Kashere Journal of Management Sciences, Volume 8, Issue 2, September, 2025
ISSN 2636-5421, pp 96-107

EFFECTS OF LAND USE CONVERSION AND TRANSPORT ON ECONOMIC DEVELOPMENT IN KANO METROPOLIS, NIGERIA

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ABSTRACT

The study assesses the effects of land use conversion and transport affect on economic development in Kano metropolis, Kano State, Nigeria. The study used a cross sectional survey design and the data was collected using structured questionnaire. The researcher used purposive sampling procedure in selecting eight local governments in Kano state. This is as a result of intensity of combating residential land to commercial purposes. The sample size of 398 respondents was determined from the total population of 74,878 using Yamane formula. From the regressions result, the study found that the economic activities connected to road had a positive coefficient and was statistically significant. Access to road transport in marketing agricultural produce had positive coefficient and was statistically significant. Flow of business activities in the settlement had a positive coefficient and was statistically significant. Number of periodic markets had a positive coefficient and was statistically significant at 5% level. Employment generation had a positive coefficient and was statistically significant at 10% level. It was recommended that all stakeholders (community, government, NGO, private organisations) should take this very serious in reconstructing and monitoring the roads for the livelihood of the

community. That government should provide a policy that will reduce the movement of these types of old vehicles leading to delays in transportation for both people and goods.
Keyword: land used conversion, economic development

INTRODUCTION

Urbanization is a primary catalyst for residential land use change, particularly in Nigeria. The rapid population growth and various functions of cities make them significant attractors of traffic, leading to mobility problems if urban planning fails to prioritize transport (Ogunbodede, 2020). This has led to arbitrary land use conversions, where a single building or piece of land serves multiple purposes, blurring the distinction between residential and commercial areas. Roadsides and streets are also being converted into commercial centers, deviating from their original purpose due to economic factors and increased demand (Ogungbemi, 2018).

Economic development is the process of improving a nation's prosperity through increased production and distribution of goods and services, ultimately enhancing the social and material well-being of its people (Barbier, 2021). While often associated with economic growth, such as an increase in GDP, economic development encompasses a broader improvement in the economic, political, and social well-being of a population.

In Kano Metropolis, rapid urbanization has brought significant changes to economic development, threatening proper town planning and infrastructure management. This has resulted in the emergence of slums and the swift conversion of green spaces into residential or commercial areas (Okopi, Sule and Abdulsalam, 2021). The Kano State government has enacted various urban development laws and established agencies like KNUPDA to address these issues, but the misuse of urban spaces continues to have negative consequences for both the environment and its inhabitants.

Previous studies have explored the causes and patterns of residential land use change in various Nigerian cities, such as Akure and Ekiti State (Owoeye and Ogunleye 2021), but they have not empirically examined the direct effects of land use conversion and transport on economic development in Kano Metropolis. This study aims to fill that research gap by providing a data-driven analysis of how these land use changes and transport influence local economic factors. By focusing on Kano, this research goes beyond descriptive analysis to offer valuable insights for future urban planning and policy. This study examined the effect of land use conversion and transport on economic development.

Empirical review

Aggarwal and Garg (2024), examines the socioeconomic impacts of large-scale land conversion from agriculture to industry on affected households, focusing on

Sri City, an industrial hub in South India established under the SEZ Act 2005. Data from 250 households in and around Sri City were collected on socioeconomic indicators aligned with the Sustainable Development Goals using a structured survey method. Quasi-experimental methods, specifically nearest neighbor matching based on the Mahalanobis distance model, were employed for analysis. The findings indicate that affected households experience benefits, but these are not unequivocal. The study underscores the importance of project-specific factors, land acquisition strategies, and approaches to business leadership in shaping the socially sustainable outcomes of land conversion, from agriculture to industry

Abubakar and Akinola (2020) examined the effects of rural roads network on access to rural markets in Kudan Local Government Area of Kaduna State. A total of 360 questionnaires were administered across the ten (10) wards. Findings in the study include poor road network and bad surface condition of roads, high cost of transport and overloading which compelled market patrons to make use of motorcycle as their major means of transport. A large numbers of market centers and even towns were found unconnected by Direct Motorable Routes (DMR). The study therefore recommends provision of adequate funds for construction of good tarred roads and rehabilitation, community-oriented approach to rural road development interventions that will improve the provision rural transport services and ensuring regular maintenance of the roads from time to time to influence the patronage of rural markets in Kudan Local Government Area of Kaduna State.

Luis and Alejandro (2018), estimate the impact of public infrastructure on economic growth in the eight regions of Oaxaca for the period 2003-2013. The study adopted a fixed-effects model, and the results indicate that investment in infrastructure has been insufficient and misallocated. However, the social infrastructure shows the greatest impact on growth.

Purwanto *et al*. (2017), identify the factors that affecting land use conversion from settlement area into commercial area at Ir. Soekarno Street/MERR, Rungkut Madya Street, and Medokan Ayu Street in Indonesia. The study employed descriptive and Multiple regression techniques for the data analyses. From the result, the study showed that the factors that affecting land use conversion are land's value, average income of the land owner, and land use in the surrounding area. It recommends that the existing commercial activities are to be maintained and encouraged to provide a parking area on the lot.

Saheed and Obianuju (2021), examined the effect of socio-economic infrastructure of the rural areas on the rural economy in Kaduna State. The study adopts a correlation analysis, a Multicollinearity and Cronbach Alpha Reliability tests as well as regression analysis on primary data. Findings of the study reveal that there is a positive relationship between socioeconomic infrastructure and

rural economy, while the multicollinearity test shows absence of high correlation among the independent variables and the Cronbach Alpha confirms internal consistency of the variables. Furthermore, the regression analysis indicates that socio-economic infrastructure, particularly road, electricity supply, market and telecommunication infrastructure all have positive and statistically significant effects on the rural economy. The paper recommends that governments should increase efforts towards developing the infrastructure in the rural areas in order to facilitate the growth of the economy in the rural sectors.

METHODOLOGY

The current study used a cross sectional survey design and analysed the effects of land use conversion on economic development in Kano Metropolis. The data was collected using structured questionnaire. The researcher used purposive sampling procedure in selecting eight local governments in Kano state metropolis area. This could be as a result of intensity of combating residential land to commercial purposes. The sample sizes of 398 respondents were determining from the total population of 74,878 using Yamane (1967) formula. These The sample size include: Municipal (14), Nassarawa (46), Fagge (65), Gwale (9), Tarauni (118), Dala (94), Ungogo (29), Kumbotso (23). Data was analyzed using descriptive and inferential statistic techniques.

Results and Discussion

Descriptive statistics

Table 1: Socio Economic Characteristics of the respondents

Characteristics	Freq	%	Cumm Freq
Sex			
Male	194	92	91.51
Female	18	8	100.00
Age			
Less than 18	10	5	4.88
18-30	54	26	31.22
31-40	89	43	74.63
41-50	47	23	97.56
51 and above	5	2	100.00
Marital status			
Divorced	3	1	1.42
Married	192	91	91.98
Single	13	6	98.11
Widowed	4	2	100.00
Level of education			
Primary	49	24	23.75
Quarnic	58	27	50.71

Secondary	73	35	85.31
Tertiary	31	15	100.00
Occupation			
Civil Servant	3	1	1.42
Farming	115	55	55.92
Fishing	35	17	72.51
House wife	8	4	76.30
Trading	50	24	100.00
	Mean	Standard deviation	
Household Size	7.369668	4.33434	

Source: Field Survey, 2024

Table 1 showed the socio-economic characteristics of the respondents. The result depicts that majority of the respondents 92% were males. This indicates that socio economics activities in the study area was dominated by males and this could be as a result of the tradition and cultural heritage where females normally engage more in domestic activities which makes them always stay indoors. Although they could be more involved in the other activities such as processing and marketing sections of the farm enterprise the finding is in line with Saheed and Obianuju (2021), which found out that majority of the participants were male. The age of the respondents depicts that, less than 18 is 5%, 18-30 is 26%, 31-40 is 43%, and 41-50 is 23% and 51 and above is 2%. The result indicated that the respondents were within the productive age bracket of 31-40 years; this also showed they were in their active and productive age. It also implied that younger farmers have strong preference for production activities. The age was important in this study since in the study areas age has a correlation with socio economics activities. It also implied that younger respondents have strong preference for production activities. In a similar finding, Muhammed e.t al. (2021) who also discovered that, the respondents were within the age bracket of 35-45 year. The marital status of the respondents shows that, divorced 1%, Married 91%, Single 6%, Widowed 2%. This shows that most of the respondents in the study area were married; this could be attributed to the norms and culture of the people in the area that supported early marriage. This indicates that the married people would have cheaper labour than the single farmers who would have to pay for such services or do them by themselves. This result is in agreement with the findings of Saheed and Obianuju (2021), which found out that majority of the respondents were married.

Based on the level of education of the respondents' shows that Primary has 24%, religious education has 27%, Secondary has 35%, and Tertiary 15%. The result further revealed that the level of respondent's education was averagely low. This indicates that respondents had few years in school. The implication of this result

is that, few of the respondents can read and write either in Arabic or in western education which can seriously affect their decision to accept and understand developmental project with little stress. This is a similar finding of Otuoze, Hunt, and Jefferson (2021), which discovered that, level of education of the participants, was averagely low. Occupation of the respondents shows that, Civil Servant 1%, Farming 55%, Fishing 17%, House wife 4%, Trading 24%. The result shows that majority of the respondents were farmers. Farming is one of their major economics activities in the area. This is in line with the Abubakar and Akinola (2020), majority of the respondents were farmers. Household Size of the respondents shows that, means is 7.369668 and standard deviation is 4.33434. This shows that the respondents had large household size, this is not surprise as many of them had more than one wife which is permissible in their culture. However, polygamy nature of the rural farmers plays significant role for having larger household size and they see it as a good and economical way of maximizing farm returns by using family labour. It also implies that, respondents can utilize family labour in some of their socio-economic activities, hence the larger the size of the household, the more family labour is utilized which has effect on production. This result strengthens the findings of Sylvanus *et al,* (2020), This shows that the respondents had large household size.

Table 2: Land use conversion and economic development

Variable	Coeff	Stand Err	T-stats	P-Value
Economic activities connected to road	0.350	0.174	2.013	0.045
Access to road transport in marketing agric produce	0.996	0.223	4.461	0.035
Flow of business activities in the settlement	0.458	0.241	10.21	0.044
Access to road reduce transportation cost	0.233	0.216	5.710	0.039
Number of periodic markets	0.423	0.169	2.508	0.013
Employment generation	0.806	0.246	3.281	0.001
Cons	1.098	2.810	3.910	0.000
R-squared	0.967			
Adj R-squared	0.951			
Prob > F	0.057			

Source: Field survey, 2024

The results in Table 2 revealed that the Pseudo R^2 (0.966916), Adj R-squared (0.951258), F(6, 205) 1.43, Prob > F (0.0570), this showed that the estimated

model and the set of explanatory variables fit the data. The result in Table 4.4 showed that economic activities connected to road had a positive coefficient (0.350341) and was statistically significant at 5% level. This indicates that a unit increase in economic activities connected to road would lead to increase in economic development by35%.The result shows that effective road networks enhance economic activities, leading to job creation, improve access to markets and overall regional prosperity. Investment in roads is often seen as a catalyst for broader economic development efforts. This result is in line with the finding of Olufemi, *et.al.* (2013)Who revealed that, economic activities connected to road increase economic development. Access to road transport in marketing agricultural produce had positive coefficient (0.996478) and was statistically significant at 5% level. This indicates that a unit increase in access to road transport in marketing agricultural produce would lead to increase in economic development by 99%. This indicates that access to roads transportation is vital for the effective marketing of agricultural products and plays a significant role in promoting economic development particularly in rural areas. This is a similar finding of Rahman (2014), access to road transport in marketing agricultural produce increase economic development.

The result also showed that flow of business activities in the settlement had a positive coefficient (0.458098) and was statistically significant at 5% level. This indicates that a unit increase in flow of business activities in the settlement would lead to increase in economic development by45%. The result indicates that business activities collectively create a dynamic environment for economic growth and development, ensuring that communities can thrive sustainably over time. This is in line with Adedeji etal. (2014) who reported that increase in flow of business activities in the settlement lead to increase in economic development. The access to road reduces transportation cost had a positive coefficient (0.232812) and was statistically significant at 5% level. This indicates that a unit increase in access to road reduce transportation cost which lead to increase in economic development by23%. This indicates that lower transportation costs can lead to reduce prices and increasing purchasing power and overall consumption. This shows that reducing transportation costs through improved road access can stimulate economic development by enhancing efficiency, market access, competitiveness, and job creation, ultimately leading to higher living standards and economic growth and development. This is in line with Palei (2015), who also found out that access to road reduce transportation cost.

The result showed that number of periodic markets had a positive coefficient (0.423332) and was statistically significant at 5% level. This indicates that a unit increase in number of periodic markets would lead to increase in economic development by42%. The result reveals that, periodic markets can play a vital role in economic development by facilitating trade. Enhancing livelihoods and

contributing to the overall economic activities in a region. This is in line with Luis and Alejandro (2018), increase in number of periodic markets led to increase in economic development. The employment generation had a positive coefficient (0.806485) and was statistically significant at 1% level. This indicates that a unit increase in Employment generation would lead to increase in economic development by80%. This implies that economic development initiatives often lead to the creation of new businesses and expansion of existing ones, resulting in more employment opportunities. This can occur in various sectors, including agriculture, manufacturing services and technology. The finding is in line with Adeniyi, et.al. (2018) employment generation increase economic development.

Conclusion and Recommendations

The study assesses the effects of land used conversion on economic development in Kano metropolies, Kano State, Nigeria. From the regressions result, the study found that the economic activities connected to road had a positive coefficient (0.5569321) and was statistically significant at 1% level. Access to road transport in marketing agricultural produce had positive coefficient (0.2039921) and was statistically significant at 5% level. Flow of business activities in the settlement had a positive coefficient (0.4545218) and was statistically significant at 5% level. Number of periodic markets had a positive coefficient (0.4409822) and was statistically significant at 5% level. Employment generation had a positive coefficient (0.1718117) and was statistically significant at 10% level. However, economic activities connected to road had a positive coefficient (0.350341) and was statistically significant at 5% level. This indicates that a unit increase in economic activities connected to road would lead to increase in economic development by35%. Access to road transport in marketing agricultural produce had positive coefficient (0.996478) and was statistically significant at 5% level.

The following recommendations were given based on the conclusion:

The result revealed that, there is a very serious bad road condition. Hence, it is recommended that all stakeholders (community, government, NGO, private organisations) should take this very serious in reconstructing and monitoring the roads for the livelihood of the community.

The finding reveals that, older vehicles frequently break down, leading to delays in transportation for both people and goods. However, businesses relying on transportation may face increase operational costs due to the inefficiency of old vehicles. This can affect their profitability and income. It is therefore recommended that government should provide a policy that will reduce the

movement of old vehicles leading to delays in transportation for both people and goods.

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