



The Socio-Economic Impact of Urbanization on Affordable Housing in Kano State

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Abstract

Urbanization has changed the physical form and housing conditions of Kano State, especially within the Kano metropolitan area. This article examines the socio-economic effect of that growth on affordable housing. It uses recent author-based research and documented spatial data, with emphasis on studies published from 2020 onward. Remote-sensing evidence shows that Kano's built-up area increased from about 66.16 km² in 1991 to 218.71 km² in 2020, an expansion of roughly 152.55 km². Further growth is expected under existing development patterns. The article links this physical expansion with land and rental pressure, commuting costs, informal settlement growth, infrastructure demand and household income. Transport modelling for Kano shows that urban growth and transport-space demand reinforce one another, while local estate research indicates that infrastructure quality remains important to resident satisfaction. Wider Nigerian and African studies show that rapid urban growth can deepen housing inequality when formal supply, finance and serviced land do not keep pace. An Urbanization-Housing Pressure Model is proposed to show how population and spatial growth can move through land markets, transport, infrastructure and income to affect affordability. The study concludes that Kano needs a housing response that combines serviced land, better transport-housing coordination, upgrading of existing low-income areas and a wider range of affordable housing options close to employment and services. The local land-use figures are used as evidence of physical expansion, not as proof of a fixed rent effect. Household outcomes are discussed through the channels of location, travel, services, tenure and income, which require further field measurement.

Keywords: Kano State; urbanization; affordable housing; commuting cost; land-use change; spatial inequality.

1. Introduction

Kano is one of Nigeria's major urban centres, and its growth is visible in the changing use of land around the metropolis. Expansion creates opportunities for trade, housing and employment, but it also increases demand for land, roads, drainage, water, schools and transport. When housing supply and infrastructure do not grow at the same pace, lower-income households are often pushed toward smaller units, informal areas or locations farther from work (Adedeji, 2023; Enwin & Ikiriko, 2023).

The local spatial evidence is clear. Koko et al. (2021) reported an increase in built-up land from 66.16 km² in 1991 to 218.71 km² in 2020. Koko et al. (2022) also modelled further land-use change, while Otuoze et al. (2021) showed the close relationship between urban expansion and transport infrastructure. These changes affect housing because land values, travel times and service costs do not remain fixed as a city spreads outward.

Affordable housing therefore has a socio-economic meaning. A household may find a cheaper dwelling at the urban edge but spend more on transport. Another household may remain close to work but accept overcrowding or insecure tenure. Research on Nigerian housing inequality and low-income delivery shows that these trade-offs are common where formal supply is limited (Anierobi et al., 2023; Olubi & Aseyan, 2022; Odoyi & Riekkinen, 2022). Urbanization changes both the price of housing and the range of choices available.

This article studies these effects in Kano. It combines local spatial evidence with recent housing research and focuses on land and rent pressure, commuting, informal growth, infrastructure congestion, household income and access to public housing. The aim is not to describe urbanization as either good or bad. It is to identify the conditions under which growth improves opportunity without making adequate housing less affordable for ordinary households.

1.1 Statement of problem

Rapid urban growth has created serious housing problems in Kano State, especially within the Kano metropolitan area. As the city expands, more land is used for housing, roads, businesses and other activities. This has increased pressure on available land and has made it harder for many low- and middle-income households to find housing they can afford. The built-up area of Kano increased greatly between 1991 and 2020, showing how quickly the city has grown. However, the supply of affordable housing and basic services has not increased at the same rate.

Many households now face higher costs for rent, transport, water, electricity and other daily needs. People who move to cheaper areas outside the main city may spend more money and time travelling to work, schools and markets. Poor infrastructure in some growing areas also affects living conditions. At the same time, low household income and limited access to housing finance make home ownership difficult for many residents. There is therefore a need to understand how urbanization is affecting housing affordability in Kano State. This study examines how urban growth, land pressure, transport costs, infrastructure, income and housing supply combine to affect access to affordable housing in the state.

2. Literature Review

2.1 Conceptual Review: Urbanization, Household Costs and Affordable Housing

Urbanization is the growth of the urban population and the physical, economic and social expansion that comes with it. In Kano, this is visible in the increase in built-up land and the spread of development into new areas (Koko et al., 2021; Koko et al., 2022). Urban growth can create jobs and markets, but it also raises demand for land, infrastructure and housing.

Affordable housing is housing whose full cost can be managed by the household. In a large city, the full cost includes rent or mortgage, transport and basic services. A lower rent at the fringe may not be affordable if the household spends heavily on daily travel. Nigerian housing research therefore treats affordability as an income and access problem, not simply as a price label (Jiburum et al., 2021; Adedeji et al., 2023).

The socio-economic effect appears through several channels. Rising land values can push low-income households outward; congestion can raise travel time; weak infrastructure can increase private coping costs; and insecure tenure can reduce household stability. Research on formal and informal settlements and African urban exclusion shows that these pressures are unevenly distributed across social groups (Anierobi et al., 2023; Boateng & Klopp, 2024).

2.2 Theoretical Framework: Urban Land Markets and Spatial Inequality

Urban land-rent theory helps explain why location matters. Land close to jobs and major services tends to command a higher price because it reduces travel and provides better access. As a city expands, households with limited income may move toward cheaper peripheral land, but the saving can be offset by transport and infrastructure costs. Kano's observed spatial growth makes this trade-off especially relevant (Koko et al., 2021; Otuoze et al., 2021).

A spatial-inequality perspective adds the social effect. Urban development does not benefit every group in the same way. Formal investment may increase property value in one area while informal or low-income neighbourhoods remain poorly served. African research links housing exclusion with governance, tenure and access to infrastructure (Boateng & Klopp, 2024; Mhlongo et al., 2024; Anierobi et al., 2023). The article therefore reads affordability as both an income problem and a question of where people can live within the city.

2.3 Empirical Review

Table1: Recent evidence on Kano urban growth and housing pressure

Study	Focus / target	Method / model	Reported finding	Context
Koko et al. (2021)	Land-use change	Remote sensing	Built-up area expanded by about 152.55 km ² from 1991 to 2020	Kano
Koko et al. (2022)	Future land use	CA–Markov	Further expansion is expected without stronger spatial control	Kano
Otuozee et al. (2021)	Transport space	Predictive spatial model	Transport and built-up growth reinforce each other	Kano
Okopi (2021)	Peri-urban settlement	Planning study	Sustainability principles can improve fringe development	Kano / Nigeria
Adedeji (2023)	Urbanization /	Policy review	Urban growth intensifies	Nigeria

	housing		affordable-housing demand	
Anierobi et al. (2023)	Housing inequality	Survey	Formal–informal relationships reflect social and spatial inequality	Enugu
Boateng & Klopp (2024)	Urban exclusion	Governance case	Urban development can reproduce multi-dimensional exclusion	Ghana

Studies in Kano state provide the strongest evidence for the local pattern. Koko et al. (2021) measured major built-up expansion between 1991 and 2020, while Koko et al. (2022) projected continued change. Otuoze et al. (2021) linked transport space to urban growth. Okopi (2021) examined peri-urban development, and Okopi (2023) showed the importance of neighbourhood infrastructure to public-estate residents.

The wider evidence explains the likely household consequences. Nigerian studies identify income, policy, infrastructure and finance as affordability constraints (Odoyi & Riekkinen, 2022; Enwin & Ikiriko, 2023; Ogundipe et al., 2024). African research adds concerns about exclusion and low-income governance (Mhlongo et al., 2024; Boateng & Klopp, 2024). Comparative housing studies show that the policy response to urban pressure matters for access and tenure (Agayi & Karakayacı, 2020; Ebekozi et al., 2021; Yan et al., 2021).

2.4 Gap in Literature

Kano has recent research on land-use change, transport growth, peri-urban development and estate infrastructure (Koko et al., 2021; Otuoze et al., 2021; Okopi, 2021; Okopi, 2023). Nigerian studies also explain wider problems of affordable housing and urban inequality (Adedeji et al., 2023; Jiburum et al., 2021). What is less developed is a direct account of how Kano's physical expansion translates into household housing costs, commuting, tenure and service access. These issues are often studied in separate papers. This article fills the gap by linking spatial growth with socio-economic housing pressure and by organising local evidence in a model that can later be tested with household and neighbourhood data.

3. Spatial Time-Series Case Method

The Kano article uses a secondary spatial time-series case method. Its quantitative core is the published built-up area series for Kano Metropolis reported for 1991, 2000, 2010 and 2020. Those observations are interpreted together with recent studies on future land-use change, transport growth, peri-urban development, housing affordability and urban exclusion. This makes the paper partly quantitative without creating a new household survey.

3.1 Dataset and Analytical Boundary

Built-up area is used as an observable measure of physical urban expansion. The analysis does not treat built-up growth as a direct measure of housing need or poverty. Instead, it is a spatial pressure indicator that is read alongside published evidence on transport demand, land development, services and household affordability. The four observations in Table 4.1 are retained exactly as documented in the cited Kano study.

3.2 Change Calculations

Two simple calculations are used to describe the scale and pace of expansion:

$$\Delta A = A_t - A_0 \quad (1)$$

Type equation here.

$$CAGR = \left(\frac{A_t}{A_0} \right)^{\frac{1}{n}} - 1 \quad (2)$$

A_t is built-up area at the later date, A_0 is the earlier area, and n is the number of years between the observations. From 1991 to 2020, the published series rises from 66.16 km² to 218.71 km², an absolute increase of 152.55 km². The equations are descriptive and do not by themselves prove that urban growth caused a particular rent or household outcome.

3.3 Housing-Pressure Interpretation

The case evidence is read through a pressure cascade: expansion changes the location of housing and infrastructure, which can alter land cost, travel distance, service demand and the conditions under which lower-income households obtain housing. This interpretation is checked against the Kano and Nigerian studies cited in the article rather than being treated as an estimated causal model.

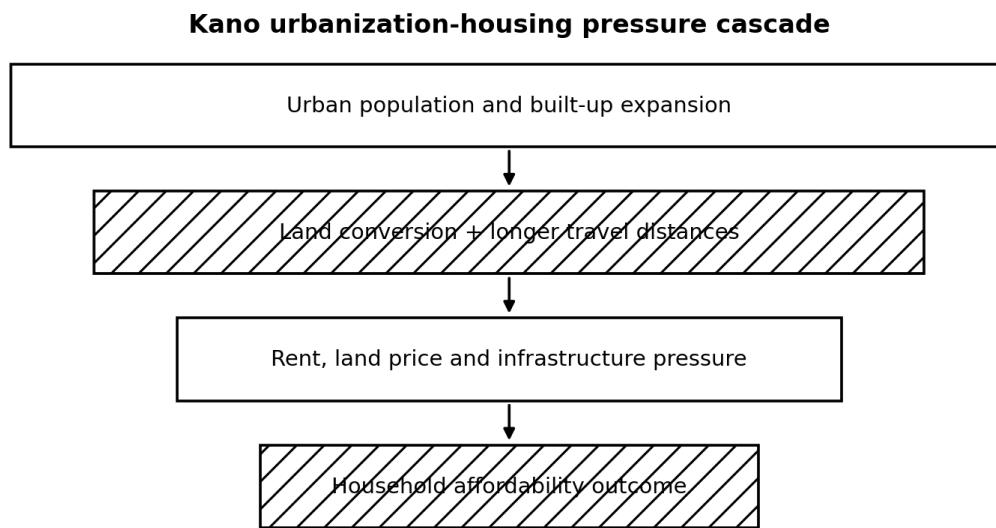


Figure 3.1. Urbanization-housing pressure cascade used for the Kano case study.

4. Spatial Change and Housing Pressure in Kano

The local evidence shows a strong outward expansion of built-up land. The social effect depends on whether housing, jobs and infrastructure expand together.

4.1 Built-Up Expansion

Kano's physical expansion is substantial. Koko et al. (2021) report built-up land rising from 66.16 km² in 1991 to 218.71 km² in 2020. Their later modelling also points to continued land-use change if present trends continue (Koko et al., 2022). This growth creates space for new housing and business, but it also stretches roads, drainage and other services over a wider area. The housing effect depends on where new development occurs and who can afford it. Expansion by itself is therefore neither good nor bad; the important question is whether land, transport and basic services keep pace with the new urban footprint.

4.2 Rental and Land-Price Pressure

As urban land becomes more desirable, owners can gain from higher values while renters and first-time buyers face greater pressure. Nigerian housing research links urban growth with affordability problems and limited formal supply (Adedeji, 2023; Enwin & Ikiriko, 2023). Kano-specific price series are still limited in the reviewed studies, so the article does not assign a numerical rent effect to urbanization. The reasonable conclusion is more careful: rapid expansion changes demand and location choices, which can raise pressure in well-served areas and push lower-income households toward cheaper peripheral or informal options.

4.3 Commuting Costs

A low rent does not guarantee a low housing burden if the household travels a long distance every day. Kano transport modelling shows that transport infrastructure and urban growth are closely connected (Otuoze et al., 2021). As housing spreads outward, workers may spend more time and money reaching jobs and services. This cost is especially important for lower-income households, which often choose cheaper land farther from central employment areas. Housing affordability in Kano should therefore be measured with transport included, not as rent or mortgage payment alone.

4.4 Informal Settlement Growth

Informal growth is one response when formal land and housing do not match demand. It can give households faster or cheaper access to shelter, but service and tenure conditions are often weaker. Okopi (2021) argues for sustainability principles in peri-urban settlements rather than treating fringe growth only as a problem to remove. Wider Nigerian evidence also shows strong links between formal and informal housing systems (Anierobi et al., 2023). Kano's planning response should combine development control with realistic land supply and upgrading, because enforcement alone cannot remove the demand that creates informal housing.

4.5 Infrastructure Congestion

Urban expansion increases the number of people using roads, drainage, water, power and social services. Where investment lags behind growth, existing systems can become congested while new areas remain poorly served. Kano estate evidence shows that residents are sensitive to neighbourhood infrastructure quality (Okopi, 2023), and community-finance research elsewhere in Nigeria shows how local groups often fill service gaps (Fateye et al., 2021). The planning issue is timing. Infrastructure corridors and budgets need to be prepared before settlement becomes dense enough to make later expansion difficult and expensive.

4.6 Household Income Constraints

Urban growth creates new economic opportunities, but income does not rise equally for every household. This matters because land, rent, transport and service costs can move faster than wages. Nigerian affordability studies show large differences in housing capacity across income groups (Jiburum et al., 2021; Olubi & Aseyan, 2022). For Kano, the policy implication is to use actual household or worker income bands when setting affordable-housing prices. A citywide average can hide the fact that lower-paid families face a much higher share of income going to housing and travel.

4.7 Access to Public Housing

Public housing can reduce some market pressure, but access depends on supply, price, eligibility and location. Policy research in Nigeria shows that delivery arrangements often limit the reach of programmes intended for lower-income households (Odoyi & Riekkinen, 2022). Evidence from other developing settings also shows that state-led housing works differently depending on land and institutional arrangements (Shin et al., 2023). Kano therefore needs to judge public housing by who receives it and whether they can remain there, not simply by the number of units announced or completed.

4.8 Observed Urban Expansion in Kano

Built-up area in Kano Metropolis reported by Koko et al. (2021) The built-up series demonstrates the physical scale of urban expansion. Built-up land rose from about 66.16 km² in 1991 to 218.71 km² in 2020, an increase of roughly 152.55 km² over the period. Koko et al. (2021) also linked land-cover change with urban thermal conditions, while Koko et al. (2022) projected continued land-use change under a CA–Markov framework. For affordable housing, the significance is indirect but important: rapid conversion changes land availability, infrastructure extension costs, travel patterns and the location choices available to lower-income households.

Table 2. Observed built-up expansion in Kano Metropolis

Year	Built-up area (km ²)
1991	66.16
2000	96.51
2010	139.26
2020	218.71

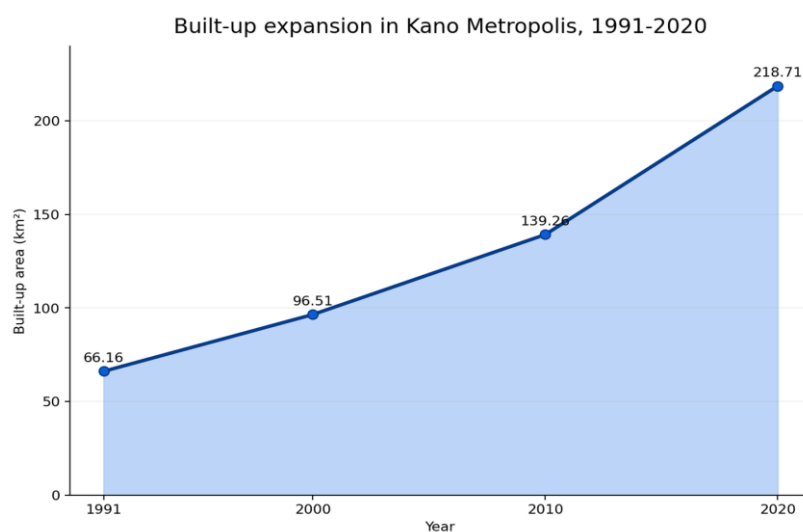


Figure 4.1. Area chart of documented built-up expansion in Kano Metropolis, 1991-2020.

5. Discussion: The Social and Economic Effects

Urbanization can create jobs and wider markets, but it can also move affordable housing farther from work and services. Both sides of the process matter.

5.1 Housing-Cost Burden

The main socio-economic effect appears in the household budget. Rent or mortgage is only one part of the burden. Transport, electricity, water and service charges can make a distant low-cost unit expensive in practice. Jiburum et al. (2021) show how affordability differs across income groups, while Howden-Chapman (2023) reminds us that housing cost cannot be separated from basic wellbeing. Kano housing studies should therefore report the combined cost of shelter and daily access. This would show whether outward urban growth is widening housing choice or simply moving costs from rent to transport and services.

5.2 Tenure Insecurity

Rapid land conversion can create uncertainty where plots are occupied through informal or weakly documented arrangements. Households may invest in a home but remain exposed to disputes or displacement as land values rise. Work from Enugu and other African cities shows that formal and informal housing systems interact and can reproduce spatial inequality (Anierobi et al., 2023; Boateng & Klopp, 2024). Kano needs clearer records and workable regularisation in suitable areas. Tenure improvement should be linked with services so that residents receive both legal security and a safer neighbourhood.

5.3 Longer Commuting

Longer commuting is one of the less visible costs of outward growth. A household may accept cheaper peripheral housing, but the gain can disappear through fares, fuel and lost time. Otuoze et al. (2021) provide direct evidence that Kano's transport system and urban expansion are connected. Planning should therefore place affordable housing near existing employment corridors where possible and reserve routes for future public transport. The aim is not to stop peripheral development; it is to prevent cheap land from becoming expensive daily living.

5.4 Informal Housing

Informal housing often fills a gap that formal systems leave open. It can be quicker, more flexible and closer to household cash flow, but it may lack drainage, secure tenure and safe access. Okopi (2021) supports a more sustainable approach to peri-urban settlement, while Anierobi et al. (2023) show that formal and informal areas should not be studied as completely separate systems. Kano should therefore combine realistic formal land supply with upgrading. Demolition without a workable housing alternative is likely to move the problem rather than solve it.

5.5 Service Inequality

Service inequality means that two households in the same city may face very different access to roads, drainage, water or public facilities. Faster urban growth can widen this gap when investment concentrates in better-served areas. Okopi (2023) shows why neighbourhood infrastructure matters to Kano residents, and Fateye et al. (2021) show how communities respond when formal provision is weak. Public investment should therefore give priority to areas where poor services and low household incomes occur together. That approach is more likely to reduce inequality than allocating infrastructure only where property values are already high.

5.6 Distribution of Benefits and Costs

Urban expansion produces winners and losers. Landowners in growing areas may gain from rising values, while tenants and first-time buyers may face higher prices. People who move outward may obtain cheaper space but pay more for transport. This uneven effect is one reason housing policy should track who benefits from growth rather than relying only on city-wide averages.

Finance can soften some pressure when it supports genuinely affordable supply. Nwachukwu et al. (2023) show how credible partnerships can support private affordable-housing delivery in Nigeria. However, finance alone cannot solve the location problem. A low-cost mortgage on a poorly connected site may still leave a household with a high total monthly burden.

Infrastructure finance is another part of the picture. Fateye et al. (2021) show the role of community associations in neighbourhood infrastructure. In fast-growing parts of Kano, such local effort may be useful, but it should complement public investment rather than substitute for basic urban services. Otherwise, lower-income communities can end up paying twice: through taxes and through self-provision.

Housing policy also shapes tenure security. Comparative research on inclusionary and public rental housing shows that access rules and tenant governance matter (Yan et al., 2021; Yan et al., 2022). State-led housing in Vietnam and post-crisis governance in Amsterdam and Miami also show that institutional choices influence who benefits from new supply (Shin et al., 2023; Wijburg, 2021).

The public-health dimension should not be ignored. Poor drainage, overcrowding, unsafe water and long journeys can affect wellbeing even when a household technically has a roof (Howden-Chapman, 2023). Affordable housing policy should therefore include service quality and travel conditions alongside rent or purchase price.

For Kano, the key planning issue is pace. The built-up area has expanded quickly, and infrastructure and housing institutions need to respond at a similar speed. If land conversion continues without coordinated service provision, later correction becomes more expensive. Regular spatial monitoring can help the state identify growth corridors before severe housing and infrastructure pressure develops.

6. Housing and Planning Priorities for Kano

Kano should coordinate housing land with transport investment. New affordable estates should be assessed against actual travel routes to employment centres, not only against land availability. Where fringe development is unavoidable, public transport and road access should be planned early so that commuting does not become a hidden housing cost. African housing reviews also support flexible affordable-housing options and mixed-income approaches where local finance and institutions can sustain them (Bhanye et al., 2024; Olaniran et al., 2024).

The city also needs more attention to existing low-income areas. Upgrading drainage, roads, water and tenure conditions can improve housing without forcing households to move farther outward. Public investment should avoid creating sharp service differences between formal estates and nearby informal neighbourhoods.

Monitoring should combine spatial and household data. Built-up area is useful, but planners also need rents, land prices, travel time, transport spending, service access and tenure information. These measures can show whether urban growth is widening housing choice or simply moving affordable households farther from opportunity.

Table 3. Housing and spatial-planning responses for Kano

Action	Application
Protect affordable land near jobs	Reserve suitable land for lower-cost housing before well-served locations are priced out of reach.
Measure rent and transport together	Use combined monthly shelter and travel cost when judging whether a location is affordable.
Upgrade viable fringe settlements	Provide tenure support, drainage, access roads and basic services where existing peri-urban housing can remain safely.
Reserve infrastructure corridors early	Protect road, drainage and utility routes before dense development makes later provision costly.
Track displacement and tenure change	Monitor whether upgrading or rising land values are forcing lower-income households out of improving areas.
Update Kano spatial evidence regularly	Use current land-use and transport data in annual housing and infrastructure planning rather than relying on old maps.

7. Conclusion

Kano's urban growth has been substantial, and the housing effect cannot be understood from land expansion alone. Growth changes prices, travel patterns, infrastructure demand and the location of affordable options. Lower-income households are most exposed when formal supply and serviced land lag behind the pace of expansion.

Planning should therefore connect housing with transport, upgrade existing low-income areas, protect serviced land for affordable supply and monitor total household costs rather than rent alone. Future research should combine the spatial evidence with household data to measure how much of the affordability burden comes from housing payments, commuting and basic services.

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