban Land Value Taxation as a tool for a sustainable land use and Development in Urban centres of Anambra State”

The study aims at examining the philosophies behind our land based taxes and to develop a model for urban land value taxation.

It would be greatly appreciated if you will complete the questionnaire. Please be assured that any information/response given in respect to this research will be appreciated and kept confidential.

Thanks,

C.P. Igwe

## APPENDIX II

### (QUESTIONNAIRE FOR PROPERTY OWNERS)

1. Name (Optional):

---

2. Street Address:

---

3. Type of Accommodation:

---

Please tick as appropriate:

4. Are you familiar with Nigerian Land related tax system?

a. Yes  b. No

5. Which of the under listed tax systems do you pay?

(a) Capital Gains Tax  (b) Value Added Tax

(c) Personal Income Tax  (d) Land Use Charge (APLUC)

(e) Company Income Tax  (f) Property Tax

(g) Capital Transfer Tax  (h) Tenement Rates

(i) Land rate (development levy, ground rent, and premium)

(j) Withholding Tax

6. Please rank these objectives of taxation according to their order importance in Nigerian land related tax system

S/N	Objectives of Taxation	Rating (Please Tick ONE point for each objective)						
1	Revenue							
2	Equity and Fairness							
3	Redistribution of Wealth							
4	Discourage Speculation							
5	Land Use Control							
6	Provision of Public amenities/service							

7	Management of Urban Density and Expansion									
---	---	--	--	--	--	--	--	--	--	--

7. With the knowledge that a good tax system ought to imbibe all or great percentage of the above listed objectives, how will you rate the Land based Taxation?

- (a) Very Good [ ]
- (b) Good [ ]
- (c) Undecided [ ]
- (d) Poor [ ]
- (e) Very Poor

9. Please rank these taxes in order of need for reform or modification

S/N	Taxes	Ranking (Please Tick ONE point for each tax)									
		1	2	3	4	5	6	7	8	9	10
1	Capital Gains Tax										
2	Value Added Tax										
3	Personal Income Tax										
4	Land Use Charge (APLUC)										
5	Company Income Tax										
6	Property Tax										
7	Capital Transfer Tax										
8	Tenement Rates										
9	Land rate (development levy, ground rent, and premium)										
10	Withholding Tax										

10. Which of these do you think is/are remedy/ies to our land related tax system?

- (a) Reduction of tax rates
- (b) Increase of tax rates

- (c) Introduction of new taxes
- (d) Increase of tax base/s
- (e) Elimination of some taxes

11. Kindly express your opinion by responding to the questions in the Table below

S/N	Question/ Statement	RESPONSE				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	The principal components that make up a property are land and buildings					
2	Land value of a property which a land owner enjoys is not due to the owner's efforts but a result of infrastructure provided by government with public funds.					
3	Building values are strictly based on owner's efforts					
4	A well maintained building attracts more tax					
5	A good tax system should be able to redistribute wealth (land value) while promoting equity, fairness and economic growth.					
6	Nigeria's land based taxes are revenue oriented.					
	The philosophy behind any Progressive taxation is equity and fairness.					
8	Land in its unimproved state and as a component of a property should be taxed in property rating.					



### APPENDIX III

#### Questionnaire for Estate Surveyors and Valuers/ Tax Assessors

1. Please rank these factors that make land values appreciate in any neighborhood. 1 being the highest, 2 next, etc

S/N	Factors	Ranking (Please Tick ONE point for each factor)						
		1	2	3	4	5	6	7
1	Accessibility to place of work, market, church etc.							
2	Provision of Infrastructural facilities Electricity, roads, pipe borne water etc)							
3	Improvement of environmental quality							
4	Private development							
5	Government land charges/fees							
6	Land title							
7	views (water views, topography, etc)							

2. Will you likely recommend land and building as tax burden for property rating?  
 a. Yes [ ]      b. No [ ]
4. Have you heard about land value taxation?  
 a. Yes [ ]      b. No [ ]
5. What do you think best describes land value taxation?  
 a. Tax on income from land and land resources  
 b. Tax on land/Improvement value [ ]  
 c. Tax on land value only [ ]  
 d. Tax on improvement only [ ]
6. Kindly express your opinion by responding to the questions in the Table below

Question	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Land in its unimproved state is a gift of nature					
Much of what is paid for the use of land reflects socially created demand and not payment to bring land into existence					
Government provide infrastructures from revenue collected from taxes					
These infrastructures enhance land values					
Increase in land values are due to public sector economic activities/ community's efforts, thus unearned gains by landowners					
The value of land can then be said to belong to the community					
As a result of the public efforts and unearned gains land values <u>only</u> should be the basis of tax in property taxation					
Buildings/ Improvements values are due to private sectors efforts					
Buildings should not be taxed in property taxation					
Buildings/ Improvements alone should be basis of tax in property rating					
Taxing building alone will discourage hard work (putting up structures and maintaining existing ones) while encouraging laziness and n improvement.					
Split –rate taxation (taxing land and building at different rates) is the solution to some major problems inherent with					

property taxation					
A split-rate taxation where; <ul style="list-style-type: none"> <li>(2) Taxing land at a higher rate than building is a practical alternative to taxing only land or building</li> <li>(3) Taxing building at a higher rate than land is a practical alternative to taxing only land or building</li> </ul>					
Lowering tax on buildings and raising tax on land can help to achieve a revenue-neutral alternative					
Land value tax levied on the market value of all land would constitute a continuous pressure on land owners thus inducing them to compete favorably with intending land owners					
A buyer of land ought to pay the amount of its worth at best use while the owner who faces no cost of production need not receive all that is paid.					
Sequel to the statement above; <ul style="list-style-type: none"> <li>(i) The total collected from users would not change, but private owners of land would retain less, enabling the public revenue to increase as the treasury gets more.</li> <li>(ii) On the long run, land owners would get less of the increments in land values and the public would get more.</li> <li>(iii) Socially created values would then be channeled into government use rather than private uses.</li> <li>(iv) Benefit principle of taxation will be achieved as taxes could be related more closely to the cost of governmental services</li> </ul>					

(v) Land value taxation will be a more equitable way of financing local government					
A tax change would lead to denser patterns of land development and, therefore, inhibit metropolitan sprawl					
High price for some urban land is essential to encourage the best employment of it.					
Property tax scheme (not taxing land) can encourage land speculation thus allowing for the persistence vacant lots and urban sprawls in urban cores					
Urban land value taxation will discourage speculation as property owners face a sizable tax regardless of how they improve their property.					
Landowners will be encouraged to develop their parcels in a way that generates the most utility because their taxes are fixed to land value and not improvements they make to the property					
A switch from a traditional property tax to a land value tax will lead to reduced urban blight, increased wealth generation and economic efficiency					
Urban land tax is a tool that can be used to manage land use, urban density and expansion thus achieving sustainable development					

7. If land and building are infused as tax burden in property taxation, what basis of tax assessment will you recommend? **Select one option**

(a) Net annual rental income [ ]

(b) Gross rental income [ ]

(c) Capital value [ ]

(d) Don't know [ ]

8. Rank the under listed factors as basic consideration in land tax reform

S/N	Factors	Rating (Please Tick ONE point for each factor)								
		1	2	3	4	5	6	7	8	9
1	Elasticity									
2	Equity									
3	Economic Efficiency									
4	Reliability									
5	Neutrality									
6	Regulation									
7	Sustainable development									
8	Revenue increase									
9	Simplicity									

9. Which of these factors do you think contribute to building/improvement value?

Factors	Sub-factors
Physical Properties	<ul style="list-style-type: none"> <li>❖ Land Area [ ]</li> <li>❖ Floor Area Ratio [ ]</li> <li>❖ No. of Floors [ ]</li> </ul>
Year of Construction	<ul style="list-style-type: none"> <li>❖ Historical Value [ ]</li> <li>❖ Age of Property [ ]</li> </ul>
Others	Population density [ ]
Building Quality	<ul style="list-style-type: none"> <li>❖ Type of Finishing [ ]</li> <li>❖ Quality of Construction [ ]</li> <li>❖ No of amenities/available amenities [ ]</li> </ul>
Amenities	<ul style="list-style-type: none"> <li>❖ Roads [ ]</li> <li>❖ Electricity [ ]</li> <li>❖ Sewers/ Gutters [ ]</li> </ul>

**APPENDIX IV**

**QUESTIONNAIRE FOR TAX ASSESSORS**

1. Are land values included in the assessment of properties for rating by your agency?  
a. Yes [ ]      b. No [ ]
  
2. Are there rules or other guidelines provided by the [appropriate state agency] pertaining to the requirement for separate valuation of land and improvements?  
a. Yes [ ]    b. No [ ]
  
3. Is there a technique/method that the agency uses to determine (a) land values and/or (b) improvements values? a. Yes [ ]      b. No [ ]
  
4. Do you have some means of gauging the accuracy of the land values especially for improved parcels?    a. Yes [ ]      b. No [ ]
  
5. If the answer to question No. 4 is yes, what means do you use to gauge accuracy?
  
6. What use is made of the separate valuations, either in your office or otherwise?  
For example,
  - a. Can appeals be based on the separate components of total assessed value if the taxpayer disputes either of the separate values?  
a. Yes [ ] b. No [ ]
  
  - b. Can taxpayers readily find the separate values of the two components of real estate values for parcels in your jurisdiction, other than their own?  
  
a. Yes [ ]    b. No [ ]

## APPENDIX V

### Property Value GRA Onitsha

	Land Area	Finished Area (size)	LOC. FAC	PPIN	PLOT LV	LAND VAL	%FLR FIN.	QC	SQRT FLA	BLD VAL	EMV
1	2370	1060.6	1	18000000	5.096774	91741936	0.166667	0.031746	48.68265	1805714	93547650
2	4171	2020	1	18000000	8.969892	1.61E+08	0.5	0.78125	64.58328	78206250	2.4E+08
3	2200	1010	1	18000000	4.731183	85161290	0.833333	0.277778	46.90416	14666667	99827957
4	2105	1474	1	18000000	4.526882	81483871	0.5	0.096429	45.88028	4871571	86355442
5	4225	2367	1	18000000	9.086022	1.64E+08	0.833333	1.25	65	1.27E+08	2.9E+08
6	1114	651	1	18000000	2.395699	43122581	0.666667	0.107143	33.37664	2864571	45987152
7	1212	891	1	18000000	2.606452	46916129	0.666667	0.428571	34.81379	12466286	59382415
8	989	633	1	18000000	2.126882	38283871	0.833333	1.041667	31.44837	24725000	63008871
9	2122	1289	1	18000000	4.563441	82141936	0.666667	0.148148	46.06517	7544889	89686824
10	1678	1141	1	18000000	3.608602	64954839	0.833333	0.208333	40.9634	8390000	73344839
11	1989	1205	1	18000000	4.277419	76993548	0.833333	0.892857	44.59821	42621429	1.2E+08
12	2562	1802	1	18000000	5.509677	99174194	0.833333	0.042857	50.6162	2635200	1.02E+08
13	2022	1524	1	18000000	4.348387	78270968	0.666667	0.044643	44.96665	2166429	80437396
14	814	565	1	18000000	1.750538	31509677	0.166667	0.017857	28.53069	348857.1	31858535
15	1009	718	1	18000000	2.169892	39058065	0.166667	0.008571	31.76476	207565.7	39265630
16	4106	2766	1	18000000	8.830108	1.59E+08	0.166667	0.364583	64.07808	35927500	1.95E+08
17	765	461	1	18000000	1.645161	29612903	1	0.803571	27.65863	14753571	44366475
18	704	442	1	18000000	1.513978	27251613	0.5	0.061224	26.533	1034449	28286062
19	1128	682	1	18000000	2.425806	43664516	0.166667	0.041667	33.58571	1128000	44792516
20	902	604	1	18000000	1.939785	34916129	0.5	0.1	30.03331	2164800	37080929

## APPENDIX VI

### Property Value New-Era Awka

	LAND AREA	FIN.AREA	LOC. FAC	PPIN	PLOT LV	LAND VAL	QC	SQRT FLA	BLD VAL	EMV
1	451.28	212.56	0.6	4800000	0.991824	4760756	0.027778	21.24335	5432463	10193219
2	471.09	306.14	0.6	4800000	1.035363	4969741	0.071429	21.70461	14899029	19868769
3	602.67	244.84	0.6	4800000	1.324549	6357837	0.02381	24.54934	7186216	13544053
4	408.35	287.88	0.6	4800000	0.897473	4307868	0.076923	20.20767	12948983	17256851
5	512.84	295.14	0.6	4800000	1.127121	5410180	0.021164	22.64597	5014195	10424375
6	414.29	292.34	0.6	4800000	0.910527	4370532	0.002232	20.35412	383980.2	4754512
7	448.95	234.16	0.6	4800000	0.986703	4736176	0.007813	21.18844	1516063	6252239
8	452.88	366.96	0.6	4800000	0.995341	4777635	0.064286	21.28098	12639193	17416828
9	618.91	215.91	0.6	4800000	1.360242	6529160	0.051429	24.8779	16153844	22683004
10	592.33	358.89	0.6	4800000	1.301824	6248756	0.010045	24.33783	2953998	9202754
11	401.12	260.78	0.6	4800000	0.881582	4231596	0.007353	20.02798	1205044	5436639
12	912.65	234.72	0.6	4800000	2.005824	9627956	0.008371	30.2101	4708036	14335992
13	1167.83	607.68	0.6	4800000	2.566659	12319965	0.016741	34.17353	13629592	25949557
14	632.86	336.82	0.6	4800000	1.390901	6676325	0.00744	25.15671	2416531	9092856
15	604.19	240.6	0.6	4800000	1.32789	6373873	0.009921	24.58028	3005591	9379464
16	565.26	265.21	0.6	4800000	1.24233	5963182	0.07619	23.7752	20888307	26851489
17	314.68	202.18	0.6	4800000	0.691604	3319701	0.05	17.73922	5693822	9013523
18	302.36	218.67	0.6	4800000	0.664527	3189732	0.041667	17.3885	4468949	7658681
19	450.76	219.88	0.6	4800000	0.990681	4755270	0.057143	21.23111	11156043	15911313
20	342.16	226.24	0.6	4800000	0.752	3609600	0.010204	18.49757	1317492	4927092



## APPENDIX VII

### Property Value –Fegge Onitsha

	LAND AREA	FIN.LVG AREA	LOC.FAC	PPIN	plot LV	LAND VAL.	QC	sqrt FLA	BLD VAL	EMV
1	450	292.32	0.7	7000000	0.986842	6907895	0.000283	17.09737	33716.01	6941611
2	450.042	222.76	0.7	7000000	0.986934	6908539	0.163265	14.92515	12918934	19827473
3	450	116.28	0.7	7000000	0.986842	6907895	0.634921	10.78332	18947588	25855483
4	900	262.83	0.7	7000000	1.973684	13815789	0.028011	16.21203	2840672	16656462
5	738.7	189.49	0.7	7000000	1.619956	11339693	1.190476	13.76554	73905560	85245253
6	487.59	242.73	0.7	7000000	1.069276	7484934	0.103896	15.57979	9351072	16836006
7	571.06	207.09	0.7	7000000	1.252325	8766272	0.07619	14.39062	5404012	14170284
8	471.22	226.58	0.7	7000000	1.033377	7233640	0.095238	15.05257	7730721	14964362
9	555.8	255.85	0.7	7000000	1.21886	8532018	0.021769	15.99531	2120253	10652271
10	524.03	249.65	0.7	7000000	1.149189	8044320	0.032653	15.80032	3065478	11109798
11	445.9	252.96	0.7	7000000	0.977851	6844956	0.10582	15.90472	10132647	16977603
12	453.89	282	0.7	7000000	0.995373	6967610	0.002646	16.79286	298166.5	7265776
13	3275	2015.43	0.7	7000000	7.182018	50274123	1.190476	44.89354	2.56E+09	2.61E+09
14	450.19	274.58	0.7	7000000	0.987259	6910811	0.002976	16.57046	322285.7	7233097
15	534.29	242.78	0.7	7000000	1.171689	8201820	0.204082	15.5814	18373853	26575673
16	444.79	281.12	0.7	7000000	0.975417	6827917	0.006614	16.76663	741929.7	7569846
17	1401	578.35	0.7	7000000	3.072368	21506579	0.238095	24.04891	78815889	1.00E+08
18	461	215	0.7	7000000	1.010965	7076754	0.042328	14.66288	3175871	10252625
19	452	202.19	0.7	7000000	0.991228	6938596	0.000215	14.21935	14677.23	6953274
20	450	279	0.7	7000000	0.986842	6907895	0.000305	16.70329	33856.29	6941751

## APPENDIX VIII

### Land Value Model, Building Value Model And Property Value Model

**Land Value Model**, having using low density as the base category in the dummy

. reg landvalue size dumloc dumdens2

Source	SS	df	MS			
Model	8.6367e+16	3	2.8789e+16			
Residual	1.5773e+16	76	2.0754e+14			
Total	1.0214e+17	79	1.2929e+15			

Number of obs =	80
F( 3, 76) =	138.72
Prob > F =	0.0000
R-squared =	0.8456
Adj R-squared =	0.8395
Root MSE =	1.4e+07

landvalue	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
size	27533.28	2001.143	13.76	0.000	23547.66	31518.9
dumloc	-2.02e+07	3311048	-6.11	0.000	-2.68e+07	-1.36e+07
dumdens2	1.02e+07	3785304	2.68	0.009	2619161	1.77e+07
_cons	1337063	3223595	0.41	0.679	-5083283	7757409

### Building Value Model

Source	SS	df	MS			
Model	2.0981e+18	11	1.9074e+17			
Residual	4.3926e+18	68	6.4597e+16			
Total	6.4908e+18	79	8.2161e+16			

Number of obs =	80
F( 11, 68) =	2.95
Prob > F =	0.0030
R-squared =	0.3233
Adj R-squared =	0.2138
Root MSE =	2.5e+08

buildingva~e	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dumloc	2.42e+08	9.69e+07	2.50	0.015	4.88e+07	4.36e+08
dumdens2	-3.33e+08	1.33e+08	-2.50	0.015	-6.00e+08	-6.74e+07
dumlocdens	-3.81e+08	1.56e+08	-2.44	0.017	-6.92e+08	-6.92e+07
finishing	4.61e+07	3.62e+07	1.27	0.207	-2.61e+07	1.18e+08
condition	-3487291	3.46e+07	-0.10	0.920	-7.25e+07	6.56e+07
age	-187107.7	4165082	-0.04	0.964	-8498399	8124184
nature	-6.64e+07	1.66e+08	-0.40	0.690	-3.97e+08	2.64e+08
floor	286191.4	2.88e+07	0.01	0.992	-5.73e+07	5.79e+07
storey	5.50e+07	2.92e+07	1.88	0.064	-3269189	1.13e+08
type	3.27e+07	2.40e+07	1.37	0.177	-1.51e+07	8.06e+07
livingarea	186863.9	61607.1	3.03	0.003	63928.81	309798.9
_cons	-1.47e+08	4.88e+08	-0.30	0.763	-1.12e+09	8.26e+08

Property value model with variables as in building model above

```
. reg propertyvalue dumloc dumdens2 dumlocdens storey livingarea
```

Source	SS	df	MS	Number of obs =	80
Model	2.1364e+18	5	4.2728e+17	F( 5, 74) =	6.81
Residual	4.6439e+18	74	6.2756e+16	Prob > F =	0.0000
Total	6.7803e+18	79	8.5827e+16	R-squared =	0.3151
				Adj R-squared =	0.2688
				Root MSE =	2.5e+08

propertyva~e	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
dumloc	1.43e+08	8.64e+07	1.65	0.103	-2.95e+07	3.15e+08
dumdens2	-1.79e+08	1.03e+08	-1.74	0.085	-3.84e+08	2.56e+07
dumlocdens	-1.82e+08	1.15e+08	-1.58	0.118	-4.11e+08	4.72e+07
storey	5.88e+07	2.66e+07	2.21	0.030	5818389	1.12e+08
livingarea	269477.8	54641.61	4.93	0.000	160602	378353.6
_cons	-1.56e+08	1.13e+08	-1.39	0.170	-3.80e+08	6.82e+07