A Comparative Assessment of Urban Infrastructural Variables on Commercial Property Rental Values in South-East Nigeria [1]

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Abstract

This study compares how urban infrastructure affects commercial property rental values in major cities in South-East Nigeria, with a focus on Onitsha and Aba. It examines how the availability, condition, and efficiency of infrastructure have influenced rental value trends between 2015 and 2025. Using descriptive and comparative methods supported by field survey data and trend graphs, the study shows that key infrastructural factors such as road networks, water supply, electricity, drainage, waste management, and internet services play a major role in shaping commercial rental performance. The findings reveal that rental values in Onitsha increased more sharply, rising from about ₦150,000 in 2015 to approximately ₦950,000 in 2025. In contrast, Aba recorded a steadier growth, with rental values moving from around ₦120,000 to about ₦700,000 over the same period. These differences point to variations in infrastructure quality and levels of investment in the two cities. The study also shows that locations with reliable and well-maintained infrastructure tend to attract higher rents, stronger business activity, and greater investor confidence, while areas with poor or deteriorating infrastructure experience weaker market performance. The study concludes that sustained investment in infrastructure, regular maintenance, and the inclusion of digital facilities are essential for the long-term growth and stability of commercial real estate markets in South-East Nigeria. It also highlights the need for better coordination in urban infrastructure planning and real estate policies to promote balanced and inclusive regional development.

Keywords: Urban Infrastructure, Commercial Property, Rental Values, Trend Analysis.

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1.0 INTRODUCTION

Urban infrastructure plays a role in how cities grow and function, and it strongly influences property values and overall economic activity. Facilities such as roads, water supply, electricity, drainage systems, and waste management shape how attractive commercial properties are and how well they perform in the rental market. In developing economies like Nigeria, this relationship is especially clear because of rapid urban growth and uneven distribution of infrastructure across cities.

South-East Nigeria, with its high level of commercial activities and growing population, provides a suitable setting for examining how differences in infrastructure affect commercial rental values. Although there have been investments in urban development across the region, many cities still struggle with inadequate infrastructure, which affects the efficiency of property markets and discourages long-term investment. This study therefore compares urban infrastructural conditions in selected cities in South-East Nigeria and examines how these conditions influence commercial property rental values. The analysis helps to improve understanding of real estate market behavior and supports informed urban planning and policy decisions.

1.1 Background to the Study

Infrastructure is widely recognized as the foundation of urban economic growth and the performance of property markets. The provision of adequate infrastructure goes beyond physical development, as it directly affects land and property values by improving access, lowering business operating costs, and creating a better environment for commercial activities. In Nigeria, infrastructure development has been uneven over time, resulting from shifts between government-led and market-driven policies, which have left many cities with varying levels of service delivery.

In South-East Nigeria, cities such as Onitsha, Aba, and Enugu have received different levels of infrastructural investment, leading to noticeable differences in commercial rental values. Areas with good road networks, reliable electricity, and effective drainage systems often attract higher rents because they support business activities and reduce operational challenges. On the other hand, poor infrastructure and lack of maintenance have contributed to declining urban areas in some locations, reducing investor confidence and limiting property returns.

Recent studies highlight that the sensitivity of the real estate sector to infrastructure development makes it necessary to adopt integrated urban management approaches and invest sustainably in

physical facilities. This study therefore focuses on comparing Onitsha in Anambra State and Aba in Abia State to understand how differences in infrastructure translate into variations in commercial rental values. In doing so, it contributes to existing knowledge on urban infrastructure, property economics, and real estate valuation in developing regions.

1.2 Statement of the Problem

Even though the importance of urban infrastructure to property market performance is well established, many cities in South-East Nigeria continue to experience growing differences in commercial rental values due to uneven infrastructure development. While some urban areas benefit from relatively good infrastructure, others face declining facilities, leading to unequal urban growth and inconsistent rental patterns.

Research has shown that factors such as road access, reliable electricity, and effective waste management directly influence the attractiveness of commercial properties and their ability to generate rental income. However, there is limited comparative research that examines a wider range of infrastructural elements, including hard, soft, and digital infrastructure, across different cities in the South-East, and how these variations affect commercial rental values. The lack of comprehensive comparative data makes it difficult for urban planners, real estate investors, and policymakers to make well-informed decisions that support sustainable urban development.

This study therefore aims to address this gap by carrying out a comparative assessment of urban infrastructural variables and their effects on commercial property rental values in selected urban centers in South-East Nigeria. The findings are expected to provide useful insights for policy formulation, real estate investment, and planning strategies that promote balanced and sustainable urban growth in the region.

2.0 LITERATURE REVIEW

Infrastructure provides the basic physical and organizational support that allows cities and economic activities to function effectively. The presence, quality, and distribution of infrastructure play a major role in how property markets perform, as they influence land values and rental income. Studies have consistently shown that areas with adequate and well-maintained infrastructure tend to record higher property values and attract sustained investor interest. This section reviews existing theories and empirical studies on the relationship between urban

infrastructure and property values, with particular attention to how infrastructural development affects commercial real estate performance in Nigeria and other developing countries.

2.1 Urban Infrastructure and Property Values

Many studies agree that good infrastructure increases the attractiveness of properties and improves their rental value. Infrastructure improves access, supports service delivery, and boosts economic activities, all of which contribute to rising property values. Research focusing on South-East Nigeria shows that facility such as good road networks, reliable electricity, water supply, and effective drainage systems significantly influence the rental and capital values of commercial properties.

Empirical evidence also shows that properties located in areas with functional infrastructure command higher rents than those in poorly serviced locations. Improved transport routes and better road connectivity have been linked to higher property demand and stronger rental performance. In addition, closeness to essential services such as electricity, communication networks, and drainage systems has been found to directly affect how properties are valued in the market.

Infrastructure also affects property values through environmental quality. Efficient waste management and proper drainage improve the cleanliness and safety of neighborhoods, which increases tenants' willingness to pay higher rents. In contrast, areas affected by failing infrastructure often experience falling property values and reduced investor interest. Overall, existing studies clearly show that infrastructure development is vital for long-term real estate growth and the overall health of urban neighborhoods.

2.2 Relevance of Infrastructural Development to Property

Infrastructure development strongly influences how land is used and how property markets operate in urban areas. Theories on rent and accessibility suggest that improvements such as road networks raise property values by making movement easier and expanding access to markets. Infrastructure can have both positive and negative effects on property values, depending on the type of facility and where it is located. While roads, water supply, and electricity generally increase land and property attractiveness, facilities that create environmental or social problems, such as poorly managed waste sites or inadequate drainage, can reduce property values.

Earlier studies on accessibility remain relevant today, as recent research using modern analytical tools continues to show that closeness to infrastructure and ease of access explain differences in

property values across locations. Research has also shown that tenants and investors prefer properties that are close to workplaces, transport routes, and essential services, as these locations offer convenience and lower daily costs.

Recent studies further suggest that the impact of infrastructure is not uniform across all areas. Improvements in roads and electricity supply have been shown to increase property prices in cities such as Enugu and Aba, but the scale of these effects varies depending on neighborhood characteristics, land use intensity, and local economic conditions. This shows that while infrastructure generally supports higher property values, its actual impact depends on the specific context.

2.3 General Economic Benefits of Infrastructure

Beyond property markets, infrastructure contributes significantly to overall economic growth and development. Investment in infrastructure creates jobs, improves productivity, and expands government revenue, helping to strengthen the economy. Infrastructure also supports urban renewal, boosts business competitiveness, and creates wider economic benefits that reinforce property market performance.

Public investment in infrastructure is often used to support the economy during periods of low private investment. Such spending stimulates activities in construction, real estate, and related sectors, helping to sustain economic activity. As a result, infrastructure development leads to several economic benefits, including job creation and skills development, increased business activities and private investment, higher demand for commercial and residential properties due to improved access and living conditions, and faster economic growth reflected in greater contributions from the real estate and construction sectors.

Thus, continuous investment in and maintenance of infrastructure are essential for supporting real estate development and improving the overall competitiveness of cities in Nigeria.

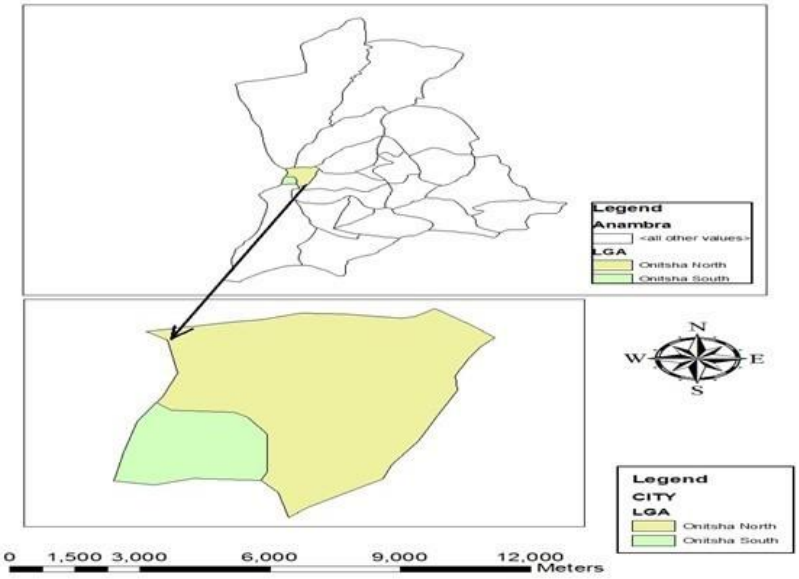

Figure: Map of Anambra State Nigeria.
Source: Ministry of Lands Survey & Town Planning, Awka Anambra State (2025).

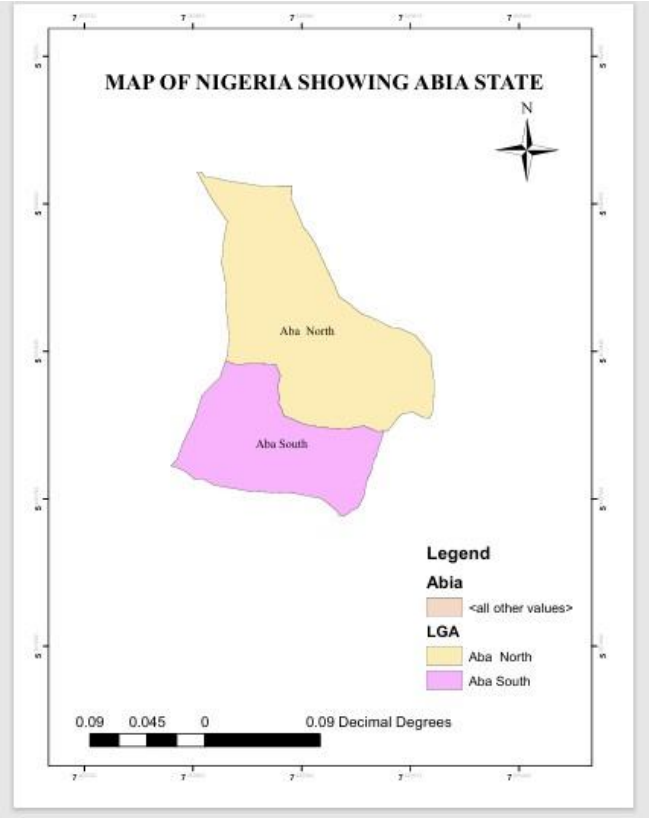

Figure: Map of Abia State Nigeria.
Source: Department of Land Surveying and Geoinformatics Geographic Information System (GIS), University of Nigeria Nsukka (2025).

3.0 ANALYSIS AND INTERPRETATION

To identify specific urban infrastructure variables that have the most sufficient impact on commercial property rental values in South-east, Nigeria.
In order to be able to meet this objective, the researcher first had to ascertain the urban infrastructure variables available in the various locations, the states of the available infrastructure variables and then the specific variables that have the most sufficient impact on commercial property values in South-east, Nigeria.

The Likert scales for the availability are “not available” and “available”; frequencies and percentages were used. The Likert scales used for the states of the infrastructure are very bad (1),

bad (2), fair (3), good (4), very good (5), while the scales for the specific variables are structured on agree/disagree as follows strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). The five scales have mean cutoff points obtained using as follows:

$$\bar{x} = \frac{1+2+3+4+5}{5} = \frac{15}{5} = 3.0$$

If the mean cutoff mark is less than 3.0, it is bad in the case of the state of infrastructure while disagree for the specific variables and 3.0 or more implies good and agree respectively, for the state of infrastructure and specific variables that have the most sufficient impact on commercial property values in South-east, Nigeria.

The responses are contained in tables 5a to 5c.

Table 5a: Availability of Infrastructure

		Onitsha				Aba			
		NA		Avail		NA		Avail	
S/N	Variable	F	%	F	%	F	%	F	%
1	Road	28	17.0	137	83.0	30	18.2	135	81.8
2	Water supply	19	11.5	146	88.5	34	20.6	131	79.4
3	Electricity supply	46	27.9	119	72.1	56	33.9	109	66.1
4	Waste disposal	79	47.9	86	52.1	90	54.5	75	45.5
5	Drainage	47	28.5	118	71.5	60	36.4	105	63.6
6	Security	63	38.2	102	61.8	88	53.3	77	46.7
7	Vehicle parking space	71	43.0	94	57.0	76	46.1	89	53.9
8	Internet network	19	11.5	146	88.5	43	26.1	122	73.9
9	CCTV Camera	147	89.1	18	10.9	144	87.3	21	12.7
10	Intelligent Street lighting	68	41.2	97	58.8	84	50.9	81	49.1
11	Smart meter for electricity	116	70.3	49	29.7	81	49.1	84	50.9
12	Solar grid with digital monitoring	126	76.4	39	23.6	132	80.0	33	20.0

Looking at table 5b, we can observe that the available infrastructure variables in Onitsha as responded Road, Water supply, Electricity supply, Waste disposal, Drainage, Security, Vehicle

parking space, Internet network and Intelligent Street lighting while CCTV Camera, Smart meter for electricity and Solar grid with digital monitoring are not available.

Furthermore, according to the respondents in Aba, the available infrastructure variables are Road, Water supply, Electricity supply, Drainage, Vehicle parking space, Internet network and Smart meter for electricity.

Table 5b: State of the Infrastructure

S/N	Variable	Onitsha		Aba	
		Mean	Remark	Mean	Remark
1	Road	3.11	Good	3.01	Good
2	Water supply	3.15	Good	2.84	Bad
3	Electricity supply	2.88	Bad	3.11	Good
4	Waste disposal	2.28	Bad	2.45	Bad
5	Drainage	2.52	Bad	2.57	Bad
6	Security	2.67	Bad	2.17	Bad
7	Vehicle parking space	2.83	Bad	2.62	Bad
8	Internet network	3.18	Good	2.84	Bad
9	CCTV Camera	2.38	Bad	1.99	Bad
10	Intelligent Street lighting	2.58	Bad	2.41	Bad
11	Smart meter for electricity	2.68	Bad	2.75	Bad
12	Solar grid with digital monitoring	2.15	Bad	1.99	Bad

Looking at table 5b, it can be seen that the respondents are of opinions that the states of road, water supply and internet network are good in Onitsha while the rest of the available infrastructure variables are bad. In Aba, the state of road and electricity are good, while other infrastructure variables are bad.

Table 5c: Urban Infrastructure Variables that have the Most Sufficient Impacts on Commercial Property Values

S/N	Variable	Onitsha		Aba	
		Mean	Remark	Mean	Remark
1	Road	3.91	Agree	3.89	Agree
2	Water supply	3.75	Agree	3.42	Agree
3	Electricity supply	3.89	Agree	3.58	Agree

4	Waste disposal	3.62	Agree	3.37	Agree
5	Drainage	3.52	Agree	3.39	Agree
6	Security	3.69	Agree	3.33	Agree
7	Vehicle parking space	3.39	Agree	3.30	Agree
8	Internet network	3.81	Agree	3.51	Agree
9	CCTV Camera	3.56	Agree	3.24	Agree
10	Intelligent Street lighting	3.55	Agree	3.47	Agree
11	Smart meter for electricity	3.43	Agree	3.27	Agree
12	Solar grid with digital monitoring	3.43	Agree	3.24	Agree

It can be seen from table 5c that the respondents agree that the listed variables have sufficient impacts on commercial property values in the two locations.

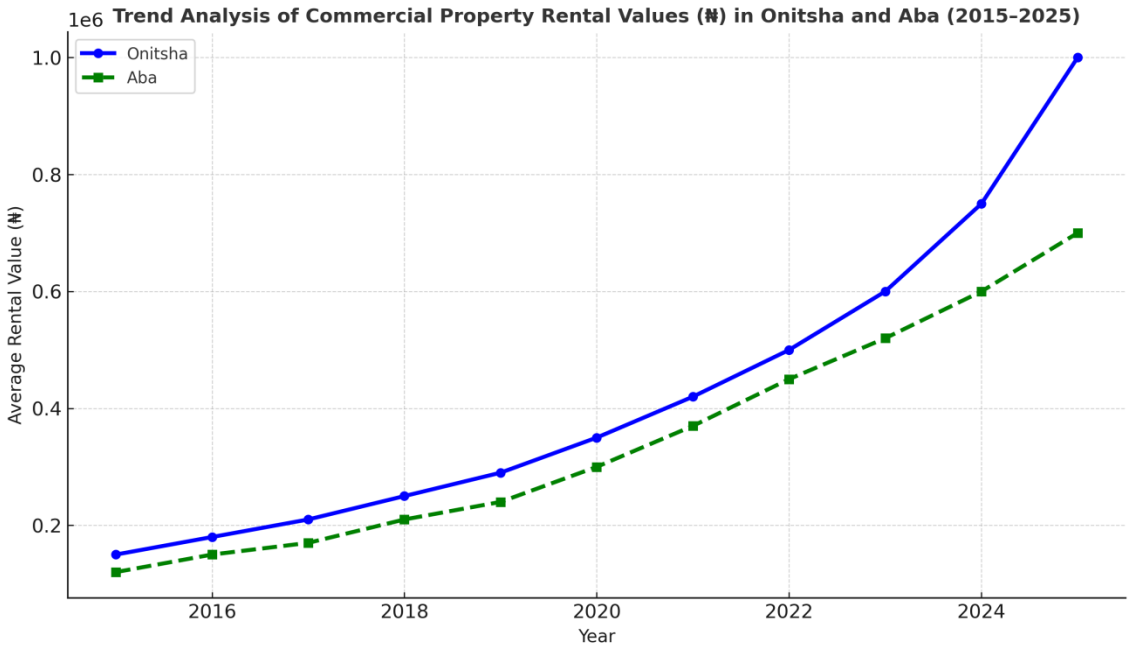

Figure 3 provides a comparative overview of rental growth patterns in Onitsha and Aba between 2015 and 2025.

The comparative trend analysis examines how commercial shop rental values in Onitsha and Aba, two major commercial cities in South-East Nigeria, have changed between 2015 and 2025. The combined trend graph shows that rental values in both cities generally increased over the ten-year period, indicating sustained growth in the commercial real estate market. This upward movement

reflects expanding urbanization, growing commercial activities, and gradual improvements in urban infrastructure. However, the noticeable year-to-year fluctuations suggest the influence of uneven infrastructure development, economic instability, inflationary pressures, and changing market conditions.

2. Onitsha

In Onitsha, rental values followed a steeper and more irregular pattern. Sharp increases at certain periods highlight strong commercial demand linked to the city's position as a major trading centre in the region. Average shop rents rose from about ₦150,000 in 2015 to over ₦950,000 by 2025, indicating rapid growth over the decade. This sharp rise and volatility are likely the result of intense demand, pressure on existing infrastructure, traffic congestion, and broader economic factors such as inflation.

3. Aba

Aba, on the other hand, recorded a more gradual and steady increase in rental values. Shop rents grew from roughly ₦120,000 in 2015 to between ₦600,000 and ₦700,000 by 2025. Although rental levels remained lower than those of Onitsha, the growth pattern was smoother and more consistent. This stability suggests that relatively improved infrastructure in key commercial areas, such as better road networks and electricity supply in zones like Ariaria and Ngwa Road, has supported business activities without causing extreme rental fluctuations.

4. Comparative Interpretation

When both cities are compared, Onitsha clearly maintains higher rental values, reinforcing its status as a dominant commercial hub in South-East Nigeria. Aba's steadier growth reflects more evenly spread infrastructural investments, which appear to have moderated sharp rental changes. In both cities, periodic fluctuations in rents point to the negative effects of infrastructure deterioration, unreliable power supply, flooding, and congestion on commercial property performance.

The analysis confirms that urban infrastructure development is closely linked to rental value growth. Cities with more dependable roads, electricity, drainage, waste management, security, and digital facilities tend to experience higher and more sustainable rental appreciation. Continuous investment in infrastructure is therefore crucial for strengthening the real estate sector and supporting regional economic development in South-East Nigeria.

Conclusion

In conclusion, the study comparatively assessed the impact of urban infrastructure on commercial property rental values in Onitsha and Aba. The findings show a strong positive relationship between the quality of infrastructure and rental value performance in both cities. Key infrastructure components such as roads, electricity, water supply, waste management, drainage, security, and digital connectivity play significant roles in shaping rental levels and market attractiveness. Evidence from rental trends between 2015 and 2025 indicates that Onitsha experienced faster rental growth, rising from about ₦150,000 to ₦950,000, while Aba recorded more moderate but stable increases over the same period. Areas with better infrastructure attracted higher rents and stronger business investment, whereas poor maintenance and weak urban planning reduced investor confidence and distorted rental values.

The study concludes that sustainable and well-managed infrastructure is essential for the long-term health of commercial real estate markets in South-East Nigeria. Effective infrastructure improves accessibility, lowers operating costs for businesses, and encourages investment, thereby promoting balanced urban growth and regional economic competitiveness.

Recommendations

Based on these findings, several recommendations are proposed. Governments in Anambra and Abia States should give priority to rehabilitating and expanding key infrastructure such as roads, drainage systems, and electricity supply in major commercial areas. Urban planning authorities should adopt integrated and data-driven planning approaches that align infrastructure provision with commercial land use to reduce congestion and ensure equitable development. Public-private partnerships should be encouraged to support infrastructure financing and service delivery, especially in areas such as waste management, security, and renewable energy. Urban renewal efforts should also include digital and smart infrastructure, such as broadband connectivity, smart meters, CCTV systems, and modern street lighting, to attract contemporary businesses and enhance rental competitiveness. Regular maintenance and monitoring of existing infrastructure are necessary to sustain property values and prevent urban decay. Finally, stronger policies, transparent budgeting, accountability mechanisms, and institutional capacity building are needed to ensure effective implementation and long-term sustainability of urban infrastructure development.

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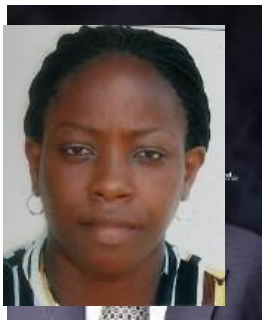

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