



## **Determinants of the Location of Commercial Land Use in Urban Areas of Akwa Ibom State, Nigeria**

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### **ABSTRACT**

The study explored the determinants of the location of commercial land use in Akwa Ibom State, focusing on selected urban areas (Uyo, Ikot Ekpene and Eket), comprising a total of 76 communities (28 in Uyo, 21 in Eket, and 27 in Ikot Ekpene). Drawing on a comprehensive survey-based approach, data were collected from 76 communities across the three urban areas. Factor analysis revealed two main categories of commercial land use: one centered on automobile and entertainment/sales activities, and the other focused on production and small-scale businesses. Regression and factor analyses were used to examine how location factors influenced commercial activity, identifying seven key location factors, though the relationship between these factors and land use distribution was found to be weak. In conclusion, the study shows that location factors have a limited effect on the distribution of commercial land use, including automobile services, entertainment, and small businesses. The seven identified factors accounted for only 5.9% and 15.2% of the variation in these sectors. Although some factors like protection policies and market synergy had greater influence, none were statistically significant. This suggests that business location is more influenced by a complex of factors such as networks, economic policies, and market conditions, rather than geographic location alone. Based on these findings it is recommended that more complex influences such as economic policies, market conditions, and business networks be investigated.

**Keywords:** Commercial Land Use, Factors of Location, Urban.

### **1.0 Introduction**

Commercial land use refers to the allocation of land for activities that involve the exchange of goods and services, such as retail, office spaces, markets, hotels, and other businesses. It encompasses spaces where economic transactions occur, serving both consumers and businesses. Adeniyi (1997) defined commercial land use to embrace general market, special market, banks, filling stations, supermarkets, and hotels among others. Turkey and Whilst (2017) viewed commercial land use as a plot of land assigned for commercial purposes; and that "commercial" means the land is used for businesses, manufacturing plants, warehousing, parking lots and even profit generating residences.

The location of commercial land use is pivotal in shaping both the physical layout and the economic vitality of urban areas in Nigeria. As the urban areas continue to experience rapid growth, the demand for commercial spaces has surged, driven by the city's expanding population and increasing economic activities. Commercial land use not only supports the local economy through retail, office spaces, and small-scale enterprises, also impacts the broader urban structure by influencing traffic flow, land values, and infrastructure development (Agbola and Kasim, 2017). Understanding the key determinants that guide where businesses choose to establish themselves is essential for informed urban planning and sustainable development. Factors such as accessibility to transportation networks, the availability and cost of land, existing infrastructure, and government zoning policies are critical in shaping commercial land use patterns (Olujimi and Ayeni, 2013). These variables interact in complex and dynamic ways, influencing how Uyo urban landscape evolves in response to both market demands and policy interventions. By examining these determinants, urban planners can develop strategies that not only manage the city's growth but also promote balanced and equitable development. Such insights are vital to ensuring that commercial activities are distributed in ways that support economic development while minimizing negative impacts like congestion and unplanned urban sprawl.

Moreover, government zoning regulations and urban planning policies can either encourage or limit the growth of commercial areas within the city (Oyesiku, 2014). In Uyo, Eket and Ikot Ekpene urban areas, these determinants interact in complex ways, reflecting the cities' evolving economic landscape and the pressures of urbanization. This study aims to investigate the determinants that influence the location of commercial land use in the three major urban areas of Akwa Ibom State, Uyo, Eket and Ikot Ekpene for the purpose of providing insights into how urban planning can better accommodate urban growth while ensuring equitable development.

## 2.0 Study Area

Uyo is the capital city of Akwa Ibom State. It serves as both the state and local government area administrative headquarters and the most developed urban area. Geographically, it lies at 5.0333° N latitude and 7.9333° E longitude within the tropical rainforest zone (see Figure 1). It is about 75 kilometres from the Atlantic Ocean and almost equidistant to all parts of the state. The terrain of Uyo is flat, with gentle slopes and valleys, and has an average elevation between 50 to 100 metres above sea level, which enables the spread of physical development to different direction.

Eket is one of the major urban areas in Akwa Ibom State. It is one of the 31 local government area headquarters of the state. It is located at 4.65° N latitude and 7.93° E longitude (see Figure 1). Eket had a population density of 1,241 people per square kilometre in 2013. It plays a key role in the local economy as an administrative and operational base for crude oil and gas exploitation.

Ikot Ekpene, also called "Raffia city," is a major urban centre in Akwa Ibom State. Positioned at 5.17° N latitude and 7.72° E longitude (see Figure 1). It is historically significant for being a site of British experiments in local self-governance in 1951. As the political and cultural capital of the Annang ethnic group, Ikot Ekpene is a major trade centre, known for its agricultural products and raffia handicrafts, as well as palm oil exports.



Figure 1: Map of the three Urban area of the study in Akwa Ibom State

Source: Office of the State Surveyor General, Akwa Ibom State (2023)

## 3.0 Research Problem

Commercial land use plays a pivotal role in shaping the physical layout and economic vitality of Nigerian urban centres, by allocating land for activities involving the exchange of goods and services. Commercial land use fosters economic transactions between consumers and businesses. This encompasses various spaces, including retail outlets, office complexes, marketplaces, hospitality establishments, and other business entities.

Despite its critical role, the location of commercial activities in Uyo, Eket, and Ikot Ekpene urban areas remains poorly understood. Rapid urban growth and escalating demand for commercial spaces have led to uncoordinated development, congestion, and unplanned urban sprawl. The complex interplay between factors such as accessibility, land availability, infrastructure, and government zoning policies has yielded inefficient commercial land use allocation. This inefficiency hinders sustainable development and economic growth in the region. To address this challenge, it is essential to investigate the determinants of commercial land use allocation in Uyo, Eket, and Ikot Ekpene urban areas. By examining the complex location factors underlying commercial land use, this study aims to provide insights into the inefficient allocation of commercial land use and its implications for sustainable development and economic growth. In view of the above goal, the following hypothesis has been formulated for test: There is no significant influence of location factors on commercial land use activities.

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#### 4.0 Review of Literature

The location of commercial activities in urban areas is a critical factor in determining the success of businesses as influencing factors such as accessibility, visibility, and appeal to customers, investors, and entrepreneurs are crucial. A comprehensive understanding of the determinants of the location of commercial activities is essential for policymakers, urban planners, and business stakeholders to make informed decisions.

Economic factors play a pivotal role in shaping commercial area locations. Market proximity, accessibility, and land costs are significant considerations for businesses (Porter, 2000; Roberts, 2019). Research has shown that businesses thrive when situated near their markets (customers and suppliers), which is why commercial activities are often strategically positioned close to residential neighborhoods, transportation hubs, and major thoroughfares (Brown, 1999). The premium placed on prime locations in Central Business Districts (CBDs) or high-traffic areas reflects the economic advantages of being situated in bustling commercial hubs. Social factors, including demographic characteristics, lifestyle preferences, and cultural norms, significantly impact commercial area locations. Studies have demonstrated that affluent neighborhoods tend to attract luxury retail stores and upscale dining establishments, while areas with younger demographics host cafes, entertainment venues, and trendy boutiques (Smith, 2021). Understanding a community's social dynamics enables businesses to tailor their offerings and marketing strategies effectively, enhancing their competitiveness.

The spatial configuration of commercial areas is influenced by factors such as road network accessibility, proximity to transportation hubs, power sources, and water bodies (Fox, 2017; Smith, 2021). Businesses prioritize local transport links, especially main roads and motorways, to ensure easy access and visibility. Adequate infrastructure, including power and water supplies; and good road connections are essential for businesses (Business Insights, 2021). Moreover, proximity to CBDs, land values, and security are critical considerations in determining commercial area locations. Non-geographical factors, such as government policies, historical significance, and commercial inertia, have become increasingly significant in determining commercial locations. Government intervention in planning industrial distribution and managing pollution has been identified as a critical location factor for commercial land use (Porter, 1998). Commercial inertia, or geographical inertia, refers to the tendency of industries to persist in their original locations despite changing conditions (Ogunleye *et al.*, 2011). This phenomenon is evident in Nigerian cities, where business clusters generate mutual benefits and drive regional growth.

In the context of Nigerian cities, research has highlighted the importance of factors such as proximity to CBDs, land values, and security in determining commercial area locations (Nwosu and Kalu, 2019). The success of technology startups in Yaba, known as "Yabacon Valley," exemplifies the self-reinforcing cycle of cumulative causation, where successful businesses attract further investments and foster a thriving economic environment. Furthermore, the interplay between transport infrastructure development and commercial land use patterns is complex and reciprocal, with railway development significantly influencing the location and growth of commercial areas. In conclusion, the determinants of commercial area location are multifaceted, encompassing economic, social, spatial, and infrastructural factors. Understanding these factors is crucial for policymakers, urban planners, and business stakeholders to make informed decisions that enhance the competitiveness, increase land value and sustainability of commercial areas.

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#### 5.0 Research Methods

The study area has a total of 76 communities. A skipping range sampling technique was employed in questionnaire administration in each community while the same method was adopted for the administration of checklist so as to ascertain the numbers and types of commercial land uses in the study. However, based on the study 1103 copies of the questionnaire were administered across the 76 communities of the study area to gather primary data. A map of the study area was produced via GIS to show the locations of various land uses as shown in Figures 2, 3 and 4.

Secondary data were gathered from textbooks materials, journals, magazines and newspapers; and utilized in the study. The population of the study area was obtained from the National Population Commission (NPC) and the hard copy maps were obtained from the Ministry of Lands and Housing, Akwa Ibom State.

Factor analysis and regression techniques were used to examine how location factors influenced commercial activities.

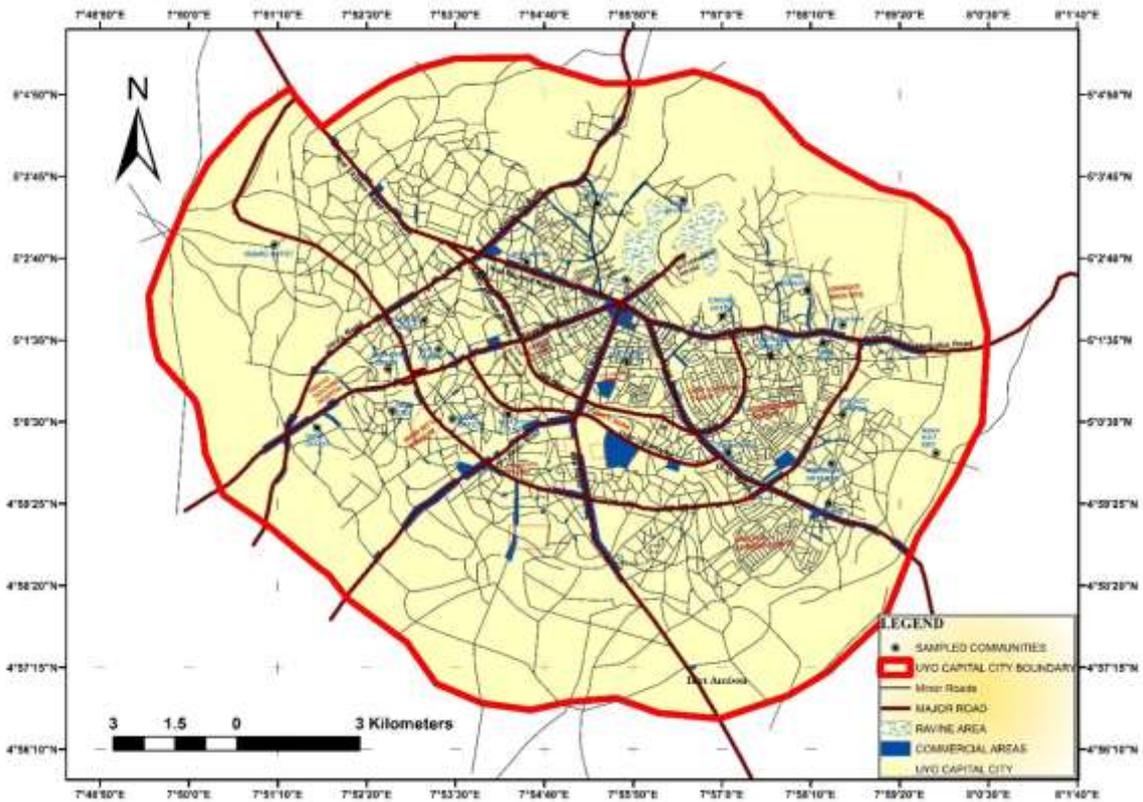


Figure 2: Map of Uyo showing the commercial land uses

Source: Authors' field work (2024)

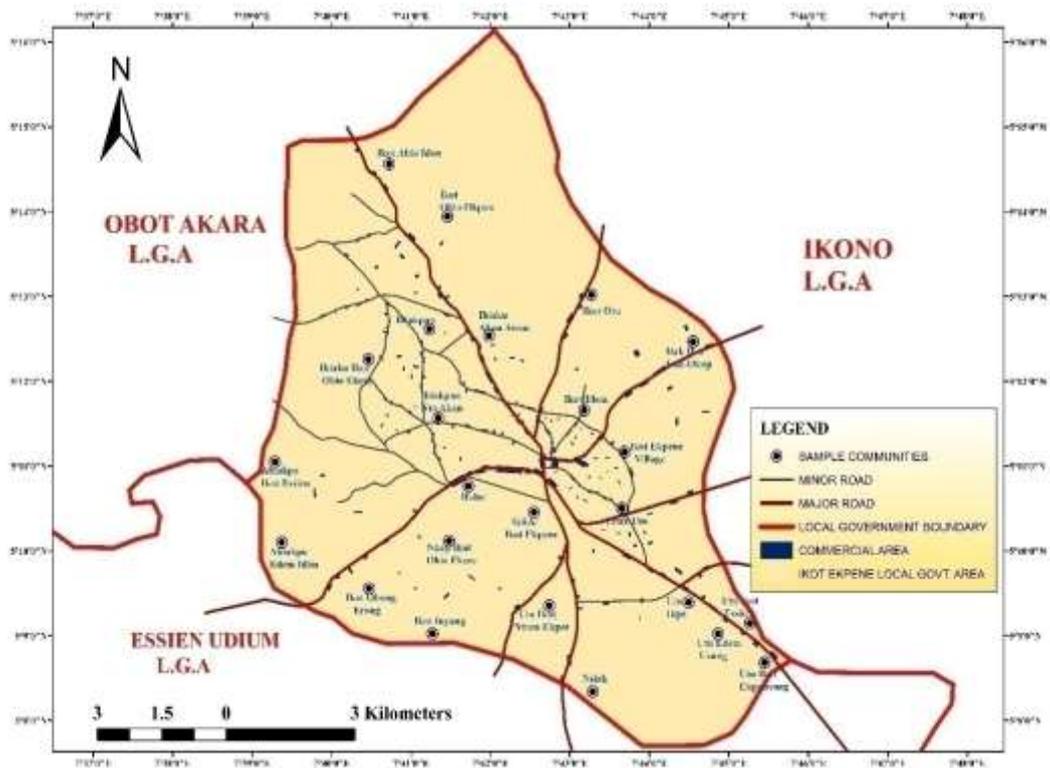


Figure 3: Map of Ikot Ekpene showing the commercial land uses

Source: Authors' field work (2024)

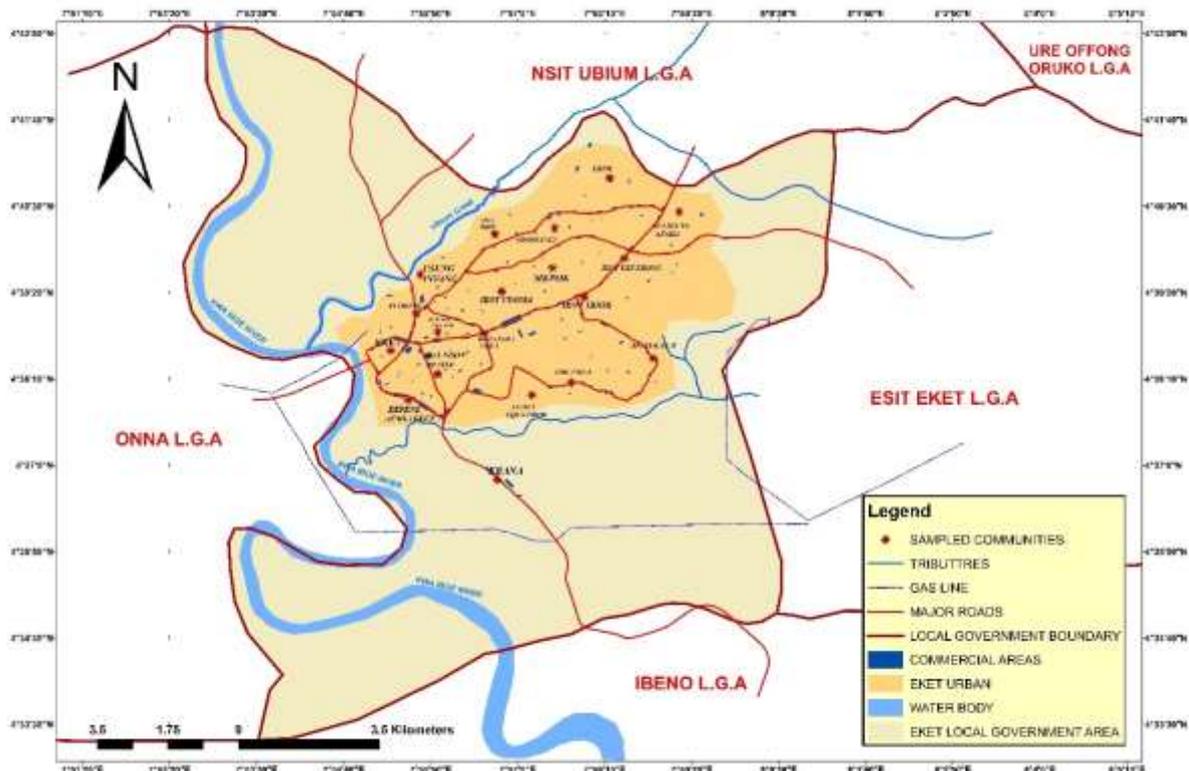


Figure 4: Map of Eket showing the commercial land uses

Source: Authors' field work (2024)

## 6.0 Presentation of Data, Analysis and Results

Data on 21 original variables (accessibility, security, rent, skill base, land ownership, potential for growth, proximity to market, demography, power, transport, water, terrain, land value, proximity to central business district, cumulative causation, non-geographical factors, government policies, commercial inertia, good management, banking facilities, insurance of location) were utilized for factor analysis. These are shown in Table 1. These variables were measured using a 5-point Likert scale of 1 for strongly disagree to 5 for strongly agree. Factor and regression analyses were also used to analyze the data in order to isolate the factors influencing the location of commercial land uses.



3	Anua Obio Offot	4.1	2.3	4.1	3.0	2.6	3.1	4.3	4.1	3.7	3.8	2.3	2.1	3.4	2.4	4.1	3.6	2.3	2.7	2
4	Atan Offot	2.2	1.8	4.6	4	2.3	4.2	4.6	4.8	3.2	4.1	2.6	4.4	3.7	4.1	2.1	2.8	4.6	2.2	2
5	Effiat Offot	3.4	2.3	3.5	3	2.9	3.5	3	3.9	3.4	2.9	2.5	2.5	4	2.9	2.7	3.4	3	2.9	2
6	Eniong Offot	2.4	2.4	3.4	3	3.4	3.1	3.3	3.8	2.7	3	2.6	2.4	3.1	3	2	2.5	2.6	3.3	2
7	Ibiaku Offot	3.3	3.3	3.5	3	4	3.5	3.5	4	3	2.8	3.8	2.5	3.3	3.3	3	3	3.3	3.5	4
8	Ikot Anyang	3	3.5	3	4	2.5	3	3	3	3	3	3.5	4	3.5	3	3.5	3	3	3	3
9	Ikot Ekpe Offot	3	2	4	3	3	4	3	3	4	3	4	3	3	2	4	4	4	4	2
10	Ikot Ntuen Offot	4	5	5	3	4	4	4	4	3	3	2	3	3	2	3	2	1	3	3
11	Ikot Okubo	4.6	2.9	3.3	3	4.6	4.3	4	4.3	3.9	2.7	3.3	1.9	1.9	2	4.1	3.3	3.9	4.6	2
12	Itiam Etoi	4.2	2.7	3.3	3	1.3	3.9	3.4	4.6	3.2	4	3.3	3	3.7	2.3	3.8	3.5	3.4	1.5	1
13	Mbaiobong Anyanya	3.2	3.4	4	3	2.2	2.4	3.8	4.2	1.8	2	3.2	2	3.6	3.2	2	2.8	4	3.8	4
14	Mbaiobong Etoi	4.2	3.2	4.8	3	5	4	3.8	4.4	3.2	4	3.2	2.6	2.8	3.6	4	3.6	4.2	3.4	3
15	Ikot Akpan Oku	2.3	3	3.9	3	2.1	2.9	2.6	3	3.1	2.6	3.5	3.1	2.9	2.3	2.4	2.6	3.4	2.8	2
16	Mbiaobong Ikot-Antem	3	2.8	4.5	3	3	2.5	3	3	3.5	3	3.5	3.3	4.5	2.8	2.8	2.8	3.5	3.8	3
17	Mbiabong Ikot Akpan	4	3.5	4	4	3	4	4	4	3.5	3	4	3.5	2.5	2.5	3.5	3.5	3	3	3
18	Ifa Ikot Okpon	1.6	3.8	2.2	2	3	2	1.8	3.2	2.8	2	4.2	1.8	2.4	4.4	1.6	1.8	1.8	2.6	2
19	Nsukara Offot	2.8	3.4	3.4	4	3.5	3.1	3.5	4	3.3	3.4	3.9	3	3.4	3.8	2.9	3.9	3.5	3.6	3
20	Obio Etoi	2.8	3	3.4	4	2	3.6	2.6	4	3.6	3.6	3.2	2.6	4	2.6	2.6	3.4	2.8	2.6	2
21	Obio Offot	4.8	2.7	4.5	3	4.2	3.5	4.3	4.2	3.7	2.8	3.7	1.8	3.7	2.8	3.2	2.7	4.8	4.5	1
22	Use Offot	4	3	4.1	3	4.5	3.3	3.6	2.2	3.3	3.7	3.5	3.3	3.2	3.1	2.3	3.3	3.4	2.2	2
23	Uyo Village	4	2.3	3	4	2.1	3.8	3.9	3.9	3.8	3.8	2.4	3.7	3.8	2.3	3.8	3.9	2.4	2.4	2
24	Ekpri Nsukara	4.8	1.8	4.5	3	2.8	4	4.3	4.5	3.8	2.8	2.5	2.8	4.3	2	4	3	1.5	2.5	1
25	Afaha Oku	4.2	2.1	3.9	3	2	4	3.4	3.4	3.4	3.4	3	2.5	3.7	2.5	2.9	3.8	1.9	2.1	1
26	Mbak Akpan	4.5	4.5	4	3	3	2.5	4.5	5	3.5	4.5	1.5	2.5	3.5	2	3.5	4	3.5	2.5	2
27	Mbak Ikot Ebo	3.9	3.4	2.9	4	1.9	3.1	2.7	3.6	3.3	3.4	3.7	3	3.3	2.6	2.7	3.4	1.9	2	2
28	Use Atai	2.4	2.3	4.3	3	3.1	3.7	3.7	4.1	4	3.1	3	2.1	3.9	2.7	2.6	3	3	3	1

**Ikot Ekpene Community**

	Factors Responsible for the Location of Commercial Land Use(X Variables)																			
S/N	Name of Community	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	2
1	Abak Oko	3.6	2.6	1.6	2	4.8	4.2	4.2	4.4	3.2	2.8	4.2	3	1.8	3.6	3.4	2.4	2.2	3.2	3
2	Abiakpo Edem Idim	1.7	3	3.3	3	3.6	3.6	4	4	3.3	3	4	4.0	2	4	4.6	1.7	1.7	4.3	3
3	Abiakpo Ikot Essien	3.6	2.6	1.6	3	4.6	4.6	3.4	3.8	3	2.6	3.4	3.9	1.6	3.6	4.3	3.0	2.6	4	2
4	Ibiakpan	4.7	2.3	1.7	2	4.7	5	4.3	4.3	4	4.3	3	3	1.7	3.3	3.6	2	1.6	1.6	2
5	Ibiakpan Akan Anwan	4.1	3.1	2.1	3	4.7	3.7	3.4	3.8	2.3	3.5	3.2	4	2.1	2.6	4	3.2	2.9	4.1	3
6	Ibiakpan Nto Akan	3.5	2.5	2.5	3	5	4.5	3.5	4.5	3.5	3	3	3	2	3	3.5	2	2	2	3

7	Ibong Nto Akan	3.8	3	2	4	4.7	4	4	3.8	3.3	2.8	3.3	3.7	1.2	3.8	4.2	3	2.7	4.2	2
8	Ifuho	3.7	3	2.9	4	3.2	4.1	2.7	3.1	3.3	3.2	2.8	2.8	3.3	2.8	2.8	2.3	2.9	2.7	3
9	Ikot Abai Idem	3.6	2.9	1.6	4	4.8	4.3	3	4.1	3.2	2.4	3.2	3.8	1.8	3.4	4	3.4	3.1	3.8	2
10	Ikot Idem	1	3	2	3	5	5	3	1	4	2	5	4	2	1	4	3	2	3	2
11	Ikot ekpene urban	5	1.5	1.5	4	4.5	5	5	5	3.5	2	4	4	1.5	4.5	4.5	4	3	4	3
12	G.R.A/ ikot ekpene	4.6	4	1.6	3	3.8	4	3.8	4.2	3.4	4.3	3.1	3.8	1.8	4.2	3.8	3.4	3.6	3.4	3
13	Ikot Inyang	2.5	1.8	1.8	2	3.6	3	3.5	3.5	1.8	1.8	4.1	1.8	1.8	3.5	3	2.8	2.5	4	2
14	Ikot Obong Edong	4.4	3.2	1.8	4	4.5	4.1	3.8	3.5	3.4	3.8	2.8	2.8	2.2	4	3.9	3.2	2.4	2.9	3
15	Ikot Out	1.6	3.6	2.7	4	5	4.7	4.3	3.6	4.3	4	3	3.6	2	3	3	3	2.3	1.6	3
16	Ikot-Ekpene Village	3.6	3.3	3.4	3	3.4	2.4	3.5	3.4	3.5	3.3	3	3.1	3.1	3.2	3.2	2.8	3.2	3.2	3
17	Ikotobio Okpon	3	2	2.5	2	5	4.5	2.5	3.5	3.5	2	4	3.5	2.5	2.5	4	3.5	2.5	4	2
18	Itak Ikot Udo-Okop	3.1	3	2.6	4	3.1	4.1	3	3.6	3.3	3.1	3.4	3.6	2.9	2.4	3	2.9	2.4	3.4	3
19	Utu Ikot Ndem Ekpote	2.9	3	3	4	4.3	3.7	1.3	1.7	3	2.7	3.3	4	2.7	1.7	4	3	1.7	3.3	2
20	Nkap Ikot Obio Ebok	3.3	2.5	2.3	3	4.3	4.3	3.8	3.8	3.3	3.5	3.3	4	2	2.8	3.8	2.8	2.3	4	3
21	Nsiak	3	2.3	1.4	3	4.4	4.3	2.6	4	3.4	2.3	3.1	4	1.7	3.6	4	3.4	3	3.7	2
22	Ibiakpan Ikot Obioekere	4	4.2	3.5	2	3	3	3.3	2.3	2.7	2.3	3.3	3.3	2.3	3.2	3.5	3	2.5	3.2	3
23	Uruk Uso	4.6	2.6	1.8	3	4.7	4.3	4.2	4.2	3.3	4.1	3	3.6	1.9	3.8	4.2	2.7	2	3.4	3
24	Utu Edem Usung	3.6	2.6	1.7	3	4.7	4.1	4.4	3.8	3	3.7	3.4	3.3	1.7	4.1	3.6	2.3	1.8	2.7	2
25	Utu Ikot Ekpenyong	4	3	2	4	5	4	2	2	3	3	3	4	1	2	4	2	2	4	2
26	Utu Ikot Essien	2.7	2.7	2.3	2	4	4.3	5	4	1.7	1.7	4	2	2	3.7	3.7	2.7	2	3.7	2
27	Utu Ikpe	4	2	2	3	3.7	4.3	3.7	4.3	2.7	3.7	3	2.7	2.3	3.3	3.7	2	2.7	2.3	3

**Ikot Ekpene Community**

Environmental Quality of Commercial Land Use(Y Variables)																				
S/N	Name of Community	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19
1	Abak Oko	4.2	2.6	3	2	4.2	3	3.4	4.6	3.6	2.4	3.2	1.8	2	1.8	4.4	3	3.2	3.2	3
2	Abiakpo Edem Idim	3.3	2.3	4.7	4	2.7	3	3.3	4.3	5	2.7	3.7	2.3	3.7	2.3	2.3	4.3	2	1.7	4
3	Abiakpo Ikot Essien	3.9	4	3.7	4	3.9	3.5	3.9	4.3	3.5	3.4	3.5	2.6	2.7	3.5	3.2	3.5	2.7	2.6	2
4	Ibiakpan	4.3	2.3	2.7	2	3	3.3	3.7	4.7	3.3	2.7	3.7	2.7	2	2	2.7	3	4.7	4.3	4
5	Ibiakpan Akan Anwan	3.8	2.6	3.3	3	2.4	3.4	2.5	4.2	3.5	3.3	2.8	2.5	3.6	2.8	3.2	3.5	3.7	2.6	2
6	Ibiakpan Nto Akan	2.5	3	3.5	4	4	3	3.5	5	4	2	3	2	2.5	3	2	3	4.5	4	4
7	Ibong Nto Akan	4.3	4.2	4	4	2.8	3	3.2	4.3	2.8	3	3.2	2.8	3.3	2.7	3.7	4.2	1.8	2.8	3
8	Ifuho	3.6	3.1	2.7	3	3.5	3.1	2.9	3.5	2.7	3.5	2.9	2.7	3.4	2.9	3	3	3.5	3	3
9	Ikot Abai Idem	4.2	3.7	3.1	3	4.2	3.4	3.5	4.1	3.3	3.2	2.8	3.3	3.4	3	3.4	3.5	2.8	2.3	2
10	Ikot Idem	2	5	3	5	2	4	4	4	5	2	4	4	4	3	2	4	5	2	5

11	Ikot ekpene urban	5	5	4.5	4	4	4.5	4.5	5	2.5	3.5	3.5	3	4	3	5	3.5	3	2	4
12	G.R.A/ ikot ekpene	4.1	3.3	3.2	3	4.5	3.4	3.7	4.3	3.6	2.6	3.7	2.5	2.4	4.1	4.1	2.4	4.4	3.8	3
13	Ikot Inyang	4.1	1.8	4.1	4	1.8	4.1	4.3	4.1	4.1	4.1	1.6	4.5	4.6	2.1	4.5	4.5	1.5	1.5	2
14	Ikot Obong Edong	4.5	2.5	2.6	3	4.7	3.7	3.6	4.2	3.8	2.8	4.1	2.6	2.4	2.8	3.7	3.2	4	3.1	3
15	Ikot Out	1	3.3	2	4	4.6	1.3	5	4	5	4.3	3.6	3	5	2.6	2	4.3	3.3	1.6	1
16	Ikot-Ekpene Village	3.7	3.3	3.1	3	3.3	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.3	3.1	3.2	3.1	3.2	3.1	3
17	Ikotobio Okpon	2	4	4	4	3	3.5	4	4.5	4.5	2.5	4	3	3.5	3	3.5	3	2.5	3	3
18	Itak Ikot Udo-Okop	3.9	3.1	2.7	3	3.3	3.3	3.4	3.3	3.3	2.6	3.4	3.3	3.4	3.3	4	3.1	3.6	3.1	4
19	Utu Ikot Ndem Ekpote	3.7	4.3	3.3	3	3	3.3	3.3	3	4.3	2	4	4.3	2.7	2.3	1.3	4	2	2.3	3
20	Nkap Ikot Obio Ebok	3.3	3.3	3.5	4	3.3	2.5	4	3.5	4.5	2.8	3	4	3.5	2	2.3	4.3	2.3	2.8	3
21	Nsiak	3.6	4	2.7	4	4.1	3.7	4	3.6	3.9	2.4	4	2	3.9	2.6	3.1	4	1.9	2.7	3
22	Ibiakpan Ikot Obioekere	4.7	3.5	3.3	2	3.7	3.2	3	3	3	2.8	3	2.5	3.3	2.3	2.5	3	3.5	3	3
23	Uruk Uso	4.1	2.8	3.6	3	4.4	3.6	4.1	4.3	3.3	3	3.9	2.3	2.4	2.6	4.2	2.4	4.3	4	3
24	Utu Edem Usung	3.9	2	3	3	4.1	3.8	3.9	3.8	3.7	3.2	2.6	2.9	3.2	2.4	4.1	3.2	3.7	3.2	2
25	Utu Ikot Ekpenyong	5	3	4	4	2	3	3	4	4	3	4	2	4	2	1	4	2	1	4
26	Utu Ikot Essien	3.7	3	4	4	1.7	4.3	4	4	4	3.3	2.7	4	4	2	2	4	1.7	1.3	1
27	Utu Ikpe	3.7	3.3	3.3	4	3.3	3.3	2.3	4.3	4.7	3.3	2.7	2.3	2	2.3	3.3	3.7	2.7	4	3

**Eket Community**

Factors Responsible for the Location of Commercial Land Use(X Variables)																				
S/N	Name of Community	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
1	Ikot Afaha Ukwu	2.3	3.0	2.7	4	4.7	4.3	3.3	4.0	3.7	2.3	2.3	2.3	2.0	2.7	4.3	2.0	2.7	3.7	2
2	Afaha Atai	2.0	3.0	2.7	3.0	5.0	4.3	3.3	3.7	3.3	3.3	3.3	2.0	2.7	2.0	4.3	3.3	2.0	4.0	3
3	Ebana	1.5	3.5	2.0	4	4.5	5.0	2.0	3.5	2.5	2.0	3.0	2.5	2.0	2.0	3.0	2.0	2.0	3.5	4
4	Ede Urua	2.5	3.5	2.5	3	4.5	5.5	2.5	4.0	4.0	3.0	2.0	2.0	1.5	3.0	3.5	2.0	2.0	4.0	4
5	Atai Ndon Afaha	2.8	2.8	3.4	3	3.4	4.0	3.0	4.0	3.2	2.6	3.8	3.6	2.8	2.8	4.0	3.0	3.2	3.2	2
6	Atai Idung Inyang	3.0	2.0	3.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3
7	Afaha Uqua Obok	3.1	2.7	1.9	3	4.2	4.0	2.9	3.5	2.9	3.2	3.5	3.0	1.9	3.2	3.7	2.2	2.2	3.5	2
8	Idim	3	3	2	3	5	4.0	3.0	4.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	3.0	4
9	Ata Idung Afaha	2	3.5	2.5	4	4.5	5.0	3.0	3.5	4.0	2.5	2.5	2.5	2.0	2.5	3.0	2.5	2.5	2.5	3
10	Eket	4.2	2.5	1.6	4	4.7	4.4	4.0	3.7	2.7	3.3	3.0	3.4	1.6	3.5	4.3	2.9	3.0	3.9	3
11	Atabong	4.6	2.6	1	3	5	3.9	3.2	3.7	2.1	4.6	2.6	4.3	1.7	3.4	4.6	1.4	2.6	3.9	3
12	Ekpene Afaha Eket	4.3	2.7	2	3	3.7	4.3	3.0	4.0	2.7	2.3	3.0	3.7	2.0	3.3	3.3	4.0	3.7	4.0	2
13	Idua	2.2	3.5	2	4	4.6	4.6	3.0	4.0	3.2	3.2	2.8	3.8	2.8	3.0	4.0	4.0	2.6	1.0	3
14	Ikot Ibiok	3.9	3.2	1.6	3	4.6	4.6	2.6	3.7	3.3	3.4	2.9	3.7	1.9	2.5	3.9	2.5	2.3	3.5	3

15	Ikot Odiong	2.5	2.5	2.5	3	4	4.5	2.5	4.0	3.5	3.0	2.5	2.5	1.5	2.5	4.0	2.0	2.0	2.5	3
16	Ikot Udoma	2	2.3	2	3	4.5	4.5	2.5	3.5	3.8	2.5	2.3	2.5	1.8	2.5	3.5	2.3	3.5	3.8	2
17	Etebi Ikot Uso Ekong	2	3	4.5	4	4.5	4.5	3.0	4.0	2.5	3.0	4.0	4.0	3.5	2.0	4.0	4.0	2.0	4.5	2
18	Ikot Uso Ekong	2	4	3	4	5	4.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	2.0	4.0	4.0	1.0	4.0	3
19	Mkpok	2.8	3.3	2.8	3	4.5	4.0	2.8	3.5	2.8	2.3	3.8	3.5	2.3	2.8	3.8	3.0	2.3	3.5	2
20	Odoro Enen	2.5	3.5	2.5	3	4.5	5.0	2.5	3.5	3.0	2.5	2.5	2.5	2.0	2.5	3.5	2.0	2.5	2.5	3
21	Usung Inyang	3	2.8	1.1	3	4.6	4.9	2.3	3.6	3.4	2.8	2.8	2.6	1.3	2.0	3.6	2.3	2.4	3.1	3

**Eket Community**

Environmental Quality of Commercial Land Use(Y Variables)																				
S/N	Name of Community	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19
1	Ikot Afaha Ukwaa	3.7	3.3	4	4	3.7	4.7	4	4	3.7	1.7	4.3	3	4.3	2.3	2.3	4.3	1.7	4	3
2	Afaha Ata	3.7	3	3.3	5	2.7	4	3.3	4	4	2.3	4.3	3.7	4.3	2.3	2.7	4	2.7	3.3	3
3	Ebana	3	2	5	4	4	2	3	5	3	3	4	2.5	4.5	3	3	4	1.5	2.5	3
4	Ede Urua	3.5	2	4	4	2.5	3.5	3.5	5	4.5	2	4.5	2.5	4.5	2.5	4	3.5	2	3.5	3
5	Atai Ndon Afaha	3.6	2.8	3.6	4	3	2.8	3	3.6	4.4	3.8	3.6	3.2	3.4	3	3.2	4	3.2	3	3
6	Atai Idung Inyang	3	2	4	3	2	3	3	4	4	5	2	3	5	2	3	4	2	4	3
7	Afaha Uqua Obok	3.3	2.8	3.4	4	3.2	3.8	3.1	4	3.7	3.7	2.8	3.3	4	3	3.7	3.2	4	2.4	2
8	Idim	4	2	4	4	2	5	4	5	4	2	2	3	5	2	3	4	2	3	3
9	Ata Idung Afaha	3.5	2.5	4	3	2.5	3	3.5	4.5	4	3.5	2.5	2	5	3.5	4	3.5	2	4	3
10	Eket	3.7	2.6	4.1	3	3.7	3.4	4	4.6	3	3.5	3	3	4.2	3	3.6	3.3	3.6	2.5	3
11	Atabong	3.4	3.6	3.8	3	3.4	3.6	3.1	3.7	3	3.3	3.3	3.2	3.8	3.1	3	3.5	3.4	2.7	3
12	Ekpene Afaha Eket	3.7	2.7	3.7	4	4.3	4	3.7	3.7	4.3	4	3	3	4.3	2	3.7	4	2.3	3	2
13	Idua	2.4	3.2	3.6	4	4	3.4	3.2	2.4	4	3	3	3.6	4	2.4	2.6	4.2	2.8	2.4	2
14	Ikot Ibiok	3.7	2.9	3.6	3	3.7	2.1	2.8	3.8	2.6	2.9	2.6	2.7	3.7	2.5	3.4	3.6	4	3.4	3
15	Ikot Odiong	3	2	4	3	2	4	3.5	4.5	4	3	3	2	5	2.5	2.5	4	3	4	3
16	Ikot Udoma	3.2	2.6	4.3	3	3.3	4.3	3.8	4.8	4.5	4.8	1.8	2.8	4.5	2.5	3.3	3.5	1.5	3.5	4
17	Etebi Ikot Uso Ekong	2	4	2.5	5	2	4.5	2	2	4	1	4.5	3.5	3	2	2	4	2	2	3
18	Ikot Uso Ekong	2	5	2	4	2	4	3	3	4	2	4	3	4	3	2	5	3	2	3
19	Mkpok	3.5	3.5	2.3	3	3	3.8	2.8	3	4.3	3.3	3.5	3.5	3.5	1.5	2.8	3.8	1.8	2.5	3
20	Odoro Enen	3.5	2.5	4	3	2.5	3.5	3.5	4.5	2.5	3.5	3.5	2	4.5	3	3.5	3.5	2.5	4	3
21	Usung Inyang	3.1	2	3.8	3	2.5	4.3	3.6	4.8	2.9	3.9	2.9	1.5	4.8	3	3	3.6	3	3.5	2

Table 2 shows the rotated component matrix while Table 3 shows the factor scores derived from the 21 original variables. The analysis produced 7 components with eigenvalues exceeding 1 with the first component explaining 16.069% (infrastructure and commercial inertia) of the variance while the 7<sup>th</sup> component accounting for 5.69% (Market Synergy) respectively. The 7-component solution accounted for a total of 68% of the variance (Table 2). To aid in the interpretation of these 7 components, varimax rotation was performed. Rotated component loadings from  $\pm 0.3$  within the 7 axes were selected.

Table 2: Rotated Component Matrix on Location Variables

	Rotated Component Matrix <sup>a</sup>							communalities
	Infrastructure and Commercial Inertia	Protection Policies	Land Ownership	Urban Nexus	Business Infrastructure and Economic Viability	Mobility	Market Synergy	
Accessibility		.493	.336			.622		.795
Security					.653			.579
Rent			-.740					.603
Skill base	.350				.595			.545
Land ownership		-.563	.523					.691
Potential for growth			.448		.602			.641
Proximity to market				.614			.537	.729
Demography				.743				.594
Power					.667			.523
Transport						.852		.825
Water	.612						.408	.674
Terrain	.450			-.380		.492	.346	.756
Land value			-.833					.754
Proximity to central business district	.375	.373		.618				.771
Cumulative causation	.821							.768
Non-geographical factors							.832	.733
Government policies		.777						.645
Commercial inertia	.738					-.383		.754
Good management		.393		.493	.421			.670
Banking facilities		.411		.388			.435	.620
Insurance		.696						.611
<b>Eigenvalue</b>	<b>3.375</b>	<b>2.826</b>	<b>2.186</b>	<b>2.053</b>	<b>1.399</b>	<b>1.247</b>	<b>1.195</b>	
<b>% Variance</b>	<b>16.069</b>	<b>13.456</b>	<b>10.408</b>	<b>9.775</b>	<b>6.663</b>	<b>5.939</b>	<b>5.69</b>	
<b>Cumulative %</b>	<b>16.069</b>	<b>29.526</b>	<b>39.933</b>	<b>49.708</b>	<b>56.371</b>	<b>62.31</b>	<b>68</b>	

The rotated solution shows a number of strong loadings with 19 variables, where 3 variables loaded on Factor 1, 2 loaded on Factor 2, 1 variable loaded on Factor 3, 4 variables loaded on Factor 4, 4 variables loaded on Factor 5, 3 variables loaded on Factor 6 and 2 variables loaded on Factor 7, and were subsequently given titles that closely describe the pattern of loading.

#### Factor 1: Infrastructure and Commercial Inertia

The first factor is named as it is defined by 3 variables related to water and the evolution of commercial land uses within the study area. It accounts for 16.069% of the variation within the factors influencing location of commercial land uses(variables). It has high positive loadings on 3 variables as shown below;

- Water supply .612
- Cumulative causation .821
- Original origin of commercial land use .738

#### Factor 2: Protection Policies

The second factor is named as it relates to policies for the protection of commercial land use. It accounts for 13.456% of the variation within the distribution of factors influencing location (variables) and has high positive loadings on 2 variables:

- Government policies .777
- Insurance policies .696

#### Factor 3: Land Ownership

The third factor is thus named as it relates to land ownership. It accounts for 10.408% of the variation within the distribution of factors influencing location(variables) and has high positive loadings on 1 variable:

- i. Land ownership .523

#### Factor 4: Population and Central Business District

The fourth factor is thus named as it is defined by 4 variables related to proximity to market, demography, proximity to central business district and good management within the study area. It accounts for 9.775% of the variation within the distribution of factors influencing location (variables) and has high positive loadings on 4 variables as shown thus:

- ii. Proximity to market .614
- iii. Targeted population .743
- iv. Proximity to central business district .618
- v. Good management .493

#### Factor 5: Security and Economic Viability

The fifth factor is named as it is defined by 4 variables which include security, skilled base/work force, potential growth/ expansion and power within the study area. It accounts for 6.663% of the variation within the distribution of factors influencing location (variables) and has positive loadings on 4 variables as shown below:

- Security .653
- Skilled base .595
- Growth potential/expansion .602
- Power supply .667

#### Factor 6: Mobility

The sixth factor is thus named as it relates to mobility. It accounts for 5.939% of the variation within the distribution of factors influencing location(variables) and has high positive loadings on 3 variables as shown below:

- 1. Accessibility .622
- 2. Transportation .852
- 3. Terrain .492

#### Factor 7: Market Synergy

The seventh factor is named as it is defined by 2 variables and relates to banking facilities and non-geographical factor in the study area. It accounts for 5.69% of the variation within the distribution of factors influencing location (variables) and has high positive loadings on 2 variables as shown below:

- Non geographical factor .832
- Banking facilities .435

The 7 derived location factors and the 2 land use activities were utilized in multiple regression analysis to investigate the relationship between location factors and land use activities. In standard multiple regression, all the independent variables are entered into the equation simultaneously and each independent variable is evaluated in terms of its predictive power, over and above that offered by all the other independent variables.

From the Model Summary (Table 3) the value of the R Square (.059) which represent 5.9% indicates how much of the variance in the dependent variable is explained by all the independent variables. This means that all the factors combined together explained only 5.9% of the variance in the Automobile and Entertainment/sales activities (Y1). This is quite a very weak result which reflects no statistical significance in the ANOVA (Table 4) as the Sig. value of .743 is greater than .05 thereby making no significant contribution to the prediction of the dependent variable. Therefore, the null hypothesis of no influence of location factors on commercial land use activities is upheld. The 7 independent variables were examined individually to determine which of them made significant contribution to the prediction of the dependent variable using the standardized coefficients in Table 5. From the Beta values in the standardized coefficient table, the result shows that, the largest beta coefficient is .153 which is for Infrastructure and Commercial Inertia (X1). This means that this variable though very weak made the highest unique contribution of 2.34% to the explanation of the dependent variable, when the variances explained by all other independent variables were held constant. The Beta value for Population and Central Business District (X4= -.117) followed indicating that it made the second most contribution (1.37%). Despite their contributions, they were not statistically significant in explaining the performance of the dependent variable.

Table 3: Model Summary of location factors and Automobile and Entertainment/sales activities (Y1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Change	Square Change	F Change	df 1	df 2	
1	.244 <sup>a</sup>	.059	-.037	.99804008	.059	.614	7	68	.743	2.064

Table 4: ANOVA of location factors and Automobile and Entertainment/sales activities (Y1)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.278	7	.611	.614	.743 <sup>b</sup>
	Residual	67.734	68	.996		
	Total	72.012	75			

Table 5: Coefficients of location factors and Automobile and Entertainment/sales activities (Y1)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	.001	.114	.012	.990	-.227	.230						
	x1	.150	.115	.153	1.301	.198	-.080	.380	.153	.156	.153	1.000	1.000
	x2	.066	.115	.068	.575	.567	-.164	.296	.068	.070	.068	1.000	1.000
	x3	.080	.115	.082	.696	.489	-.150	.310	.082	.084	.082	1.000	1.000
	x4	-.115	.115	-.117	-.997	.322	-.345	.115	-.117	-.120	-.117	1.000	1.000
	x5	-.048	.115	-.049	-.414	.680	-.278	.182	-.049	-.050	-.049	1.000	1.000
	x6	-.024	.115	-.024	-.204	.839	-.254	.206	-.024	-.025	-.024	1.000	1.000
	x7	-.088	.115	-.090	-.763	.448	-.318	.142	-.090	-.092	-.090	1.000	1.000

X1; Infrastructure and Commercial Inertia; X2; Protection Policies; X3; Land Ownership; X4; Urban Nexus; X5; Business Infrastructure and Economic Viability; X6; Mobility; X7; Market Synergy.

The non-statistically significant relationship between the derived factors of location and the commercial land use is as expected going by the weak loadings of the factor scores as well as the correlation Table 6 and thus implies that other factors could have been responsible for the commercial land use structure observed in the study area.

Table 6: Correlations of location factors and Automobile and Entertainment/sales activities (Y1)

	Infrastructure and Commercial Inertia	Protection Policies	Land Ownership	Urban Nexus	Business and Economic Viability	Infrastructure and Economic Viability	Mobility	Market Synergy
y1	.153	.068	.082	-.117	-.049		-.024	-.090
Sig. (1-tailed)	.094	.281	.241	.156	.338		.418	.220
N	76	76	76	76	76		76	76

In terms of the production and small-scale business activities (Y2), the result shows that the value of the R Square value of .152 (15.2%) indicates that the dependent variable (production and small-scale business activities) is explained by all the independent variables by 15.2% (Table 7). This level of explanation is quite low to the extent that statistical significance is not attained as Table 7 reveals, the Sig. value of .115 is greater than .05 leading to the acceptance of the null hypothesis of no significant influence of location factors on commercial land use activities in the study area.

Table 7: Model Summary of location factors and production and small-scale business activities (Y2)

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	.389 <sup>a</sup>	.152	.064	.94870685	.152	1.736	7	68	.115	2.399

Further assessment of the 7 independent variables individually to isolate the variables that had significant contribution to the explanation of the dependent variable as shown in the standardized coefficients (Table 8), the Beta values show that, variables X2 (Protection Policies = .212) and X7 (Market Synergy = .197) had the largest beta coefficient values. This means that these

variables though very weak made the highest unique contribution to the explanation of the dependent variable, when the contributions of other independent variables were held constant. The independent variable X5 (Security and Economic Viability) had the least contribution of .010 to the explanation of commercial land use location.

Table 8: ANOVA of location factors and production and small-scale business activities (Y2)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.937	7	1.562	1.736	.115 <sup>b</sup>
	Residual	61.203	68	.900		
	Total	72.140	75			

On the whole none of the 7 independent variables reach statistical significance in the explanation of the locations of commercial land use activities relating to small business activities, and as such, the null hypothesis is upheld. Although, the correlation (Table 9) shows the variables X2 (Protection Policies = .033) and X7 (Market Synergy = .044) reached statistical significance and the null hypothesis can be rejected for them, the overall model indicates contrary.

Table 9: Coefficients of location factors and production and small-scale business activities (Y2)

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-.004	.109		-.034	.973	-.221	.213					
x1	.060	.110	.062	.552	.583	-.158	.279	.062	.067	.062	1.000	1.000
x2	.208	.110	.212	1.900	.062	-.010	.427	.212	.225	.212	1.000	1.000
x3	.176	.110	.179	1.604	.113	-.043	.394	.179	.191	.179	1.000	1.000
x4	.162	.110	.165	1.476	.145	-.057	.380	.165	.176	.165	1.000	1.000
x5	.009	.110	.010	.086	.932	-.209	.228	.010	.010	.010	1.000	1.000
x6	.066	.110	.068	.605	.547	-.152	.285	.068	.073	.068	1.000	1.000
x7	.193	.110	.197	1.764	.082	-.025	.412	.197	.209	.197	1.000	1.000

## 7.0 Discussion of Findings

The factors influencing the location of commercial land use, such as automobile services, entertainment, and small-scale businesses/production, within the study area were examined. To identify these factors and determine their relationships with commercial land use, factor analysis and multiple regression analysis were utilized.

Seven key factors, grouped from an initial set of 21 variables, were identified as influencing commercial land use. These factors explained most of the variations in how land is used for different commercial activities and were named according to their most prominent characteristics. The results provide insight into how various location-related factors connect to specific types of commercial activities, though the overall relationship between these factors and commercial location was weak: For businesses like automobile services and entertainment, the factors explained only 5.9% of the variation, indicating that location factors have minimal influence on where these activities are found. For production and small-scale businesses, 15.2% of the variation was explained, but location factors still played a relatively minor role.

The impact of individual factors was also examined. While some showed stronger influence, none was statistically significant. For automobile and entertainment activities, two factors: Protection Policies (X2) and Market Synergy (X7) had higher influence but were not strong enough to make a significant impact. Similarly, for small-scale business/production activities, Security and Economic Viability (X5); and Infrastructure and Commercial Inertia (X1) had greater influence but still lacked significance. In conclusion, the findings suggest that location factors, such as proximity to specific areas or infrastructure, do not significantly determine where commercial activities occur. The weak connections observed point to the possibility that other, more complex factors such as business networks, economic policies, or market conditions may better explain the distribution of commercial land use. These findings though showed weak relationships between commercial land use and the factors studied are still in agreement with studies by Fox (2017) and Smith (2021) who opined that factors such as road network accessibility, proximity to transportation hubs, power sources, and water bodies determine the location of commercial activities. Perhaps the weak relationship established in the study may be caused by the fact that the provision of infrastructure/facilities are at low ebb.

## 8.0 Conclusion

In conclusion, the study revealed that location factors have a limited influence on the distribution of commercial land use, including activities such as automobile services, entertainment, and small-scale businesses. While seven key location factors were identified, they explained only a small portion of the variation in commercial land use, with 5.9% for automobile services and entertainment, and 15.2% for small-scale businesses. Even though certain factors, such as protection policies, market synergy, and security and economic viability, showed higher levels of influence, none were statistically significant. This suggests that geographic location plays a relatively minor role in determining where businesses are established.

## 9.0 Recommendations

Based on the findings the location factors seem to have a limited effect on commercial land use. Therefore the following recommendations are made:

- 1) It is important to investigate more complex influences such as economic policies, market conditions, and business networks. These factors may provide a deeper understanding of the patterns observed in commercial activities distribution.
- 2) Urban planners and policymakers should avoid focusing exclusively on location factors like proximity to infrastructure or protection policies when making decisions about commercial land use, but rather on a broader approach that integrates business ecosystems and market trends. This could offer better insights into how commercial activities are distributed and strategies should be developed to promote business clustering, encourage synergy, and alignment with broader market forces leading to more sustainable land use and economic growth.

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