

# Public Infrastructure and Urban Rent Inequality in Kaduna Metropolis

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## Abstract

*Rental values in major cities worldwide have increased at a rate never before seen due to the growing demand for residential properties in metropolitan areas. The connections between residential property rental values and all of these location-specific and physical dwelling attributes, amenities, and so forth are valued by valuers, planning authorities, and policymakers. For example, valuers will receive assistance in assigning values to different housing and locational qualities once all of these links have been established. The purpose of this study was to assess how public amenities affected the rental values of residential properties in five key areas of Kaduna city. Three sub-areas—Kaduna Township, Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando, Sabo-Narayi and Barnawa — were established inside the study area. The demarcation is based on the unequal distribution of public amenities in the study area, meaning that certain neighborhoods have more amenities than others. These public facilities were the subject of the study: roads, drainage systems, electricity, pipe-borne water, garbage collection and disposal, security (police station, army post), health facilities (hospitals, health care centers, etc.), and educational facilities (schools). Tenements, one-bedroom apartments, two-bedroom apartments, three-bedroom apartments, and bungalows are the types of residential properties that were examined. Quantitative (Survey) research design was used with questionnaire as data collection tool. Stratified and random sampling technique was applied. Data was analyzed using descriptive statistics. The study concludes that there is an uneven distribution of the eight (8) public amenities across the study area with wide difference in availability. Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando and Barnawa have the adequate public amenities than Sabo-Narayi. The uneven distribution of public amenities causes rent differentials within the Kaduna Metropolis.*

**Keywords:** Public infrastructure, rental value, rent, residential property, rental inequality

## INTRODUCTION

The rising demand for residential properties in urban centers has caused rental values in major cities around the world to rise at an unprecedented rate (Seymour, Endsley & Franklin, 2020; Hilber & Mense, 2025) [1]. The rental value of residential real estate is determined by several elements, including location, time, and property interest, as well as the condition of repair, accommodations, and amenities (Jimoh & Famewo, 2022; Kumar, 2024) [2, 3].

The physical characteristics of a property, its surroundings, its amenities, and – above all – its location are all significant factors that affect rental values (Ramani, A. & Bloom, N., 2021); Sani, Mohammed & Usman, 2023) [4, 5]. Public amenities must be present in all estates, whether

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they are commercial, residential, or industrial. Areas with one or more types of amenities appeared to have the greatest housing value. For instance, a residential neighborhood's increasing worth is comparatively higher the closer it is near new infrastructure improvements (Albouy, 2016) [6]. Since humans are socioeconomic beings who want to live in housing that offers the greatest number of essential amenities at reasonable prices, the availability and the geographical distribution of public amenities frequently influence demand and choice for residential property (Sani, et al., 2023) [5].

Kaduna has every kind of public amenity related to urban development. However, there are numerous and varied issues with sufficiency, including issues with quantity and quality, functionality, location (spatial distribution), distance to residences, maintenance, and management (Jimoh & Ige, 2017; Satterthwaite et al., 2020) [7, 8]. The purpose of this study was to assess how public amenities affected the rental values of residential properties in five key areas of Kaduna city to ascertain how they affected rent differences with the following objectives:

- To determine the existing public amenities in the Kaduna metropolis.
- To determine the level of residential property rental value in the study area.

## LITERATURE REVIEW

Public amenities and services provide for the essential human requirements of safety, education, health, security, and recreation (Wrigley, N. & Lambiri, D., 2022; Zhang & Yan, 2023; Adegbite, 2025; Gibberd, 2025) [9, 10, 11, 12]. It continues by stating that certain public facilities and services are funded by the government and have previously been identified as essential to a community's development. The private sector provides additional public services as a requirement of city development (Adegbite, 2025) [11]. Jimoh and Ige (2017) [7] investigated the relationship between residential property rental value and public infrastructure in Lagos, Nigeria, and found that public infrastructure is available. Conversely, infrastructure is inadequate, ineffective, and unequally dispersed. To enhance the quality of life for the locals, the study suggested that the area be improved and appropriately maintained. According to the study, one of the elements influencing the demand for the choice of residential real estate is the provision of public amenities. This is because, as socioeconomic beings, humans want to live in residential units that offer the most essential amenities at the most affordable price. Therefore, it is essential to provide amenities that would enhance the quality of life for neighborhood residents. The availability of facilities is the most significant of several elements that affect property rental values, which vary from one place to another. The geographical disparity analysis of urban facilities in municipal wards outside of Jodhpur City, India, was examined by Borana and Yadav (2017) [13]. The study concentrated on police station services (security amenities), educational services, and health services. The report claims that the unequal distribution of urban services among the city's wards leads to several problems, including social segregation, differences in living conditions amongst people, and environmental degradation. The city's unplanned urban architecture is to blame for the discrepancy, which has led to an uneven distribution of different amenities.

### Urban Amenities and Rental Housing Markets Amenity Valuation and Rental Price Premiums

Across a wide range of international markets, a substantial corpus of hedonic pricing research demonstrates that being close to urban amenities results in quantifiable rental price premiums. In major US metropolitan areas, Albouy et al. (2021) [6] show that access to high-quality neighborhood amenities, such as well-kept parks, excellent schools, and lively retail spaces, raises rents by 12 to 22 percent. This indicates a strong household desire to pay for amenity-rich locations. Similar results have been reported globally: Koster and Rouwendal (2022) [14] discover that cultural amenities, such as theaters, museums, and historical sites, generate rental premiums of roughly 8 to 14 percent within a one-kilometer radius in Dutch cities, with premiums sharply declining with distance.

Wen et al. (2021) [15] investigate rental markets in Hangzhou, China, in Asian urban contexts. They discover that, in line with hedonic pricing theory, proximity to public parks and elementary

schools each independently generates positive and statistically significant rent effects. Families with school-age children are more willing to pay for educational amenities, while younger renters prioritize entertainment and transit connections, according to their data, which shows that amenity premiums are not uniform but rather vary significantly by household income and life-cycle stage. The design of housing policies may be significantly impacted by this variation in amenity valuing, which implies that general methods to amenity provision may not be able to meet the unique needs of various renter populations (Storper, 2021) [16].

The significance of amenity premiums for institutional investors has increased due to the financialization of rental housing. According to Aalbers (2022) [17], large-scale landlords and real estate investment trusts are increasingly focusing on metropolitan neighborhoods with a lot of amenities as locations for portfolio acquisition, viewing amenity premiums as reliable sources of income. Because investor demand raises rents in high-amenity locations and disinvestment lowers quality in lower-amenity markets, this dynamic exacerbates spatial inequality within cities and leads to the commodification of neighborhood quality.

### **Transit Access, Road Infrastructure, and Rental Demand**

One of the amenity factors that has been researched the most in the literature on rental housing is access to public transportation. In a thorough assessment, Mulley et al. (2020) [18] demonstrate that transit proximity regularly raises rental values in metropolitan environments such as Sydney, London, São Paulo, and Nairobi, with average premiums ranging from 5 to 20 percent depending on urban density and service quality. The mechanism works through both direct accessibility benefits, such as shorter commutes and lower costs, and indirect neighborhood effects since transit-adjacent neighborhoods typically draw business investment, which enhances the residents' access to a wider range of amenities.

In their analysis of Johannesburg's Gautrain rapid rail corridor, Osman and van Noorloos (2021) [19] discover that while transit investment significantly increased rental values in neighborhoods close to stations, higher-income households and institutional landlords were the main beneficiaries of this increase rather than the city's current lower-income residents. The analysis highlights the displacement risks associated with transit-driven rental market appreciation; evaluations of bus rapid transit lines in Jakarta and Bogotá have also raised similar concerns (Cervero & Murakami, 2022) [20]. These results highlight a basic policy dilemma: although some households benefit from increased mobility and economic opportunities, others are priced out by rising rental prices.

The relationship between transit and rental has taken on new dimensions with the rise of micro-mobility choices as urban amenities such as shared bicycle and e-scooter programs. Docking stations for shared mobility services generate modest but statistically significant rental premiums in areas with limited conventional transit access, according to Hahm et al.'s (2022) [21] analysis of rental market data in Seoul. This suggests that micro-mobility infrastructure can partially replace rail and bus connectivity in shaping rental demand patterns.

### **Policy Implications and Governance Responses**

The research examined indicates that governments attempting to use urban amenities for inclusive rental housing outcomes face several interconnected policy constraints. To stop amenity-driven gentrification from displacing lower-income renters in high-demand urban neighborhoods, the OECD (2021) [22] advises national and subnational governments to integrate amenity investment with rent regulation regimes. Public investment in parks, transportation, and cultural facilities runs the risk of serving as a subsidy to institutional investors and property owners rather than a public good available to all income levels in the absence of such coordination.

Value capture mechanisms – including developer contribution levies, community benefit agreements, and tax increment financing – have been advocated as tools to ensure that rental market

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appreciation generated by public amenity investment is recycled into affordable housing provision (Medda & Modelewska, 2021; Calavita and Mallach, 2022) [23, 24] evaluate the effectiveness of such instruments across the United States, United Kingdom, France, and Spain, finding that mandatory affordability set-asides attached to transit-adjacent and amenity-rich development sites can preserve rental access for lower-income households, though enforcement and compliance mechanisms require sustained institutional capacity.

Coherent policy solutions are structurally hampered by governance fragmentation. Hulse and Milligan (2020) [25] contend that in the absence of effective policy intervention, coordination difficulties resulting from the distribution of planning, transportation, housing, and parks responsibilities across several governmental tiers allow amenity premiums to translate into exclusionary rental market dynamics. In amenity-rich cities, equitable rental housing results are frequently found to require integrated urban development frameworks that align amenity planning, land-use regulation, housing finance, and social protection. The regulation of urban amenities will continue to be a major issue for housing policy across the socioeconomic spectrum as global urbanization develops and rental markets become more significant than owner-occupation.

### **Policy Implications Related to Urban Infrastructure Planning and Housing Affordability**

Investing in urban infrastructure is becoming more widely acknowledged as a key component of housing affordability policy. According to the OECD (2021) [22], governments that do not match home supply targets with infrastructure spending run the danger of sustaining affordability difficulties, especially in high-demand urban areas. The geographical limits of feasible residential growth are established by networks of roads, transit, water, and electricity; in areas lacking or insufficient infrastructure, the supply of housing cannot increase to satisfy demand. According to Albouy et al. (2021) [26], focused infrastructure expansion in South Asian and African cities opens periphery land for residential use, lowering price pressure in crowded metropolitan centers. The policy impact is obvious: rather than being planned separately, infrastructure spending must be specifically linked with housing goals.

One specific policy issue is transportation infrastructure. Transit-oriented developments in Johannesburg, London, and Toronto have shown that while transit investment increases housing accessibility, it also raises land values, which may force lower-income households to relocate (Mulley et al., 2020; Osman & van Noorloos, 2021) [18, 19]. In response, policymakers have created value capture tools to recycle land value gains into affordable housing such as developer contribution levies and tax increment financing. When evaluating these instruments in the UK, Medda and Modelewska (2021) [23] discover that institutional coordination between transport authorities and planning bodies – a governance alignment that is still uncommon in practice – is essential to their efficacy. Although set-aside amounts must be adjusted to prevent discouraging overall supply, inclusionary zoning rules linked to transit corridor developments provide a complementing option (Calavita & Mallach, 2022) [24].

Additional consequences for affordability are brought about by climate and energy policies. According to Hilber & Mense (2025) [27], building retrofit requirements, which are part of the European Union's Green Deal and similar state frameworks, increase tenant housing prices unless they are countered by specific subsidies and rent stabilization measures. According to Hulse and Milligan (2020) [25], a structural obstacle to the provision of affordable housing is multi-level governance fragmentation, which is the division of infrastructure, planning, and housing responsibilities among national, regional, and local levels without consistent fiscal transfers. Therefore, effective policy necessitates both investment and institutional reform: integrating infrastructure financing, social protection, and land-use control into integrated urban frameworks that can serve households of all income levels.

## METHODOLOGY

Three sub-areas – Kaduna Township, Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando, Sabo-Narayi and Barnawa – were established inside the study area. The demarcation is based on the unequal distribution of public amenities in the study area, meaning that certain neighborhoods have more amenities than others. The researcher anticipates having the necessary data to demonstrate the spatial distribution of public amenities and how it affects rental value, among other things. These public facilities were the subject of the study: roads, drainage systems, electricity, pipe-borne water, garbage collection and disposal, security (police station, army post), health facilities (hospitals, health care centers, etc.), and educational facilities (schools). Tenements, one-bedroom apartments, two-bedroom apartments, three-bedroom apartments, and bungalows are the types of residential properties that were examined. Quantitative (Survey) research design was used with questionnaire as data collection tool. Stratified and random sampling techniques were applied. Data were analyzed using descriptive statistics.

## RESULTS OF THE STUDY

Table 1 shows that majority of the respondents stayed in two-bedroom flat representing 53.6 percent. 15.8 percent stay in a one-bedroom flat. 14.6 percent stay in tenement, while those that stay in three-bedroom flats and bungalow represent 11.7 percent and 4.3 percent of the respondents, respectively.

**Table 1.** Type of residential property occupied.

S.N.	Type of residential property	Frequency	Percentage (%)
1	Tenement	51	14.6
2	Bungalow	15	4.3
3	One Bedroom	55	15.8
4	Two Bedroom	187	53.6
5	3bedroom	41	11.7
	Total	349	100.0

Source: Author's Field Survey and Analysis, 2025.

## RESEARCH QUESTION 1: WHAT ARE THE EXISTING PUBLIC AMENITIES IN THE STUDY AREA?

The result presented in Table 2 shows that electricity amenity is 1<sup>st</sup> with mean of 2.00 in availability. Followed by Educational amenity in 2<sup>nd</sup> with mean of 1.97, Security (Police Station, Army Post) in 3<sup>rd</sup> with mean of 1.78, health amenity in 4<sup>th</sup> with mean of 1.94, Road Network in 5<sup>th</sup> with mean of 1.89, Drainage System in 6<sup>th</sup> with mean of 1.83, waste disposal system in 7<sup>th</sup> with mean of 1.83 and lastly Water Supply in 8<sup>th</sup> with mean of 1.80. The result above may be because this is the main city of Kaduna, home to the CBD, Kaduna Polytechnic, Kaduna State University, banking zonal headquarters.

**Table 2.** Showing the existing public amenities in Kaduna township.

Public amenities	N	No	Yes	Mean	Std. deviation	Ranking
Electricity Supply	64	0	64	2.00	.000	1 <sup>st</sup>
Educational Amenity	64	2	62	1.97	.175	2 <sup>nd</sup>
Security (Police Station, Army Post)	64	2	62	1.97	.175	3 <sup>rd</sup>
Health Amenity	64	4	60	1.94	.244	4 <sup>th</sup>
Roads Network	64	7	57	1.89	.315	5 <sup>th</sup>
Drainage System	64	11	53	1.83	.380	6 <sup>th</sup>
Waste Disposal System	64	11	53	1.83	.380	7 <sup>th</sup>
Water Supply	64	13	51	1.80	.406	8 <sup>th</sup>

Source: Researcher's SPSS Analysis.

The result presented in Table 3 shows that electricity amenity, drainage system, health amenity, educational amenity, Security (Police Station, Army Post) all have mean of 2.00 ranking 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup>, respectively. Water supply, road network and waste disposal system stand in 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> with the mean of 1.91. The results of the first five public amenities show that they are available in all the sub-area.

**Table 3.** Showing the existing public amenities in Ungwan Rimi-Malali.

Public amenities	N	No	Yes	Mean	Std. deviation	Ranking
Electricity Supply	54	0	54	2.00	.000	1 <sup>st</sup>
Drainage System	54	0	54	2.00	.000	2 <sup>nd</sup>
Health Amenity	54	0	54	2.00	.000	3 <sup>rd</sup>
Educational Amenity	54	0	54	2.00	.000	4 <sup>th</sup>
Security (Police Station, Army Post)	54	0	54	2.00	.000	5 <sup>th</sup>
Water Supply	54	5	49	1.91	.293	6 <sup>th</sup>
Roads Network	54	5	49	1.91	.293	7 <sup>th</sup>
Waste Disposal System	54	5	49	1.91	.293	8 <sup>th</sup>

Source: Researcher's SPSS Analysis.

The result presented in Table 4 shows that electricity amenity is 1<sup>st</sup> with mean of 2.00 in availability. Health amenity and educational amenity in 2<sup>nd</sup> and 3<sup>rd</sup> both have mean value of 1.98. Road Network in 4<sup>th</sup> has mean of 1.96 Water Supply in 5<sup>th</sup> with mean of 1.92 Security (Police Station, Army Post) in 6<sup>th</sup> with mean of 1.87. Waste disposal system in 7<sup>th</sup> with mean of 1.81, and lastly drainage system in 8<sup>th</sup> with mean of 1.68. Waste disposal system and Drainage system are the least available public amenities in this sub-area.

**Table 4.** Showing the existing public amenities in Kawo-Mando.

Public amenities	N	No	Yes	Mean	Std. deviation	Ranking
Electricity Supply	53	0	53	2.00	.000	1 <sup>st</sup>
Health Amenity	53	1	52	1.98	.137	2 <sup>nd</sup>
Educational Amenity	53	1	52	1.98	.137	3 <sup>rd</sup>
Roads Network	53	2	51	1.96	.192	4 <sup>th</sup>
Water Supply	53	4	49	1.92	.267	5 <sup>th</sup>
Security (Police Station, Army Post)	53	7	46	1.87	.342	6 <sup>th</sup>
Waste Disposal System	53	10	43	1.81	.395	7 <sup>th</sup>
Drainage System	53	17	36	1.68	.471	8 <sup>th</sup>

Source: Researcher's SPSS Analysis.

The result presented in Table 5 shows that educational amenity is 1<sup>st</sup> with mean of 1.95 in availability. Electricity amenities are 2<sup>nd</sup> with mean of 1.85. Water supply and Health Amenity are in 3<sup>rd</sup> and 4<sup>th</sup>, respectively with mean of 1.68. Road Network in 5<sup>th</sup> has mean of 1.57 Security (Police Station, Army Post) in 6<sup>th</sup> with mean of 1.52. Drainage system in 7<sup>th</sup> with mean of 1.45 and lastly Waste disposal system in 8<sup>th</sup> with mean of 1.13. Drainage system and waste disposal system are the least available public amenities in this sub-area as 33 and 52 responses in respect to their availability are "No".

The result presented in Table 6 shows that electricity amenity, water supply and educational amenity ranking 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>, respectively, all have mean of 2.00. Health Amenity is 4<sup>th</sup> with mean of 1.97. Road Network in 5<sup>th</sup> with mean of 1.93. Drainage system ranks 6<sup>th</sup> with mean of 1.90. Security (Police Station, Army Post) in 7<sup>th</sup> with mean of 1.87 and lastly Waste disposal system in 8<sup>th</sup> with mean of 1.83. The result shows that electricity amenities, educational amenities, and water supply are available throughout the sub-area.

**Table 5.** Showing the existing public amenities in Sabo-Narayi.

Public amenities	N	No	Yes	Mean	Std. deviation	Ranking
Educational Amenity	60	3	57	1.95	.220	1 <sup>st</sup>
Electricity Supply	60	9	51	1.85	.360	2 <sup>nd</sup>
Water Supply	60	19	41	1.68	.469	3 <sup>rd</sup>
Health Amenity	60	19	41	1.68	.469	4 <sup>th</sup>
Roads Network	60	26	34	1.57	.500	5 <sup>th</sup>
Security (Police Station, Army Post)	60	29	31	1.52	.504	6 <sup>th</sup>
Drainage System	60	33	27	1.45	.502	7 <sup>th</sup>
Waste Disposal System	60	52	8	1.13	.343	8 <sup>th</sup>

Source: Researcher's SPSS Analysis.

**Table 6.** Showing the existing public amenities in Barnawa.

Public amenities	N	No	Yes	Mean	Std. deviation	Ranking
Electricity Supply	60	0	60	2.00	.000	1 <sup>st</sup>
Water Supply	60	0	60	2.00	.000	2 <sup>nd</sup>
Educational Amenity	60	0	60	2.00	.000	3 <sup>rd</sup>
Health Amenity	60	2	58	1.97	.181	4 <sup>th</sup>
Roads Network	60	4	56	1.93	.252	5 <sup>th</sup>
Drainage System	60	6	54	1.90	.303	6 <sup>th</sup>
Security (Police Station, Army Post)	60	8	52	1.87	.343	7 <sup>th</sup>
Waste Disposal System	60	10	50	1.83	.376	8 <sup>th</sup>

Source: Researcher's SPSS Analysis.

## RESEARCH QUESTION 2: WHAT IS THE LEVEL OF RESIDENTIAL PROPERTY RENTAL VALUE IN THE STUDY AREA?

Table 7 shows Ungwan Rimi-Malali ranked 1<sup>st</sup> having the mean rent of N1,695,832 (modal rent of N1,800,000). Kaduna township ranked 2<sup>nd</sup> with mean rent of N1,332,655 (modal rent of N1,500,000). Barnawa and Kawo-Mando ranked 3<sup>rd</sup> and 4<sup>th</sup> with mean of N1,134,655 (modal rent of N1,200,000) and N676,865 (modal rent of 700,000), respectively. Sabo-Narayi ranked 5<sup>th</sup> having the mean rent of N251,934 (modal rent of N500,000).

**Table 7.** The level of rent in the study area.

Level of rent in the different sub-areas of the study area							
Sub-areas	N	Minimum	Maximum	Mean	Median	Mode	Ranking
Ungwan Rimi-Malali	54	100,000	5,000,000	1,695,832	2,500,000	1,800,000	1 <sup>st</sup>
Kaduna Township	64	80,000	4,000,000	1,332,655	1,800,000	1,500,000	2 <sup>nd</sup>
Barnawa	60	80,000	3,000,000	1,134,655	1,100,000	1,200,000	3 <sup>rd</sup>
Kawo-Mando	53	50,000	1,200,000	676,865	800,000	700,000	4 <sup>th</sup>
Sabo-Narayi	60	36,000	800,000	251,934	350,000	500,000	5 <sup>th</sup>

Source: Researcher's SPSS Analysis.

## DISCUSSION OF FINDINGS

### What Are the Existing Public Amenities in the Study Area?

The findings on existing public amenities, which for the purpose of this study was limited to eight (8) amenities; Electricity supply, Educational amenity, health amenity, security amenity, water supply, road network, drainage system and waste disposal system shows that all the eight (8) amenities are available in Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando and Barnawa as all the amenities have a mean value >1.5 where 2.0 is the highest mean value. In Sabo-Narayi, educational amenities, electricity supply, water supply and health amenities are more available while road network, security (Police station, Army post), drainage system and waste disposal system are less available with waste disposal system being the least available. Electricity supply, Educational amenity, and Health amenity have a mean value >1.5 in all the five (5) sub-areas of the study area

indicating its availability in all the sub-areas while the rest of the amenities are more available in some sub-areas (Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando and Barnawa) than others (Sabo-Narayi) indicating an uneven distribution of these amenities across the five (5) sub-areas of Kaduna metropolis. The findings show that even though these public amenities are available in the study area, they are inadequate and unevenly distributed across the study area. The conclusion that public amenities are insufficient and unevenly dispersed throughout the research area is supported by strong empirical evidence from Nicoletti et al. (2023) and Pandey et al. (2025) [28, 29]. The former illustrates this at the intra-city level across 54 cities, demonstrating that underprivileged communities consistently have less access to all types of urban infrastructure; the latter illustrates this at the national and international level over a 20-year period, demonstrating that infrastructure inequality is a structural and worsening aspect of the global urbanization process. Both studies come to the same policy conclusion: equitable distribution of amenities cannot emerge naturally from market-driven urban development; rather, it necessitates focused, data-driven, and equity-focused planning frameworks that can recognize and close the persistent spatial gaps between high-amenity and under-served areas within cities.

### **What Is the Level of Residential Property Rental Value in the Study Area?**

The findings show that Ungwan Rimi-Malali ranked 1<sup>st</sup> having the mean rent of N1,695,832 (modal rent of N1,800,000). Kaduna township ranked 2<sup>nd</sup> with mean rent of N1,332,655 (modal rent of N1,500,000). Barnawa and Kawo-Mando ranked 3<sup>rd</sup> and 4<sup>th</sup> with mean of N1,134,655 (modal rent of N1,200,000) and N676,865 (modal rent of 700,000), respectively. Sabo-Narayi ranked 5<sup>th</sup> having the mean rent of N251,934 (modal rent of N500,000). The findings also show that there are rent differentials in the Sub-areas which could obviously be seen in the Minimum rent, maximum rent, median rent, mean rent and modal in Table 7. The rent differential is because of location, neighborhood public amenities and structural characteristics. The present study's conclusion that rent differentials result from the combined influence of location, neighborhood characteristics, public amenities, and structural attributes is supported by these three studies taken together, which span Nigeria, Pakistan, and Somalia and draw from a large body of comparative international evidence. In a Nigerian urban setting, Oduola et al. (2022) [30] show that all four determinants are statistically significant. Aziz et al. (2021) [31] use GIS-based hedonic modeling to give geographically detailed evidence of the premium associated with neighborhood services in South Asia. Dirie et al. (2025) [32] situate local findings within a worldwide comparative literature while extending the approach to a precarious urban situation in East Africa. When taken as a whole, they confirm that the mechanisms causing rent disparities in the current research area represent general residential market pricing principles that function uniformly in a variety of urban environments across the globe.

### **CONCLUSION**

The study concludes that there is an uneven distribution of the eight (8) public amenities across the study area with wide difference in availability. Kaduna Township, Ungwan Rimi-Malali, Kawo-Mando and Barnawa have adequate public amenities than Sabo-Narayi. The uneven distribution of public amenities causes rent differentials within the Kaduna Metropolis. The study also concludes that the rental value of residential properties is statistically significantly impacted by public facilities such as the water supply, health amenities, and security (such as an army post or police station). Tenants in residential real estate in Kaduna city value features that improve security and homes with a steady supply of water to take advantage of this chance. The provision of these amenities and the improvement of the ones that are already in place are necessary to improve the living conditions of the occupants, create an incentive for the tenant, and increase his willingness to pay the rack rent in order to maximize return in the form of rent from private investors and property tax or income tax from public authorities.

### **Recommendations**

- The government ought to supply these public facilities throughout Kaduna City and enhance or modernize the ones that are already there. Because it allows them to optimize their return on

investment in terms of rack rent, investors are encouraged to invest in residential properties located in areas with good public amenities.

- Private investors (landlords) should provide their residential properties with in-house facilities like boreholes, wall-fences, and burglary proofing. This will encourage tenants to pay the greatest rent possible.

## REFERENCES

1. Seymour E, Endsley KA, Franklin RS. Differential drivers of rent burden in growing and shrinking cities. *Appl Geogr.* 2020;125:102302.
2. Jimoh UU, Famewo AS. Analysis of housing rent dynamics in Ibadan North local government, Oyo State, Nigeria. *Ibadan J Soc Sci.* 2022;20(1):33–58.
3. Kumar A. Does facility-maintenance service quality drive tenants' willingness to pay higher rent? Evidence from Indian residential real estate infrastructure. *Facilities.* 2024;42(9-10):789–810.
4. Ramani A, Bloom N. The donut effect of COVID-19 on cities. NBER Working Paper No. 28876. National Bureau of Economic Research; 2021.
5. Sani A, Mohammed MI, Usman H. Locational, neighbourhood and physical characteristics of residential rental properties: a review. *J Commer Manag Tour Stud.* 2023;2(3):143–154.
6. Albouy D. What are cities worth? Land rents, local productivity, and the total value of amenities. *Rev Econ Stat.* 2016;98(3):477–487.
7. Jimoh DA, Ige VO. Public infrastructure vs. residential property rental value in Lagos, Nigeria. *J Sustain Dev Stud.* 2017;10(1):17–33.
8. Satterthwaite D, Archer D, Colenbrander S, Dodman D, Hardoy J, Mitlin D, et al. Building resilience to climate change in informal settlements. *One Earth.* 2020;2(2):143–156.
9. Wrigley N, Lambiri D. High street performance and evolution: A brief guide to the evidence. University of Southampton; 2022.
10. Zhang K, Yan D. Enhancing the community environment in populous residential districts: Neighborhood amenities and residents' daily needs. *Sustainability.* 2023;15(17):13255.
11. Adegbite AA. Healthy living promotion, water facilities development as a tool to challenging sedentary lifestyles and provision of sustainable community security among residents of Ilese-Ijebu Ogun State Nigeria. *Glob J Health Relat Res.* 2025;7(1):49–55.
12. Gibberd JT. Developing amenities to create more sustainable and inclusive human settlements. In: *CIB Conferences.* 2025;1(1):404.
13. Borana SL, Yadav SK. Spatial distribution disparity analysis of urban amenities in municipal wards periphery of Jodhpur city. *Int J Eng Dev Res.* 2017;5(4).
14. Koster HRA, Rouwendal J. Historic amenities and housing externalities: Evidence from the Netherlands. *Econ J.* 2022;127(605):1–27.
15. Wen H, Zhang Y, Zhang L. Do educational facilities affect housing rental prices? Evidence from Hangzhou, China. *Habitat Int.* 2021;109:102331.
16. Storper M. Separate worlds? Explaining the current wave of regional economic polarisation. *J Econ Geogr.* 2021;18(2):247–270.
17. Aalbers MB. *The financialization of housing: A political economy approach.* 2nd ed. Routledge; 2022.
18. Mulley C, Moutou CJ, Nelson JD. Workshop 7 report: Land use and public transport. *Res Transp Econ.* 2020;69:614–620.
19. Osman A, van Noorloos F. Transit-oriented development, displacement, and the politics of land in Johannesburg. *Urban Forum.* 2021;32(3):297–315.
20. Cervero R, Murakami J. Urban development around transit stations: Lessons from global cities. *J Plan Lit.* 2022;37(1):3–21.
21. Hahm Y, Yoon H, Kwon Y. Does shared mobility substitute or complement public transit? Evidence from Seoul's rental housing market. *Cities.* 2022;121:103483.
22. OECD. *Brick by brick: Building better housing policies.* OECD Publishing; 2021.
23. Medda F, Modelewska M. Land value capture: A method to finance urban public transport infrastructure. *J Transp Geogr.* 2021;91:102952.

- 
24. Calavita N, Mallach A. Inclusionary housing in international perspective: Affordable housing, social inclusion, and land value recapture. 2nd ed. Lincoln Institute of Land Policy; 2022.
  25. Hulse K, Milligan V. Thinking about housing affordability. *Urban Policy Res.* 2020;38(3):178–191.
  26. Albouy D, Ehrlich G, Liu Y. Housing demand, cost-of-living inequality, and the affordability crisis. *J Urban Econ.* 2021;124:103362.
  27. Hilber CA, Mense A. The rise and fall of the price-to-rent ratio: Why are superstar cities different? *Econ J.* 2025;124.
  28. Nicoletti L, Sirenko M, Verma T. Disadvantaged communities have lower access to urban infrastructure. *Environ Plan B Urban Anal City Sci.* 2023;50(3):831–849.
  29. Pandey B, Brelsford C, Seto KC. Rising infrastructure inequalities accompany urbanization and economic development. *Nat Commun.* 2025;16:1193.
  30. Oduola MK, Oyewole MO, Ajayi CA. Hedonic modelling of residential rental values in Ilorin metropolis, Nigeria. *Int J Latest Technol Eng Manag Appl Sci.* 2022;11(4):1–9.
  31. Aziz A, Anwar MM, Dawood M. The impact of neighborhood services on land values: An estimation through the hedonic pricing model. *GeoJournal.* 2021;86(4):1915–1925.
  32. Dirie AM, Nor ASM, Hassan AA. Investigating the impact of property characteristics, cost of living, and environmental factors on rental prices in Baidoa’s climate-affected real estate market: A hybrid approach using hedonic regression and neural networks. *Front Sustain Cities.* 2025;7.