

# INFLUENCE OF DEVELOPMENT CONTROL STRATEGIES ON LAND USES DURING URBAN PHYSICAL EXPANSION OF CITIES IN SOUTH-SOUTH, NIGERIA

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## ABSTRACT

**Purpose:** The aim of this study was to analyse the effect of development control strategies on urban land uses in cities of the South-South region of Nigeria. This was done through an examination of the development control strategies and the urban land uses in the study area.

**Design/methodology/approach:** The data of the study was obtained through the “rapid urban assessment method” with intensive field sampling and questionnaire administration. The study used 1,536 urban dwellers as its sample size from the cumulative study population of 1,782,817 persons, being projected to 2023 from the National Population Census figures of 1991. The multiple linear regression analysis technique was the statistical tool employed for the testing of the hypothesis. In the study, five variables of development control strategies served as independent variables which were regressed against five variables of land uses being the dependent variables.

**Findings:** From the result of the simultaneous multiple regression, the Model Summary Table provided the R-value (.340) and R-Square value (.115) which explains how much of the variance in the land use variables that is affected by all the five variables of development control strategies. In this case, the value is .115, when expressed as a percentage implies that only 11.5% of the variance in land use is explained by the variables of development control strategies. Of all the five variables of development control strategies, it is only the variable coordination of physical development that made statistically significant unique contribution (-.284 x-.284) to the prediction of landuse variable, and thus, indicates that it uniquely explains 8.07% of the variance in landuse. Therefore the null hypothesis, “there are no significant effects of development control strategies on landuses in the study area”, can be accepted for all other strategies except for coordination of physical development which has significant effect on landuse.

**Research limitations/Implications:** Findings from the study implies that only “coordination of physical development plan” significantly impacts land uses.

**Practical implications:** There should be more stringent enforcement of urban development regulations on all land uses. This will forestall the high level of non-compliance to planning regulations in our cities.

**Originality/value:** The study revealed the effect of development control strategies on urban land uses in cities of the South-South region of Nigeria.

**Keywords:** Development; Development Control Strategies; Problems; South-south Nigeria; Urban.

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## 1. INTRODUCTION

The complexity of city development is dynamic in nature and as such requires coordinated urban planning strategies. Urban planning involves organized legal activities that are directed towards spatial ordering of land uses in order to create a functional and healthy physical environment for living, working and recreating (Keeble, 1969). One of the veritable ways of carrying out urban planning is using development control mechanisms (Olowoporoku *et al.*, 2017). According to Ogundele *et al.* (2011), development control is the process of regulating any building or rebuilding operations in, on and under the land. Development control is a strong and effective tool of urban planning and management. It is a way of checking and regulating unplanned development on land (Nna *et. al.*, 2007). According to Ola (1977) the issue of controlling physical development in urban settlements remains crucial to the health of cities. For instance, the siting of incompatible developments based either on the grounds of social, economic or political interventions is a serious threat, and it is very harmful to the co-existence of human and the other elements of the built environment. Development control, as it were, has always been the pivot on which town planning practitioners perfect the geometric drawing on paper to the ground (Levy, 2017). This is done through the arts and science of planning, which attempt the ordering and arrangement of animate and inanimate objects to engender harmonious balances (Adeye, 2010). It suffices to say that without 'development control', the exercise of town planners as experts of spatial management will amount to nothing. It can therefore be established that development control serves as a framework through which cities will grow and sustain their predetermined shape and form.

The issues of development control in Nigeria are not new in academic discourse. Evidence from several authors such as (Nna, *et. al.*, 2007; Aluko 2011; Eje *et al.*, 2011) revealed that no city in Nigeria can be regarded as a model for good planning from the point of view of employment, liveability, manageability and serviceability. Also studies such as those of Omisore and Akande (2004), Obabori *et al.* (2007), and Ogundele *et al.* (2011) have examined development control in terms of strategies for implementation, procedural and compliance challenges, regulatory and capacity issues that can inform an effective entrenchment of development control instruments. However, it is observed that some of the adopted development control strategies have slightly fared better in some cities in relation to land use types. Most studies appear to have ignored investigations into the extent of compliance of various land uses to urban development control strategies. This research, amongst other things, will attempt to analyze the effect of development control strategies on the land use type compliance level of selected cities in the South-south region of Nigeria.

### 1.1. Objectives of the Study

Given the background above, the specific objectives are:

- i. Examine the development control strategies in the study area.
- ii. Determine the effects of development control strategies on land uses in the study area.

### 1.2. Research Hypotheses

In order to resolve the research questions, the hypothesis below was formulated and tested.

H<sub>0</sub>: There are no significant effects of development control strategies on land uses in the study area.

### 1.3. Study Area

In explaining the historical evolution of the zone from the mainstream of Nigeria's political dynamics, the concept of the South-South region is mostly political in nature. In this scenario, the minorities of the defunct South-Western and the South-Eastern regions, actively canvassed the creation of additional states in order to enlarge their own political space in relation to the majority groups in the other three major regions. It is therefore, a matter of historical significance that the Sani Abacha administration, in its quest to build a modicum of legitimacy for itself decided to cash in on the then attractive expediency of restructuring the country into six geopolitical zones. This resulted to all the six Southern micro minority States being grouped together as the South-South zone.

The South-South region of Nigeria is one of the six geopolitical zones in Nigeria and it comprises six states (Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers). The zone stretches along the Atlantic seabed from the Bight of Benin on the west to the Bight of Bonny on the east. It encloses all of the Niger Delta region, which is the centre of crude oil production in Nigeria. Geographically, the zone is significantly demarcated by the Central African mangroves in the coastal far south, while the major inland eco-regions from east to west is covered by the Cross-Sanaga-Bioko coastal forests; the Cross-Niger transition forests; the Niger Delta swamp forests; and the Nigerian lowland forests. Although the South-South region represents only about 5 per cent (%) of the Nigerian territory, it contributes greatly to the Nigerian economy due to extensive crude oil and natural gas reserves. The region has a population of about 26 million people, which represents about 12% of the total population of Nigeria. (Ukhurebor and Abiodun, 2018; Alagoa *et al.*, 2009).

The people of the South-South region, though are relatively few, have a good knowledge of development control due to their constant interaction with other people from older regions, such as the South-East and South-Western regions. Most sections of the South-South zone were attached to either the South-East or South-Western parts of the nation, which are more infrastructurally developed. It could be assumed from the context of the prevailing background that indigenes of the region are already conversant with the issues of development control.

The South-South region of Nigeria comprises of six states and it is strategically located at the point where the Y-tail of the river Niger joins the Atlantic Ocean within the Gulf of Guinea, which is as shown on the administrative map of the South-South region in Figure 1.

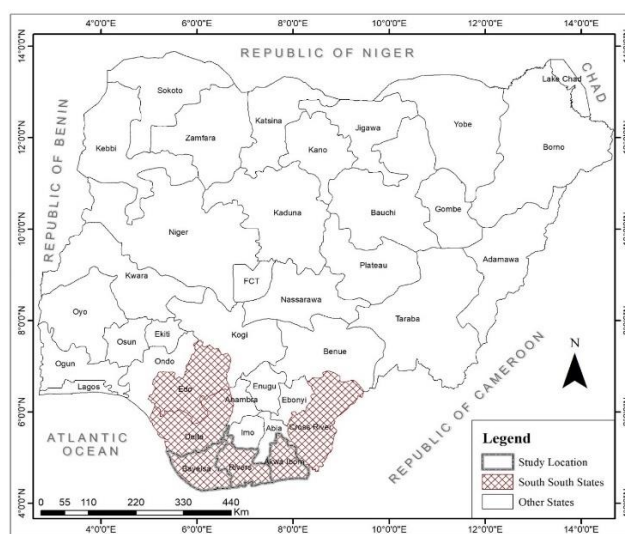


**Figure 1.** Map of Nigeria Showing the South-South region

Source: Office of the Survey General of the Federation (2010)

## 1.4. THEORETICAL REVIEW

There have been several explanations on what drives urbanization and how cities had emerged. Some of the available literatures on the theories of urbanization have ideas that intersect with others; while some came up as a build up from other theories. Some of these theories are highlighted below to further buttress the understanding of why and how the urbanization process needs to be controlled (Bodo, 2019). The direct methods of development control require the use of force or the application of government powers of regulation. It should be mentioned here that development control in the South-South region of Nigeria is to a large extent, an adoption of the direct method of control. Direct method of control employs such techniques as zoning, building control, subdivision control and floating zones performance standard. Zoning is a technique of categorizing or breaking down urban land use into related and interrelated patterns (Chapin and Kaiser, 1965). Zoning has its origin in three major theories; zonal or Concentric Theory, Sector Theory and the Multiple Nuclei Theory. According to (Lawal, 1999), these theories which are based on empirical observations of the development of cities over a period of time, share basic assumptions such as:

- an existence of a system of private land ownership,
- an existence of a commercial, industrial and economic base,
- an existence of an heterogeneous population, and my,
- **an** existence of an economic competition for sites.

## 2. LITERATURE REVIEW

### 2.1. Concept of Urban Expansion

This special concept explores the quantitative and qualitative dimensions of urban expansion. It probes in, to know the when, where and how expansion can and should be contained; and when, where, and how it can and should be managed in an orderly, inclusive, and sustainable manner. It seeks to understand how the urban physical expansion can be undertaken with more caution and how appropriate strategies can be created to contain rapid urban growth (Angel, 2021). When cities grow in their population, economic output and social amenities, they then need more physical space to accommodate them. Such space can be created through densification (vertical expansion) and/or by expanding their footprints into the urban periphery (lateral expansion). Urban expansion in geographic space is often ill-defined and its measurement and projection into the future are controversial. The concept of urban expansion slightly varies in context from urban sprawl. 'Sprawl' is disadvantageous to the surrounding countryside, expensive in terms of infrastructure provision, causes unwarranted waste in energy and resources, and brings about increase in greenhouse gas emissions. But urban expansion has regulatory containments and it is less problematic, though it can result in land and house price inflation, making cities less affordable (Angel, 2021).

The urban expansion principles probe into the appropriate strategies for balancing densification and expansion; and how the appropriate expansion strategies can be effectively implemented. According to Angel (2021) critical analyses of experiences in planning and managing both urban containment and orderly urban expansion are sought by drawing pragmatic lessons, for both slow and rapidly growing cities. These analyses are expected to embrace the many challenges in planning for projected urban expansion in the face of regulatory limitations, local resistance, climate change (e.g. flooding, sea level rise, and mudslides), fiscal and financial constraints, and persistent rural-urban migration. The fundamental principles of the concept of urban expansion are focused on:

- (i) The quantitative measurement of urban expansion by defining, measuring, and projecting it at the municipal, metropolitan, national, and global scale.

(ii) Explanatory models of urban expansion by emphasizing the policy and non-policy (economic, social, and cultural) drivers and consequences of urban expansion.

(iii) Analyses and evaluation of the policies of urban expansion by seeking to contain problems caused by urbanization, evaluations of concrete experiences in containing or slowing down urban expansion, their strengths and limitations, and their utility and appropriateness in cities with varying population growth rates.

(iv) Targeting the preparation for orderly urban expansion through the evaluation of policies for urban expansion. These include critical evaluations of concrete experiences of planned urban expansion such as short, middle, and long-range planning for urban expansion.

The quantitative measurement of urban expansion entails the definition and global measurement of urban extents and their expansion over time essentially using aerial and satellite imagery. Angel *et al.* (2021), for instance, discovered that a global stratified sample of 200 cities was not able to accommodate more than 25% of the population added to these cities between 1990 and 2014. The overflow of the population was accommodated in expanded areas on the urban periphery. However, Lall *et al.* (2021) challenged these estimates and claim that urban expansion is occurring at a much slower rate.

Furthermore, an investigation on the explanatory models of urban expansion that seek to explain variations in the rate of expansion of cities was first carried out by Seto *et al.* (2012). They typically focused on population, income, and transport cost effects, but rarely incorporated the weaker policy and regulatory effects and therefore have limited utility in guiding policy. In parallel, the effects of “business as usual” urban expansion on desirable socio-economic outcomes put forward by Ahfeldt and Pietrostefani, (2018), stated the use of material resources (Hodson *et al.*, 2012), and climate change (Lee and Lee, 2014), have also been the subject of econometric modelling, with improving, but still weak results. A scientific consensus appears quite far away.

On the issue of containment of urban expansion, the Compact City Paradigm is being proposed. Though it seems controversial, the proponents are calling for an end to urban sprawl by introducing the Compact City concept, which they consider as the most acceptable urban planning doctrine (Burton, 2001 and OECD, 2018). Hall (1974) documented the severe house price inflation that followed the introduction of green belts in England and South Korea. Others have documented the failure of containment to halt or slow down outward expansion in rapidly growing cities. Development beyond the greenbelt also results in longer transportation distances, as in Seoul (Han, 2015). The questions of when containment is appropriate and effective and how its adverse consequences can be avoided remain lively and unresolved.

In preparing for orderly urban expansion, urban planners have developed tools such as master plans, for orderly urban expansion (Urbano, 2015). But many master plans have remained on paper, while cities have fast ignored or outgrown them and expanded in a disorderly manner. This has been especially critical in rapidly growing cities, where regulatory enforcement of zoning and land use is often weak. Unplanned expansion is basically due to the undersupply of arterial roads for public transport that connects the urban periphery to the urban job market. There is also an under-supply of public open spaces and the unregulated development of areas of high environmental risk. Lamson-Hall *et al.*, (2018) and Vasconez *et al.*, (2017) have engaged in assisting municipalities in rapidly growing cities in Colombia and Ethiopia in making effective preparations for their expansion by acquiring the rights-of-way for arterial roads and securing areas of high environmental risk before development arrives. A critical challenge is government's proactiveness in planning and land acquisition for public works before development actually occurs.

## 2.2. Effect of Development Control Strategies on Urban Land Uses

In Nigeria urban land uses are classified into various categories. Each category requires special planning conditions. The classification of the major uses relevant to this study include; residential, industrial, institutional, recreational and commercial land uses.

### 2.2.1 Residential Land Use

A residential neighbourhood is a subdivision of a town whose main function is residential and has a well-defined boundary consisting mainly of physical features such as major roads, rivers or other natural man-made features. Residential land use takes up most of the land in urban areas. This is made up of areas where people live. Residential areas are designed to create a habitable environment with the appropriate amenities. There are several factors to consider when planning for a residential neighbourhood. These factors include; level of services available, availability of land, socio-economic status and prevailing land tenure.

Residential areas are made up of organized estates and neighbourhood. Residential areas are further categorized according to development densities. Each density has land size requirements. The density in residential development may be defined by population size, plot coverage and number of dwelling units. The set-back requirements for residential developments are usually smaller because they are located within confined neighbourhoods with only access roads. See Table 3.1 for residential development set-back requirements.

**Table 1:** Standard Setbacks and Plot Coverage for Residential Areas

| Category                 | Maximum<br>Plot Coverage % | Setback (metres) |      |      |
|--------------------------|----------------------------|------------------|------|------|
|                          |                            | Front            | Back | Side |
| Residential              |                            |                  |      |      |
| Special Residential Plot | 40                         | 6.0              | 3.5  | 3.0  |
| Low Density              | 40                         | 6.0              | 3.5  | 3.0  |
| Medium Density           | 45                         | 6.0              | 3.0  | 3.0  |
| High Density             | 55                         | 6.0              | 3.5  | 4.0  |

Source: Development Control Regulations (FCDA) 1996

### 2.2.2 Industrial Land Use

Industry is an entity or organization in which the production, manufacturing, assembly, storage, distribution and market of goods as services is done for the consumption by the public and other users. Industrial land use is devoted to manufacture, storage and distribution of goods and services. This category of land use is classified as light industrial, medium and heavy industrial land uses. Light industrial land use caters for types of industries that are compatible with residential areas. Factors used to determine the categories include type of technology used, products produced and work force.

When planning for industrial land use there is need to consider, the location, site requirement, space needs and the land layout. Goodall (1983) notes that zoning alone does not determine the location of an industry but an industry will locate in a site where profits are maximized and that such a location decision is the outcome of many factors such as accessibility to raw materials, components sources of power, markets and labour, which may be pulling in different direction.

### 2.2.3 Institutional Land Use

This include land set aside for public institutions such as health centres, administration offices, law courts, police stations, prisons, fire stations, town halls, religious institutions, libraries and post offices. These facilities need to be centrally placed, made accessible and should have adequate parking space.

Institutional land uses in Nigeria sometimes violate zoning principles, but they are mostly consistent with set-backs and space requirements. Most of the institutional

developments are sited along major road corridors for easy accessibility and they need reasonable parking spaces. Where they are not properly sited, they obstruct traffic from the freeways.

#### 2.2.4 Recreational Land Use and Open Spaces

These include open spaces deliberately created in the city landscape other than those attached to educational or research institutions. Recreational areas could be public or private. Recreation brings a relaxation of the body and mind. There are social and economic factors that suggest a real need for a generous provision of green spaces within urban environments. They include new urban population, low earnings, population structure and limitations on public expenditure. Recreational facilities in residential neighbourhoods include parks, social halls, community centres, landscaped buffer zones, playgrounds and green areas.

The cardinal design goal in the process of laying out recreational facilities is to achieve functional efficiency and aesthetic. Recreational facilities are expected to attract users and create the required satisfaction for the leisure seekers. Ultimately, the operators must strive to observe all the standard regulations available for the provision of recreational facilities. For the fact that recreational facilities attract many visitors, adequate parking spaces and sufficient set-backs should be provided to reduce traffic obstacles on the abutting streets. Most recreational facilities are carefully sited and are mostly compliant to development control regulations (Obateru, 2009).

#### 2.2.5 Commercial Land Use

Commercial uses are buildings meant for trading purposes and they include airline and insurance offices, hotels, clinics, restaurants, shops, clubs, handicraft and related uses including consultancies and contracting outfits. These are urban corridors are intended to render services to the residents of the built environment (Shingu *et al.* 2020). This land use category is mostly found in town centres and local centres in which retail and wholesale shops, markets, offices, banks and hotels are located. Commercial land use refers to land that is used for a profit-making venture. In this category profit motive is paramount.

In every commercial land use, parking facilities are required and they should be commensurate to the proportion of commercial activities created. That is why commercial centres require sufficient set-back from the centre of the abutting road to accommodate customers as well as standard kiosks and hawkers. Planning for kiosks and hawking needs to be considered as a special feature. This seems to be lacking in most cities in the South-South region of Nigeria. They should preferably be considered and be confined to markets and bus stops. Commercial activities are located towards positions of greatest accessibility since such locations facilitate their transactions (Goodall 1983).

**Table 2:** Standards for Setbacks, Percentage and Height Requirements for Commercial land uses

| Setback (Meters) |      |      | Plot Coverage |         | Height of Floors |         |
|------------------|------|------|---------------|---------|------------------|---------|
| Front            | Back | Side | Minimum       | Maximum | Minimum          | Maximum |
| 6                | 4    | 4    | 40            | 60      | 4                | 6       |

Source: Development Control Regulations (FCDA) 1996

Like other land use types, set-backs for commercial buildings and structures must be provided from the centre lines of the abutting streets. See Table 3.2 for set-back requirements for commercial developments in Nigeria. According to Duruzoechi (2001), sufficient set-backs are required to prevent encroachment on the right of way of vehicles, affording adequate spaces for parking of vehicles and future road expansion, minimizing the effects of dust and noise, and ensuring a high degree of safety.

### 3. METHODOLOGY

A quantitative survey was used for this study. Questionnaire was one of the basic instruments used for data collection in this study and it involved a list of questions designed to elicit information from the respondents. The target respondents were developers in Port Harcourt, Uyo and Yenagoa cities. The use of questionnaires in research situation is essential since it accommodates the peculiar diversity of respondents' opinions and ideas concerning the phenomenon under study.

The questionnaire was designed using a five-point likert scale that range from strongly agree (5) to strongly disagree (1). A justification for using structured questions according to Mugenda and Mugenda (2003) is that they are easier to analyze since they are in a readily usable form and easier to administer because the items are followed by alternative answers. The answers sought were mainly to determine the strategies of urban development control activities in our cities, the prevalent urban development problems and the developers' perception of these factors. The questions were further probed to know the socio-economic status of the respondents.

For the purpose of this study, the data was also collected from primary sources. The primary data was collected through the following methods: Direct Observation and Questionnaire. The sample population includes all the inhabitants in the study area, that is, Port Harcourt, Uyo and Yenagoa cities. This population includes developers and professionals in the built-industry who are heads of household.

**Table 3:** Allocation of copies of the questionnaire

| S/N | Community     | Population | No. of Questionnaire |
|-----|---------------|------------|----------------------|
| 1.  | Yenagoa       | 140,345    | 121                  |
| 2.  | Uyo           | 512,519    | 442                  |
| 3.  | Port Harcourt | 1,129,953  | 973                  |
|     | Total         | 1,782,817  | 1536                 |

Source: Projections from 1991 Census

The study results were compiled in a data base using the Statistical Package for Social Sciences (SPSS). The analyses were carried out using SPSS. Two types of statistical tools were employed in this study. The statistical technique used is the multiple linear regression analysis.

### 4. PRESENTATION AND DISCUSSION OF RESULTS

The study took note of the predominant landuses in various study units and the extent of their compliance to the extant development control measures. Overall, most of the study units are dominated by residential accommodation and their level of compliance to development control measures are low. It was realized in the course of the study that, industrial and institutional landuses were more compliant to established development control strategies, although they were not rampant compared to residential landuses.

In measuring the level of compliance to the development control strategies, the results of their application in the first neighbourhood in Port Harcourt, is as shown in Table 4. It indicates that land uses were more responsive to development control activities. This is followed by the establishment of local planning authorities and physical development plans. It further indicated that strategies like coordination of physical development and physical planning research have very low impact on land use compliance.

**Table 4:** Strategies of development control as measured in first Neighbourhood in Port Harcourt

| S/N | Strategies of development control           | Res | SA | A | N | D | SD | Sum | Mean       | Rank | Remark |
|-----|---------------------------------------------|-----|----|---|---|---|----|-----|------------|------|--------|
| A   | Coordination of physical development        | 7   | 1  | 1 | 2 | 2 | 1  | 20  | <b>2.8</b> | 4    | VLS    |
| B   | Establishment of local planning authorities | 7   | 1  | 2 | 2 | 2 | 0  | 23  | <b>3.3</b> | 2    | LS     |
| C   | Preparation of physical development plans   | 7   | 1  | 2 | 2 | 1 | 1  | 22  | <b>3.1</b> | 3    | LS     |
| D   | Development control activities              | 7   | 2  | 2 | 1 | 2 | 0  | 25  | <b>3.6</b> | 1    | HS     |
| E   | Physical planning research                  | 7   | 1  | 1 | 1 | 1 | 3  | 17  | <b>2.4</b> | 5    | VLS    |

*VLS= very low significance, LS= low significance, HS= high significance, VHS= very high significance*

In addition, an evaluation of the overall compliance level of land uses to development control strategies in the city of Port Harcourt was made in accordance with the details measured in the first neighbourhood in Port Harcourt. This general overview is succinctly captured in Table 5. Apart from the physical planning research that made a very low effect in influencing the land use compliance pattern, all the other strategies significantly impacted the land use pattern in Port Harcourt.

**Table 5:** Strategies of development control and land uses in Study Area

| Neighbourhoods       | A   | B   | C   | D   | E   | Landuse |
|----------------------|-----|-----|-----|-----|-----|---------|
| <b>Port Harcourt</b> |     |     |     |     |     |         |
| Rumukurusi I         | 2.8 | 3.3 | 3.1 | 3.6 | 2.4 | 1       |
| Rumukurusi II        | 1.4 | 2.5 | 3.3 | 1.1 | 2.6 | 1       |
| Rumukurusi III       | 1.6 | 2.2 | 3.8 | 2.3 | 3.6 | 4       |
| Rumukurusi IV        | 2.7 | 3.2 | 2.5 | 1.9 | 2.3 | 2       |
| Mbori                | 3.4 | 4.1 | 4.3 | 2.6 | 3.7 | 1       |
| Rumukurusi           |     |     |     |     |     |         |
| Rumuodara            | 3.5 | 3.7 | 2.9 | 2.9 | 2.6 | 1       |
| Eliowhani            | 3.3 | 4.2 | 3.4 | 4.1 | 4.1 | 1       |
| Rumuokwuta           | 3.6 | 4.2 | 4.3 | 3.4 | 2.4 | 2       |
| Rumuobiakani         | 3.7 | 4.2 | 4.1 | 4.5 | 3.6 | 2       |
| Alekahia             | 3.9 | 3.5 | 4.2 | 4.1 | 4.4 | 1       |
| Ogbunabali           | 4.2 | 4.1 | 4.9 | 2.9 | 3.3 | 2       |
| Old GRA              | 2.8 | 3.4 | 4.3 | 3.4 | 3.2 | 1       |
| Eligbolo             | 1.5 | 3.5 | 3.1 | 2.6 | 3.1 | 1       |
| Rumuodomaya          | 3.3 | 3.1 | 2.9 | 3.1 | 3.3 | 1       |
| Eneka                | 4.5 | 3.5 | 4.3 | 2.4 | 2.3 | 1       |
| Orominike            | 3.9 | 2.5 | 4.1 | 2.7 | 3.1 | 1       |
| Orogbum              | 4.5 | 3.4 | 1.8 | 4.2 | 4.5 | 1       |
| Rumuomasi            | 4.3 | 4.0 | 3.5 | 3.0 | 4.5 | 1       |
| Mkgbuoba             | 4.6 | 3.0 | 3.5 | 4.0 | 4.5 | 4       |
| Rumuepirikom         | 4.4 | 3.6 | 4.1 | 3.6 | 4.5 | 1       |

| Neighbourhoods       | A   | B   | C   | D   | E   | Landuse |
|----------------------|-----|-----|-----|-----|-----|---------|
| <b>Port Harcourt</b> |     |     |     |     |     |         |
| Rumuolumeni          | 2.8 | 3.4 | 4.1 | 4.4 | 4.1 | 4       |
| Bori Camp            | 3.9 | 4.1 | 4.3 | 4.2 | 4.4 | 4       |
| Woji                 | 4.2 | 4.2 | 4.2 | 2.8 | 4.1 | 1       |
| Town                 | 3.5 | 4.1 | 4.2 | 3.4 | 4.2 | 1       |
| Rumuola              | 3.6 | 4.1 | 4.4 | 4.1 | 4.1 | 2       |
| Rumueme              | 2.4 | 4.7 | 4.5 | 4.2 | 3.8 | 4       |
| Diobu                | 4.2 | 3.3 | 4.4 | 4.2 | 4.2 | 1       |
| Abuloma              | 4.5 | 3.5 | 4.5 | 4.5 | 4.2 | 1       |
| Trans-Amadi          | 4.4 | 4.4 | 4.4 | 4.1 | 4.6 | 3       |
| Elelenwa             | 4.4 | 3.5 | 4.5 | 4.2 | 4.2 | 1       |
| <b>Uyo</b>           |     |     |     |     |     |         |
| Ikot Akpan Oku       | 4.1 | 4.2 | 3.4 | 4.4 | 3.8 | 1       |
| Aka Offot            | 4.2 | 4.1 | 4.2 | 3.7 | 4.1 | 1       |
| Ikot Ntuen Oku       | 4.4 | 4.1 | 4.2 | 4.2 | 4.3 | 2       |
| Aka Offot II         | 4.6 | 4.1 | 4.4 | 3.6 | 4.1 | 1       |
| Eniong Offot II      | 4.2 | 3.7 | 4.2 | 4.3 | 4.1 | 1       |
| Ifa Ikot Okpon       | 4.6 | 4.1 | 4.1 | 4.4 | 4.1 | 1       |
| Itiam Etoi II        | 4.3 | 4.4 | 4.4 | 3.6 | 3.9 | 1       |
| Mbak Akpan           | 4.1 | 4.2 | 3.9 | 3.8 | 4.0 | 1       |
| Itiam Ikot Ebia      | 4.2 | 4.4 | 3.8 | 4.5 | 3.6 | 1       |
| Afaha Atai           | 4.2 | 4.4 | 3.8 | 4.1 | 3.4 | 1       |
| Ikot Okubo Offot     | 2.4 | 4.1 | 3.9 | 4.2 | 4.2 | 1       |
| Anua Obio            | 4.1 | 2.8 | 4.1 | 4.4 | 4.2 | 2       |
| Mbierebe Obio        | 3.9 | 4.2 | 4.3 | 4.2 | 4.4 | 2       |
| Ikot Akpan Abia      | 4.1 | 4.1 | 4.6 | 4.5 | 4.5 | 4       |
| Ikot Ukpong          | 3.9 | 3.8 | 4.4 | 3.8 | 4.0 | 1       |
| Afaha Idoro          | 4.2 | 4.4 | 4.7 | 3.9 | 4.2 | 2       |
| Afaha Offot I        | 4.2 | 4.7 | 4.3 | 4.1 | 4.2 | 1       |
| Ikot Ibom Itiam      | 4.3 | 4.2 | 3.8 | 4.1 | 4.4 | 1       |
| Atam Offot           | 4.5 | 4.1 | 4.1 | 4.1 | 4.3 | 1       |
| Efiat Offot II       | 4.2 | 4.2 | 4.2 | 4.3 | 4.2 | 1       |
| <b>Yenagoa</b>       |     |     |     |     |     |         |
| Igbogene             | 2.4 | 2.6 | 4.6 | 4.1 | 4.1 | 1       |
| Akenfa               | 4.2 | 4.1 | 4.5 | 4.1 | 4.2 | 1       |
| Agudama              | 4.1 | 4.0 | 4.4 | 2.4 | 4.2 | 4       |
| Edepie               | 4.2 | 4.2 | 4.4 | 3.6 | 4.1 | 1       |
| Okutukutu            | 3.8 | 3.8 | 4.4 | 3.8 | 3.8 | 1       |
| Opolo                | 4.3 | 4.1 | 4.4 | 3.7 | 2.8 | 2       |
| Biogbolo             | 4.1 | 4.0 | 4.3 | 2.8 | 4.1 | 1       |
| Yenizue              | 4.2 | 4.2 | 4.5 | 3.5 | 3.6 | 1       |
| Kpansia              | 4.3 | 4.2 | 4.5 | 3.6 | 4.1 | 2       |
| Okaka                | 4.2 | 4.4 | 4.2 | 3.8 | 4.2 | 1       |
| Amarata              | 4.2 | 4.5 | 4.8 | 4.3 | 4.6 | 1       |
| Onopa                | 4.2 | 4.2 | 4.7 | 4.2 | 4.3 | 4       |
| Ovom                 | 2.4 | 4.2 | 3.3 | 3.4 | 4.0 | 4       |
| Yenagoa              | 4.2 | 4.3 | 4.1 | 4.3 | 4.3 | 1       |
| Swali                | 4.0 | 3.5 | 4.4 | 4.2 | 3.1 | 2       |
| Azikoro              | 4.1 | 4.3 | 4.1 | 4.2 | 4.3 | 2       |

Residential=1, Commercial=2, Industrial=3, Institutional=4, Recreational=5

In the case of Uyo, it was realized that all the identified strategies had high significance in attempting to influence the land use pattern in the city. But in some neighbourhoods, the presence of physical development plans was considered as the most influential strategy in guiding the land uses. Furthermore, in Yenagoa, the presence of physical development plans and development control activities are considered as the most

influential strategies in determining land use compliance. The land use compliance pattern in Yenagoa is similar to those applied in Port Harcourt and Uyo.

$H_0$ : There are no significant effects of development control strategies on land uses in the study area.

To test this hypothesis, the five variables of development control strategies served as independent variables and were regressed against the land use variables which served as the dependent variable. From the result of the simultaneous multiple regression, the Model Summary Table (Table 6) provided the R-value (.340) and R-Square value (.115) which explains how much of the variance in the land use variable that is explained by all the five variables of development control strategies. In this case, the value is .115 expressed as a percentage implies that only 11.5% of the variance in land use explained by the variables of development control strategies. This is quite a very weak result and the statistical significance of the result as shown in the ANOVA Table (Table 7) implies that the result is statistically insignificant.

**Table 6:** Model Summary<sup>b</sup>

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |               |
| 1     | .340 <sup>a</sup> | .115     | .042              | 1.025                      | .115              | 1.566    | 5   | 60  | .184          | 2.136         |

a. Predictors: (Constant), e, c, b, a, d; b. Dependent Variable: Landuse

**Table 7:** ANOVA<sup>a</sup>

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 8.226          | 5  | 1.645       | 1.566 | .184 <sup>b</sup> |
|       | Residual   | 63.047         | 60 | 1.051       |       |                   |
|       | Total      | 71.273         | 65 |             |       |                   |

a. Predictors: (Constant), e, c, b, a, d; b. Dependent Variable: Landuse

**Table 8:** Coefficients<sup>a</sup>

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | 95.0% Confidence Interval for B |             | Correlations |         |       |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|---------------------------------|-------------|--------------|---------|-------|
|       |            | B                           | Std. Error |                           |        |      | Lower Bound                     | Upper Bound | Zero-order   | Partial | Part  |
| 1     | (Constant) | .617                        | 1.189      |                           | .518   | .606 | -1.763                          | 2.996       |              |         |       |
|       | a          | -.467                       | .199       | -.345                     | -2.339 | .023 | -.865                           | -.068       | -.186        | -.289   | -.284 |
|       | b          | -.016                       | .271       | -.008                     | -.060  | .953 | -.559                           | .526        | -.017        | -.008   | -.007 |
|       | c          | .300                        | .248       | .162                      | 1.208  | .232 | -.197                           | .797        | .119         | .154    | .147  |
|       | d          | .053                        | .231       | .037                      | .232   | .817 | -.408                           | .515        | .051         | .030    | .028  |
|       | e          | .372                        | .265       | .216                      | 1.404  | .165 | -.158                           | .901        | .139         | .178    | .170  |

a=Coordination of physical development, b= Establishment of local planning authorities, c= Preparation of physical development plans, d= Development control activities, e= Physical planning research

The evaluation of each of the independent variables to know which of the variables made meaningful contribution to the prediction of the dependent variable was carried out. From the Coefficients Table (Table 8) using the **Beta coefficient values**, the largest beta coefficient is -.345, which is for coordination of physical development (a). This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The physical planning research (e) had a Beta coefficient value of .216 as the second most important variable while the establishment of local planning authorities (b) had the lowest (-.008) contribution, indicating that it made the least of all contribution. Of all the five variables of development control strategies, it is only the variable coordination of physical development that made statistically significant unique contribution (-.284 x-.284) to the prediction of land use variable, and thus, indicates that it uniquely explains **8.07%** of the

variance in land use. Therefore, the null hypothesis which states that there are no significant effects of development control strategies on land uses in the study area can be accepted for all other strategies except for coordination of physical development which has significant effect on land use.

## 5. CONCLUSION AND RECOMMENDATIONS

The result of this study indicate that retention of control is the most important factor affecting lease versus own decision for real estates of major petrol stations and restaurants in South-South, Nigeria. Study participants also have high perception of location, local town planning laws and company's credit rating as significant factors determining lease or own decision on real estates. Based on the findings of the study, it was concluded that in addition to the desire to retain control, a wide range of other factors significantly affect the lease versus own decision of corporate organizations on real estates. This paper has reported the outcome of a study on two selected corporate organizations with penchant for leasing real estate facilities for their operations. Therefore, caution should be taken when generalizing the results for other corporate organizations that may have a different perception about leasing. It is recommended that corporate organizations should not base their lease or own decision for real estates on a single factor but should consider a several potential factors.

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