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## ANALYSIS OF MOBILITY CHARACTERISTICS OF RURAL AREAS IN SUB-SAHARAN REGION: CASE STUDY FROM NIGERIA

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### ABSTRACT

*This paper looks critically at the relevance of provision of accessible road network to rural communities and the nature and characteristics of the rural roads. It also deals with the analysis of mobility situation in the study area as well as proffer some policy strategies that will help in improving the traffic and accessibility situation in the rural environment of the sub-Saharan region.*

**Key words:** Mobility, Traffic situation, Rural area, Rural road

**Keywords:** socio-economic, para-transit, employment, urban poverty, economy.

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### INTRODUCTION

The provision of accessible road network through the expansion of rural roads and its resultant effects on the economy of the rural communities is a critical factor which cannot be overemphasized when meaningful rural development is a goal in view. The welfare of the rural communities depends to a large extent on the ease of

inter and intra rural mobility and accessibility as well as to the urban environment.

Adesanya (1988) has noted rightly that an extensive, adequate and efficient rural feeder road network serves as one of the channels for the collection and exchange of goods and services, movement of people and



dissemination of information which will help in enhancing rural productivity as well as strengthening the economic, socio-cultural, political and physical life of the rural communities.

The role of transport in promoting a nation's overall development can hardly be overemphasized since it is a key factor in all aspects of development. There is hardly any aspect of a nation's development in which transport is not an essential ingredient since there is always the need to collect, assemble, move, transfer and distribute people, goods and services. Transportation is therefore a catalyst to development and this can be related to the notion of Munby (1969) when he declared that there is no escape from transport while Smith (1966) also remarked that in an exchange economy,

we can regard transport as one land that makes other land uses possible.

The objectives of this study are: to identify the distribution and condition of rural roads in the study area, identify accessibility characteristics and problems facing the rural communities and finally to examine ways of enhancing the socio-economic development of the area through improved rural accessibility.

### Methodology

The method of investigation for this study involved using both primary and secondary data. The primary data was obtained through field survey of the study area for a close observation of spatial development and administration of questionnaire among samples of the rural dwellers while the secondary data was obtained from the information

collected from the Works and Community Development Department of Ijebu North LGA, Ogun State Rural Development Board and the State Ministry of Works and Transport.

A total of 120 questionnaires were administered at ratio of 2 to 3 between Ago-Iwoye/Ifelodun and Ijebu Igbo rural areas to the dwellers. A grid system of 10km<sup>2</sup> was superimposed on the topographical map of the study area as applied by Ogunsanya (1987) and the villages in each grid line were listed and numbered while a random table was used to select 10% samples of the villages from the selected grid squares. In all 50 villages out of the 540 villages were selected for the survey. The farming families/households were chosen based on the use of random tables.

The mobility characteristics, and the socio-economic effects of the poor rural transport were analysed from the data collected from the questionnaires which were based on simple statistics supported by a series of tables and figures showing percentage distribution or the proportional distribution of some variables while the information and characteristics of the rural roads were obtained through the observed and measurement taken during the field survey.

The study area is Ijebu North Local Government Area (LGA) of Ogun State which has an absolute locations of latitude 6°55' and 7° North of the equator and longitude 3°45' and 4°05' East of Greenwich meridian and a land area of about 13,394 hectares of land (Ogun State in map). It is one of the largest local

governments and it is located at the North Central part of the state. The local government is bounded in the north by Lagelu LGA, Oyo State, in the east by Ayedade LGA, Osun State, Remo North and Ikenne LGAs to the west, Odogbolu and Ijebu-Ode LGAs to the Southwest and Ijebu East LGA to the South East.

The local government is connected to other parts of the state through the Federal trunk A roads, Ijebu-Ode to Ibadan, Ishara - Ago Iwoye - Ijebu Igbo and Timber camp while the construction of expressway is going on Ago-Iwoye - Ilishan road in order to link it with Sagamu-Benin express way and Ijebu Igbo-Idagbolu linked the local government area with Oyo state. However, there are several inter-rural roads handled by Ogun State government and the communities as

well as the Local Government.

The study area according to the 2006 population census has a population of 284, 336 and it is a semi-urban local government with the urban population taking 50.4% of the entire population while Ijebu-Igbo and Ago-Iwoye are the two urban areas. Other major settlements are Oru, Awa, Mamu, Ilaporu, Fowoseje and Agunboye. In addition there are other 540 villages (National Population Commission) scattered all over the local government area though the people regarded the villages as a mere extension of the town. The dispersed pattern of settlements makes the distribution and determination of sizes and the location of the facilities extremely difficult. Although majority of the social facilities and amenities in the study area are



provided through communal efforts of the residents.

However, the provision of some rural infrastructural facilities often requires lumpiness of expenditure which at times are beyond the reach of the rural dwellers, thus making rural area unattractive for living. However, the high percentage of people working and living in the rural areas and the population distribution pattern of the local government gives a strong support for providing rural roads to serve the bulk of the population.

Ijebu North Local Government Area has been a food basket for other areas of Ijebu-land and the people are predominantly farmers who engage in agricultural activities while a lot of people all over the country patronize the local markets. Such as Mamu, Ajegunle-

Awa, Atikori and Obada in Ijebu-Igbo as well as Ago-Iwoye for marketing of their agricultural products.

#### **ANALYSIS OF THE NATURE AND CHARACTERISTICS OF THE RURAL ROADS OF THE STUDY AREA**

From the reconnaissance survey and the field operation carried out on the characteristics of the rural roads as well as the traffic on the roads in the study area. The indices used to determine the quality, therefore include the conditions and width of the road, the period of motorability, material used in the construction of the roads and bridges. Table 1 below shows some of these attributes.

However, there are three major types of roads observable in the study area and these classifications tally with the observations made by Ogunsanya

(1997). The first set of roads are generally tracks/bush paths. The track is the most common and it is the most connected. It connects numerous paths, farms, farmsteads and villages. It is developed through clearing of bushes and constant passing by the which make it passable. The commonest vehicular traffic on these routes are bicycles and motorcycles while a large number of people make their journey on foot.

The second class of roads are the unsurfaced rural routes widened or bush paths capable of accommodating vehicles travelling in one direction at a time, linking up the villages. They are generally 3m wide. Their drainage structures were built by the communities with some financial assistance from the Local Government Authority through the Community Development

Department. The roads are substantially one lane and are often circuitous and seasonal.

The third category of the rural roads are wider than others, averagely require about 16m right of way. They are better surfaced and usually all season motorable. They feature bridges and culverts that can accommodate simultaneously two vehicles on opposing two lanes. The roads of this type are few in number. The roads construction and maintenance are usually handled administratively by the Local Government Authority who is not often financially capable to effectively carry out the task. There are some other federal and state roads of this type that traverses some of the rural regions linking up other rural and urban areas. Such roads existing in this study area are

Ibadan/Ijebu-Ode road, Isara/Ago-Iwoye road, Ago-Iwoye/Ijebu-Igbo and Ijebu-Igbo/Osun state boundaries while

the state roads are Ilishan/Ago-Iwoye, Ijebu-Igbo/Oyo state boundary and Ijebu Igbo/Ile-Ife.

**Table 1: Attributes of Rural Roads in the study Area.**

Variable	Attributes	Total distance (KM)	Percentage (%)
Condition of surface	Tarred	65.5	51
	Untarred	62.3	49
Type of surfacing	Bitumen	31.25	24
	Asphalt	34.25	27
	Laterite	62.30	49
Number of lanes	Four lane	-	-
	Two lane	65.5	51
	One lane	62.3	49
Motorable	All season	67.0	53
	Partially Seasonal	26.0	20
	Strictly Seasonal	34.8	27
Ownership of Tarred Roads	Federal Government	23.5	36
	State Government	28.0	43
	Local Government	14.0	21
Hydraulic Structures	Concrete and Steel		13
	Concrete Culverts	-	62
	Timber Bridges	-	25

*Sources: Author's field survey*



[illegible]

National roads in the country  
 have the following characteristics as shown in  
 Table 1. 91% of the roads are tarred and  
 40% are not tarred. However, 26%  
 (21.2 km) of the roads are tarred with  
 bitumen with the federal government  
 contributing 74% (29.1 km) of the  
 bitumen roads and the remaining  
 20% (12 km) are contributed by the  
 state government. While the remaining  
 2% of the roads are tarred with asphalt  
 and Oxum state and Jigawa North Local  
 Government shared in the construction.  
 There are 10.7 km of roads in the district  
 and 31% of Oxum are paved and the  
 rest 49% are the bare roads.  
 However, 13% of the road are all  
 paved, 20% are gravel with 2% are  
 gravel and the remaining  
 7% are bare roads.

On the friendship of the British

[illegible]

### FLATFAR ANALYSIS OF THE EYES

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ਇਸਤਿਫਾਦਾ ਦੇ ਵਿਆਪਕ ਅਤੇ ਆਮ ਹੋਣੇ



with a minimum drop of N150.00 per passenger without any load and this cost depends on so many variables as discussed below.

The implication of these phenomenon according to the respondents is that it reduces their enthusiasm to produce more since they could not get the produce to market while a lot of the respondents (75%) also complained about the distance covered daily to their respective farms and villages through trekking which make them more exhausted before getting to their respective farms and collecting centre. Therefore more precious time and energy are wasted and lost which could have been used for other meaningful activities. However 20% of the respondents go to their farms on bicycles and motor cycles while all of the

respondents confirmed that it does not cost them anything in term of fare to get to their farms since they mostly trekked even where transport facilities are available.

The high cost of transportation here is as a result of the following factors mentioned by the respondents which are poor condition of roads, inaccessibility of some areas because bridges and culverts in a state of disrepair which discourages motorists.. The means of transporting the farm produce to various destinations are by foot, bicycle, motor cycle, buses, pick up van, passenger and timber lorries. The distance covered, the farm produce quality and quantity, the degree of risk and the cost of transporting the products are the dominant factors that influence the choice of the modes. The distance



between one village and another is understandably often shorter than from the village to urban centre, involving an average of 3 km.

Table 2 shows the frequency of using different means of transportation for rural mobility at the sampled villages. Head portage is the most predominant means of conveyance of agricultural produce in the study area. This is as a result of the relatively short distance of the villages to each other and since vehicles are relatively scarce, the journey are often made on foot while the movement of goods from the farms to other destinations are mostly done by head portage, although the uses of foot decreases as shown in column 7 of the table. The longer the distance the less the trekking frequency.

Head portage is followed by

bicycle haulage with a mean of about 18%. Motorcycle usage is 9% followed by pick up van and passenger lorries with 3% each respectively and timber lorries with 1%. In the villages where vehicles are used, these vehicles only ply the villages on market days and the traffic on ordinary days if any are usually very light while the frequency of patronage is often reduced to zero during the rainy season in Osun area of the study area when the unsurfaced and laterite surfaced are very muddy and vehicles are liable to get stocked in the mud.

Table 2: Available means of Transportation for Rural Mobility

Types of Trips (weekly)	Timber Lorries	Passenger Lorries	Pick-up van	Motor cycle	Bicycle	Head portage	Total (%)
Farm to farm				5	15	80	100
Farm to farmstead				6	18	76	100
Farm to village			-	5	20	75	100
Farmstead to village			4	6	20	70	100
Village to village	3	8	4	12	18	55	100
Village to town	2	12	11	20	15	40	100
Mean (%)	1	3	3	9	18	66	100

*Source: Authors' field survey*

The poor development of rural roads has many adverse effects on the rural areas as well as the urban dwellers who are the major beneficiaries of the rural resources according to Olatunbosun (1973). Because of the poor accessibility and road development many agricultural products are carried by head portage to the point of marketing (see Table 2). The exercise has been described as energy sapping, time wasting and relatively unrewarding since many people engaged as porters would have used the better part of their time and energy to engage in

some other areas of agricultural activities while often time the farmers often lost day (s) per week especially during the harvesting period as a result of poor transportation.

The problem of inadequate and lack of transport facilities was seen as a serious problem by the entire respondent among other problems affecting the productivity of the people. 65 respondents representing 45%

concluded that the roads are bad while 73% of the respondents assess and agreed that the roads are very bad and the remaining 28% of the respondents concluded that the roads are fairly okay. However, 87 of the respondents representing 73% agreed that the rural roads in the study areas need urgent attention of all the arms of government.

The cost and mode of transporting the products from the farm to the final destination depend on the number of variables such as distance to be covered, size and quantity of good to be transported and availability of vehicle. However, passenger vehicles, timber lorries, pick-up van, motorcycles, bicycles and head portage are the prominent modes of transport mentioned by the respondents. There are lot of transportation problems faced by the

farmers and the traders in the study area. These problems include seasonality of the roads, high cost of transportation, and inadequate and irregular supply of transport facilities as well as inaccessibility of the study area to the outside world. This affected the quality of production and trading since they are not quite sure of the transportation of the products out of the rural areas while they have lost a lot of money as a result of high spoilage rate, wastage and poor storage facilities which over production and poor transport have caused. The traders and the middlemen in the urban areas often neglect and fail to patronize the small villages in the rural areas for the purchase of agricultural produce whenever the above problems are of common occurrence.

In some of the villages selecte



for this study, the average distance covered by the farmers and the traders from their farms and collecting centres to the nearest motorable road is 1 to 3 km as shown in Table 3 below while the study shows that the more distant the farm is from the motorable road, the fewer the people who would want such land to farm. Similarly, the resultant effect of long distance from motorable

road is a further reduction in the sizes of the farm holdings. The study however tally with the observation of Ogundana (1972) when he concluded that 71% of the Ado- Ekiti's farms are located at a distance more than 3 kms from a motorable road.

Table 3: Distance between the farms and the nearest motorable road

Distance (km)	Frequency (No of farmers)	Percentage
Under 1 km	18	15
Between 1 and 2 km	30	25
Between 2 and 3 km	36	30
Between 3 and 4 km	24	20
Between 4 and 5 km	12	10
Above 5 km	0	0
Total	120	100

Source: Authors' field survey.

## **POLICY RECOMMENDATIONS**

From this study certain basic policy recommendations can be made;

- (i) That the governments should make the issue of rural accessibility a major policy issue to be implemented with all vigor.
- (ii) That both federal and state governments should allocate more fund to all local governments so as to construct and maintain more rural roads.
- (iii) That the federal government should enact a law that all state and local governments should construct a specific minimum total length of rural roads over a given time.
- (iv) That the government should encourage community participation in the development of their areas.
- (v) That a high maintenance culture should be developed and

encouraged by the government agencies so as to have its machineries in proper order and to maintain all roads in its jurisdiction and

- (vi) finally that the construction and implementation of road programs should be preceded by a clear project conceptualization and identification through appropriate road planning and design, with road maintenance schedule and adequate monitoring in order to lengthen the road services life-span.

## **CONCLUSION**

One obvious fact that can be drawn from the findings of this study is that the rural areas in Nigeria in particular and the sub Saharan region in general are not quite accessible and have serious transportation problem which has greatly affected the production level

of the farmers and the dwellers as well as enthusiasm of the farm produce traders coming into the study area for their purchase. The flow of agricultural produce from the rural areas to the urban centres have been beset with a number of transport problems as observed in this study. Yet it is very important for the economy in the light of the existing disparity between the level of growth of the urbanization and the peoples capability to feed themselves.

This study however has shown that rural transport is very important to rural development but has been neglected far too long by the governments of the sub Saharan region. Even with the political will of the Federal Government of Nigeria in

establishing Directorate for Food Roads and Rural Infrastructural (DFRRI) in 1986, its implementation was very faulty and did not bring our expected result. However, many communities have improved their accessibility through active participation in the construction of roads and bridges through their community development association efforts in order to supplement the efforts of the government.

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