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Effect of transportation on agricultural development: A case study of Anambra west local government area of Anambra state Nigeria

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Abstract
Transportation is a crucial factor in improving agricultural productivity. Agricultural products are biological materials which unlike other materials are often vulnerable to external influences such as environment and handling techniques. Agricultural production depends heavily on elaborate bulk handling system, bringing inputs such as fertilizer, farm supplies etc. to the farm, storing products, delivering the products to the processors and finally to the ultimate consumers. The effect of transport system on agricultural development in Anambra West Local Government Area of Anambra State, Nigeria was studied. The study revealed that the Local Government Area is an agrarian community. About 77% of the respondents are engaged in agricultural production, 12% in petty trading, while the rest are engaged in one form of business or another. The prevailing mode of transportation in the survey area is head portage (48%), other modes of transportation such as water routes by boat or canoe (30%), bicycle and motorcycle (15%) and motor vehicle (5%). The only tarred road in the study area which will connect it with the rest of the state is ongoing. The predominant types of access roads in the area are bush paths (79%), followed by earthen roads (13%), while river/inland water routes (8%). The study revealed that transportation system in the area is adversely affecting agricultural development in the study area.

Keywords: transportation, agricultural development, rural area, transport mode, biological material

Introduction

Agriculture has played significant role in the economic and socio-political life of Nigeria, thus, of all the occupation of man, none has secured more gain better than agriculture; none more profitable, none more delightful and none more becoming to a free man noted Johnson (1999).

Transportation is a means of breaking down the spatial barrier between the production and consumption. Transportation is a vital aspect of the production process starting from gathering of raw materials, factors of production, mobility and distribution of the final product to consumers (Ijeoma and Ali, 2014) [3].

Notwithstanding that agriculture which formed the backbone of Nigerian economy until oil was discovered in the country in the 1960's has been neglected, agriculture still plays major role in the socio-economic and political life of the country in the areas of food security, provision of raw materials for the industries, employment, and earning foreign exchange for the country. However, regardless its impact on the country's economy, agricultural production is predominantly practiced in rural areas by the rural dwellers. Most of these rural dwellers are traditional peasant farmers who employ outmoded methods in agricultural practices. Though their individual contribution is insignificant, collectively they form an important bed-rock for economic life of the country which represents about 90% of food and fiber produced in Nigeria (Ajiboye and Afolayan, 2009) [1]. Increase in population has put pressure on nations to pay more attention on food production; hence, increase in agricultural production becomes the only option to meet up with the food and fiber requirement of the country.

Nigeria is basically an agrarian nation, thus, majority of goods to be transported are mostly agricultural products which by nature are bulky, and highly perishable. These agricultural products must be conveyed from their area of production to the places where they are needed for processing, marketing, storage or consumption with minimal delay and cost (Tunde and Adeniyi, 2012) [9]. Thus, to achieve this fit, a wide-spread transport network is required to convey these agricultural produce.

Rural transportation in Nigeria

Rural transportation can be defined as a derived demand which serves to bridge the distance between origin and destination (Tunde and Adeniyi, 2012) [9]. Thus, transportation serves as a connector while distance is a major determinant of the intensity of relationship between various sets of phenomenon distributed in space of other sectors of the economy with agriculture inclusive in space.

The dominant mode of transport in Nigeria rural space is head portage. This form of transport persists principally because of road inadequacy and the state of disrepair of the entire rural road network especially during the rainy season. All these have serious implications on the cost and volume of products being moved on the road network (Sieber, 1999) [8].

Agricultural buoyancy, productivity and development are anchored by road network infrastructure, because poorly maintained road militates against evacuation of farm products to the market, or processing centers. Also so many economic benefits will accrue to areas that are linked with good network of roads.

There are three types of routes which exist in the rural areas of Nigeria which are as follows: bush paths, un-surfaced rural roads, and surfaced rural roads. However, bush paths are very rampant and the least developed of all the routes. These bush paths link the villages with farmsteads and they are usually narrowed, winding and sometimes overgrown by weeds especially during the rainy season. Where in the rural areas motor able roads exist, they are mostly of unpaved surface, narrow in width, circuitous alignment and with low quality bridges. In most cases, they are clad with potholes or characterized by depressions and aging (Filani, 1993) [6]. Most of the rural areas in Nigeria still have no access roads while 90% of the rural roads which were estimated at between 130,000km and 160,000km nationwide were in poor condition (FERMA, 2003) [5]. Most rural roads deteriorate and become impassable during the rainy season, and this poses a threat to sustainability of rural socio-economic development. The condition of most rural roads in the country is very poor compared with inter-urban and intra-urban roads in the country.

It could be right to say that in Nigeria, the more remote a rural area is, the lower the degree of transport infrastructural development. Availability of transport facilities is a critical investment factor that stimulates economic growth through increased accessibility, its efficiency and effectiveness (Ajiboye, 1995) [2]. When these are lacking in our society, then transportation system will not be effectively utilized. These facilities include: good tarred inter-village, inter-community and inter-state roads to enhance easy conveying of agricultural products.

The economic growth of various towns like Adani in Enugu State of Nigeria and Abakaliki in Ebony State is owing to rice production which is the major crop grown in the areas. Government intervention by constructing roads that connect them with other towns and cities in Nigeria led to rapid development of the towns. Connection of Lagos and Kano by rail was to enhance transportation of groundnuts to the sea for exportation. Thus, this has led to increased production of groundnuts by farmers and development of other sectors of the economy (Ezeike, 1983).

It is a common practice to abandon agricultural products at road sides and they rot away because of lack of means of their transportation to markets in urban areas where they are in demand. The faster or quicker the highly perishable and bulky agricultural commodities are conveyed to the market for sale the better, otherwise deterioration sets in. Rural travel and transport system in most part of Nigeria still take place with great difficulties thereby compounding and worsening the problem of rural productivity and rural poverty. A famer is encouraged to increase his holding if he was able to sell his previous products profitably, otherwise he may be discouraged to increase his production. Good road network will attract low transportation fee and allows famers the opportunity to transport their agricultural products to places he will obtain better deal for his products no matter the distance involved. The ability of agricultural and forest freight to absorb motor transport cost varies according to the purpose and nature of agricultural product. Only large-scale commercial agriculture and forestry concerns and mining firms are found to be more able to absorb public transport cost than the subsistence primary producers who dwell in the rural areas. As a result of the foregoing reasons, head portage moves substantially part of the country's rural agricultural commodities (Ajiboye, 1995) [2].

Bicycles, hand drawn/push carts, pick-up vans and adapted mummy wagons are the dominant modes of public transport in most of the rural areas. Beast of burden such as mules, donkeys and camels are used widely in the northern parts of Nigeria while canoes and boats are used for transportation in riverine and navigable inland water ways throughout the country.

Materials and Methods

Study Area

The study was carried out in Anambra West Local Government Area of Anambra State of Nigeria. Anambra West Local Government Area with a population of about 221,400 people (NPC, 2016) is located in the northwestern part of Anambra State, Nigeria. The local government area consists of the following communities: Mmiata Anam, Umuoba-Abegbu Anam, Igbedor, Abegbu Anam, Umueze Anam, Oroma Etiti, Umuenwelumu Anam, Owelle, Iyiora Anam, Iyiora Anam and Nzam. The local government headquarters and seat of government is Nzam.

Anambra West Local Government Area of Anambra State has boundaries with Edo and Delta States on the west, on the north with Kogi State, on the east with Anambra East Local Government Area and on the south with Onitsha North and Onitsha South Local Government Areas. Their major occupation is agriculture. Crops mainly cultivated in the area are rice, yam, cassava, maize, potatoes, and vegetables. Fishing activities are pronounced, rearing of livestock, hand craft and petty business are also carried out by the people.

Anambra West Local Government Area is blessed with natural resources including crude oil and natural gas which is rated as having the highest crude oil reserve in Nigeria with large amount of untapped natural oil and gas at Mmiata Anam, Umudiora and Igbedor.

Data collection and Analysis

The study was aimed at examining the effect of transportation on agricultural development of the study area. The study area was divided into 5 zones for survey. Structured questionnaires designed to assist in obtaining information such as the age of respondents, level of education, size of house hold, nature of roads, occupation, size of farm holding, mode of transportation, accessibility to farms and markets were administered to 100 respondents selected from the 5 zones at 20 persons per zone. In addition to the structured questionnaires other instruments such as Focus Group Discussion (FGP) and interviews were conducted in the study area. The interview was relevant for profiling the transportation mode of the people and factors that facilitate or mare agricultural development of the area and also to reflect in the overall reality of the purpose of the study.

Gender Distribution of the Respondents

It was gathered from the survey that majority of the respondents about (75%) are males while females are 25% as depicted in Plate 1 below. This may be attributed to the unwillingness of the females' unwillingness to fill the questionnaires.

Age Distribution of Respondents

Table 1: Age distribution of respondents.

S/N	Age bracket	Percentage
1	21-30	5.41
2	31-40	12.61
3	41-50	18.92
4	51-60	27.93
5	61 and above	35.14

Table 1, shows the age distribution of the respondents. Those between ages 51-60 years and those above 61 years constitute the dominant population of respondents with combined proportion of about 63% the least age group among respondents belongs to those from 21-30 years with a population of about 5.41%. The highest population of respondents 35.14% was above 61years. This is believed to be due to the communities being rural area and most of the youths are out in the town in search for greener pastures.

Literacy Level and Educational Infrastructure

Table 2: Academic qualification of respondents.

S/N	Academic Qualification	Percentage
1	FSLC	52.25
2	Secondary School Education	24.32
3	HND/Degree	10.81
5	Technical education	4.5
6	None	8.11

Most of the respondents have some form of education (91%) as shown in Table 2. The highest number of respondents (52.25%) indicated that their highest level of academic qualification is First School Leaving Certificate (FSLC), about 8% of the respondents don't have any form of formal education. This shows that majority of the respondents have the minimum level of education that might assist them in making informed decision or participate meaningfully during discussions.

Average Household Size of Respondents

Table 3: Showing average household size of Respondents.

S/N	Family size of respondent	Percentage
1	1-2 members	13
2	3-5	45
3	6 and above	42

The study shows that most of the respondents about 45% have large sized households as shown in Table 3, about 42% of the respondents have medium sized households while 13% have household of 1-2 members. This indicates that the level of dependent on head of household would be much.

Occupation of Respondents

Table 4: Occupation of respondents.

S/N	Occupation of respondents	Percentage
1	Artisan	6
2	Civil servants	5
3	Farming	77
4	Trading	12

Table 4, shows that majority of respondents in these communities are self-employed with 12% engaged in trading, while 77% of the respondents are engaged in one form of agricultural production or another, 6% are artisans who engage in such businesses as carpentry, mason, mechanic etc, and about 5% are civil servants who are mainly teachers at the schools in the study area.

Mode of Transportation of Respondents

Table 5: showing mode of transportation of respondents

S/N	Mode of Transportation	Percentage
1.	Head portage	48
2	Bicycle/ Motorcycle	15
3	Cart drawn/push	2
4	Motor vehicle	5
5	Canoe/boat	30
6	Rail	Nil

Table 5 shows the mode of transport in the study area where it is indicated that about 48% of transportation are carried out by head portage (48%), and by canoe or boat (30%), while transport by bicycle or motorcycle is about 15%. Transport by motor vehicle is 5% while cart drawn/push is about 2%. It is also shown that transportation by head portage is more popular indicating that most of the roads in the study area are not motor able.

During the survey trips, it was discovered that the construction of the only tarred road which will connect the study area to Otuocha Aguleri in Anambra East Local Government Area and the rest of the State is ongoing.

Type of Access Roads

Table 6: showing type of access roads.

S/N	Type of Access Road	Percentage
1	Bush paths	79
2	Earthen roads	13
3	Tarred Roads	Nil
4	River/Inland water ways	8

As shown in Table 6, bush paths are predominant type of access road (79%) in the study area. Earthen roads form about 13% of the existing pathways, while river/inland water routes make up 8% of the transport routes in the study area. This indicates that transportation of agricultural products within and outside the study area would be difficult especially during the rainy season and this no doubt will negatively affect agricultural development in the area. Driving tractors and implements to the field for land preparation or conveying agricultural inputs to the farms in absence of good roads would be difficult.

Suggestions

1. All rural areas should be connected to urban centers by a network of federal and state roads and where possible with railway tracks.
2. The development and dissemination of knowledge of transportation economics and facilities so as to enable rural communities develop around the evolving transport structure.
3. A planned provision of collection centers located at strategic points within the transport structure. This will

assist farmers to easily transport their farm products to the markets and prevent abrupt shortages of raw material and food stuff arising from unexpected delays and uncertainties in the flow line.

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