RESEARCH ARTICLE

Effect of Road Rehabilitation on Housing Renovation in Calabar South Local Government Area, Cross River State, Nigeria

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Abstract

Infrastructure provision has been identified as a potent tool for the improvement of neighborhoods globally. One such infrastructure is a good road network. Road rehabilitation, therefore, has the capability of promoting land use development and housing development/renovation. Despite the obvious effect that road rehabilitation has on predicting property development and renovation, there appears to be a paucity of studies as it relates to Calabar South Local Government Area where road several roads have been rehabilitated. It is against this backdrop that this study was conceived. The study, therefore, analysed the relationship that exists between road rehabilitation and housing renovation in Calabar South Local Government Area between 2002 and 2021. Six residential neighbourhoods were randomly sampled. Furthermore, a total of 399 copies of the questionnaire were distributed and 389 copies were retrieved and used for analysis. Descriptive statistics such as frequencies and simple percentages were used in carrying out the analysis. It was noted that road rehabilitation drastically triggered the renovation of properties in the study area. For instance, there was an increase in the extent to which housing units were fenced, painted among other renovation exercises in housing units before and after the rehabilitation of the roads.

Keywords: Housing; Housing renovation; housing quality; housing environment; road rehabilitation

Introduction

Rehabilitation involves enhancing the quality of deteriorating neighbourhood through improving and maintaining existing infrastructure. The essence of rehabilitation is to prevent infrastructure/properties from deterioration, dilapidation and collapse. Rehabilitation of roads basically requires repairs and improvements through reconstruction and recoating of road surfaces (Sule, 2005), upgrading and construction of road surfaces that were previously in a state of disrepair (Hartoyo, 2013; Bassey, Eteng and Ewah, 2022). Holistically, roads play diverse roles in the society that makes it very importance. For instance, in rural areas, roads basically promote agricultural development and productivity (Bassey *et al.*, 2022; Bassey and Eteng, 2022) while in urban setting, roads influence the siting of land uses/developments, housing, markets etc.

While roads are largely important in predicting developments, scholars (Ajom, Etim and Bassey, 2022; Ajom, Eteng and Etim, 2022; Eteng, 2016) have showed positive relationships between road rehabilitation and property development. Eteng (2016) showed that developers are always clamouring for land in accessible area for housing development. Ajom *et al.*, (2002a) argued that road is the prime factor on which housing development depend. Their study highlighted that without accessibility, it is impossible to survive in the environment, embark on social activities among other. Against this backdrop, roads have been recognized as an integral part of the developmental process of regions (Aderamo and Magaji, 2010). Specifically, housing represent a basic need of man. It is more than mere shelter for man. In fact, housing serves as one of the indicators of a person's standard of living and his place in the society. This justifies why low density areas are characterized by accessible areas.

In Calabar South LGA, the urban renewal drive which started in 1999, brought about the development and rehabilitation of several roads. The road rehabilitation process further triggered development of various land uses include residential housing (Eteng, 2016). The level to which the roads have promoted housing renovation has not been studied in available literature. This suggest that there is a gap in knowledge that needs to be filled. Against this backdrop, the paper analysed the level to which road

rehabilitation has impacted on housing renovation in Calabar South LGA, Cross River State, Nigeria.

Literature Review

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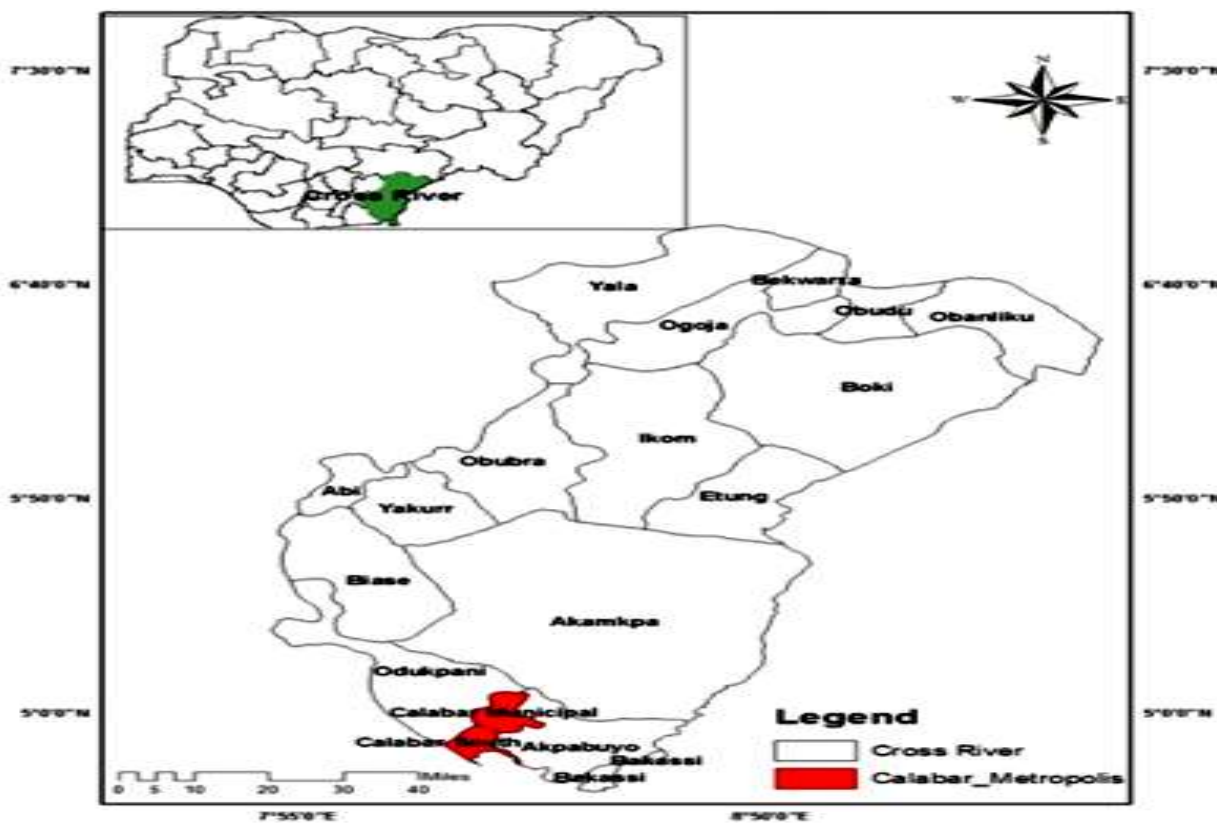
Fig. 1: Map of Cross River State showing Calabar South. Insert: Nigeria showing Cross River State

Source: Geographic Information Agency, 2020

Materials and Methods

Study Area

The study area is Calabar South Local Government Area in Cross River State. It has a total landmass of 262 km2 and it is located between Longitude 8º15` East and 8º25` East of the Greenwich Meridian and Latitude 4º54`North and 4º58`North of the Equator. Owing to its latitudinal location, the area receives abundant and constant insulation. It is located in the Southern Senatorial District of Cross River State. The population of Calabar South was 185,787 persons according to the 1991 population census (NPC, 1991). Current projections show that over 400,000 persons are residing in the area. the topography of the area is a low-lying mass rising gradually upwards towards the Calabar Municipality. The vegetation of Calabar South is characterized by mangrove and rainforest ecosystems which form part of the rich fauna and flora of the state (Afandigeh *et al.,* 2011). Figure 1 shows the geographic location of the study area.

Methods

The survey design was used in this study. Data that were collected past and present housing conditions**.** The random sampling technique was used in the selection of the sampled areas. This is because, all neighbourhoods in the study area have the possibilities of being selected as roads have been rehabilitated in all the residential districts within the last 20 years (2002-2021). Therefore, in order to avoid bias, the random sampling technique was applied. Therefore, six residential neighbourhoods were selected. The selected neighbourhoods that were Henshaw Town, Anantigha, Efut Uwanse, Cobham Town and Duke Town and Mbukpa. In order to determine the appropriate sample size, the Taro Yamane equation was applied. The equation is mathematically expressed as follows;

$$n = \frac{N}{1+N(e)^2}$$

Where; n = Sample Size, N = Finite Population, e = Level of Significance (Limit of tolerable error =0.05). In all, a sample of 399 households was taken.
The questionnaire were distributed at the household level.

Analysis and Discussions

Table 1: Condition of Wall before and After Road Rehabilitation

S/N	Condition of wall	Before road rehabilitation		After road rehabilitation	
		Frequency	Percentage	Frequency	Percentage
1	Sound/Intact	83	21.3	277	71.2
2	Cracking	121	31.1	73	18.8
3	Dilapidating	185	47.6	39	10
	Total	**389**	**100**	**389**	**100**

Source: Field Survey, 2022

Table 1shows the comparison of the walls of houses by respondents before and after the rehabilitation of the road infrastructure. It showed that only 21.3 percent were staying in houses whose walls were sound and intact before the rehabilitation of the road while the road rehabilitation necessitated the upgrading of the walls of the houses of 71.2 percent. Furthermore, the numbers of

cracking walls were reduced due to the road rehabilitation exercise as seen in the table. As well, dilapidating walls in houses before the rehabilitation of the road were higher compared to the situation after the rehabilitation exercise. From the observations, it may be deduced that the condition of walls in housing units have witnessed improvements.

Table 2: Condition of Roof before and after road rehabilitation

S/N	Condition of Roof	Before road rehabilitation		After road rehabilitation	
		Frequency	Percentage	Frequency	Percentage
1	Sound/Intact	84	21.6	241	61.9
2	Leaking	187	48.1	96	24.7
3	Sagging	79	20.3	38	9.8
4	Part missing	39	10	14	3.6
	Total	389	100	389	100

Source: Field Survey, 2022

Table 2 indicates that before the rehabilitation of the road infrastructure, the condition of the roof tops on buildings were not in good conditions. For instance, 21.6 percent respondents were staying in houses with sound and intact roof tops before the rehabilitation of the road while the figure skyrocketed as 61.9 percent respondents affirmed that their roof tops were upgraded upon after the rehabilitation of the road. Equally, 48.1 percent reported that their roof tops were leaking before the rehabilitation

of the road. After the road rehabilitation, this figure was reduced as deduced from the opinion of 24.7 percent. Furthermore, 20.3 percent roofs were sagging before the rehabilitation of the road but were reduced to 9.8 percent. In addition, 10 percent parts were missing on their roof tops before the rehabilitation of the road while 3.6 percent respondents were residing in housing units with missing parts. From the table, it is obvious that the houses with leaking, sagging and missing parts have also reduced

Table 3: Fencing before and after the rehabilitation of road

S/N	Fencing	Before road rehabilitation		After road rehabilitation	
		Frequency	**Percentage**	**Frequency**	**Percentage**
1	Fenced	98	25.2	194	49.9
2	Not fenced	291	74.8	195	50.1
		389	100	389	100

Source: Field Survey, 2022

Table 3 shows a significant difference in the extent to which residence set up fences in their compounds before and after the rehabilitation of road. The table indicated that the percentage of residents that stay in fenced

compounds rosed from 25.5 per cent before the rehabilitation of the road to 49.9 per cent after rehabilitation. The observations suggest that road rehabilitation drastically increased the level to which fences were set up in properties by house owners.

Table 4: Painting Before and after road rehabilitation

S/N	Painting	Before road rehabilitation		After road rehabilitation	
		Frequency	**Percentage**	**Frequency**	**Percentage**
1	Painted	112	28.8	204	52.4
2	Not painted	277	71.2	185	47.6
	Total	389	100	389	100

Source: Field Survey, 2022

It was revealed in table 4 that the percentage of painted compounds along rehabilitated roads increased from 28.8 percent before road rehabilitation to 52.4 percent after the rehabilitation of the roads. This is because, the rehabilitation of roads drastically encouraged property owners to fix and upgrade their structures since demand for the housing properties became increased.

Recommendations

Based on the findings of this study, the following recommendations are made;

    i.   Since road rehabilitation manifest positive effects on housing renovation, there is need to ensure regular rehabilitation of roads in the study area

    ii.   Rehabilitated roads should also be maintained to avoid collapse faster than anticipated

    iii.   There is need to incorporate public private partners in the rehabilitation process

    iv.   Development control should be taken seriously in the study area to ensure that renovation in housing units do not contradict with approved urban development pattern.

Conclusion

This paper analyzed road rehabilitation and housing renovation in Calabar South Local Government Area, Cross River State, Nigeria. It was observed that the rehabilitation of roads leads to the improvement in the conditions of housing units. For instance, the study presented a variation in the quality of building components that were assessed in the appraisal. the variation suggests that housing renovation increased drastically after road rehabilitation. From the findings, it is clear that road rehabilitation is a positive contributor to housing development. Thus, amid growing population

and the attendant need to ensure good quality housing units to shelter people within the study area, good road provision and rehabilitation can be adopted as a strategy that should be used.

Conflict of Interest: The authors declare no conflict of interest

References

Adebayo, M. (2006). The state of urban infrastructure and its effects on property values in Lagos, Nigeria. *Journal of land use Developmentstudies,* 2(1): 50-59.

Aderamo, A. and Magaji, S (2010). Rural transportation and the distribution of public facilities in Nigeria. A case of Edu Local Government Area, Kwara State. *Journal of Human Ecology,* 29(3): 171 – 179

Afandigeh, A., Ngar, G., Ewa, E., and Iwara, A. (2011). Assessment of water quality status of borehole in Calabar SouthLocal Government area, Cross River State. *International Journal of Biosciences,* 10(1): 71 – 76

Ajayi, P. (2003). *Comprehensive Geography for Senior Secondary Schools.* Lagos: A. Johnson Publishers.

Ajom, S. K., Eteng, S. U and Etim, N. M (2022). Effect of urban infrastructure on residential housing development in Calabar, Cross River State, Nigeria. *Journal of the Nigerian Institute of Town Planners,* 28(1):123-132

Ajom, S. K., Etim, N. M and **Eteng, S. U** (2022). Slum prevalence and crime incidence in Calabar, Nigeria. *Global Sustainability Research*, 1(1): 41-50

Babarinde, J. (1998). Analysis of industrial relocation to housing and infrastructural services in the Metropolitan Lagos' *The LagosJournal of Environmental Studies,* 1(1): 97-108

Bailey, L., Mokhtarian, P. L., Little, A. (2008). The Broader Connection betweenPublic Transportation, Energy Conservation and Greenhouse GasReduction. Report prepared as part of TCRP Project J-11/ Task 3 Transit Cooperative Research Program, Transportation Research Board submitted to American Public Transportation Association in http://www.apta.com/research/info/online/land_use.cfm#i.

Bassey, S. I., Eteng, S. U and Ewah, E. F (2022). Assessment of rural transportation in Abi Local Government Area of Cross River State, Nigeria. *Global Sustainability Research,* 1(2): 30-40

Bourne, L. S. (1981). *A Geography of Housing.* London: Edward Arnold

Eteng, S. U. (2016). I*mpact of road rehabilitation on housing conservation in Calabar South Local Government Area of Cross River State, Nigeria.*B.Tech Project. Cross River University of Technology, 123p

Hammer, L, Booth, D. and Love, H. (2000). *Poverty and Transport;* A Report prepared for the World Bank in collaboration with DFID, Overseas Development Institute.

Hartoyo, S. (2013). The impact of rural road rehabilitation on rice productivity and farmers income In Kemang Village, Cianjur, West Java, Indonesia. *Journal of International Society of Southeast Asian,* 19(2): 18-29

Kolawole, B., Wusomot, A., and Arowosegbe, S. (2015). The effects of urban infrastructural development on Property Value in Abeokuta, Nigeria. *Merit Research Journal of Art, Social Science and Humanities,* 3(3): 35 – 40

Nwosu, A. E. (2015) Assessment of the effect of urban infrastructure as a tool for enhancing the values of residential property in Akure. *Ethiopian Journal of Environmental Studies & Management*, 8(2): 196 – 205.

Olujimi, J. (2010). Analysis of the relationship of infrastructural facilities in the determination of rental values of residential properties in Akure, Nigeria. *Journalof Art and Social Sciences,* 10: 41 – 48.

Olujimi, J. and Bello, M. (2009). Effects of infrastructural facilities on rental values of residential property. *Journal of Social Sciences,*5(4): 332- 341

Polzin, S. E. (2004). *Relationship Between Land Use, Urban Form And Vehicle Milesof Travel: The State Of Knowledge And Implications For TransportationPlanning.* University of South Florida, Tampa; Florida Department of Transportation; Federal Highway Administration in http://www.cutr.usf.edu/pubs/TransLU%20 White%20Paper%20 Final.pdf

Sule, R. O. (2005). *Urban Planning Administration and Environmental Health Criticality.*Calabar: Thumbprints International Company

Yaro, M., Okon, A and Bissong, D (2014). The impact of rural transportation on agricultural development in Boki Local Government Area, Southern Nigeria. *Journal of Management and Sustainability,* 4(4): 125-133