

IMPACT OF ROAD TRANSPORT ON AGRICULTURAL DEVELOPMENT: A NIGERIAN EXAMPLE

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Abstract

Road transport plays an important role in agricultural development. This is because it is the major means of transporting agricultural produce from the farms to the markets as well as to various urban communities. This study examines the impact of road transport on agricultural development in Ilorin East L.G.A of Kwara State. It employs the use of both primary and secondary data. One hundred and fifty copies of questionnaire were distributed systematically to the farmers in the study area. Focus group discussion was also used to obtain information on the impact of road transport on rural development as a whole. Descriptive and analytical statistical methods were both employed to analyze the data gathered. The findings showed that road transport has both positive and negative impact on agricultural development in the study area. However, the bad conditions of the road affect cost of transportation of agricultural produce which in turn affect the rural farmers' income. This study concludes by suggesting that an improvement in road transport system will lead to increased production by farmers. Community participation in road transport development should also be encouraged in the study area.

Keywords: Rural Development, Marketing, Transportation, Agricultural Production & Road Network

Introduction

Transport is regarded as an important factor involved in agricultural development all over the world. It is the only means by which food produced at farm site is moved to different homes as well as markets. Transport creates market for agricultural produce, enhances interaction among geographical and economic regions and opens up new areas to economic focus. There are complex relationships that vary both spatially and over time between transport and development. However, for any development to take place, transport plays a crucial role. Ogunsanya (1981) observed that there are three types of routes in the rural areas viz; bush paths, unsurfaced rural roads and surfaced rural roads. However, the bush path is very common but the least developed of all the routes. Bush paths link villages with farmsteads and they are usually narrow, winding and sometimes overgrown by weeds especially during the rainy season. In a study carried by Filani (1993) in rural areas of Nigeria, it was discovered that where motorable roads exist

they are mostly of unpaved surface, narrow width, circuitous alignment and with low quality bridges. In most cases, they are either clad with potholes or characterised by depressions and sagging. Such unsurfaced roads are hardly passable during the rainy season when vehicles get stuck in mud or when the improvised bridges of cut-free trunks get swept away by flood. In another study carried out by Ogunsanya (1988) on relationship between transportation, underdevelopment and rurality, he observed that the greater the degree of rurality, the lower the level of transport development. Aderamo and Magaji (2010) noted that transportation constitutes the main avenue through which different parts of the society are linked together. Jegede (1992) cited by Ajiboye and Afolayan (2009) noted that road transport is the most common and complex network. It covers a wide range, physically convenient, highly flexible and usually the most operationally suitable and readily available means of movement of goods and passenger traffic over short, medium and long distances.

According to Ajiboye (1994), availability of transport facilities is a critical investment factor that stimulates economic growth through increased accessibility.

Paul *et al.* (2009) pointed out that the impacts of road infrastructure on agricultural output and productivity are particularly important in Sub-Saharan Africa for three reasons. First, the agricultural sector accounts for a large share of gross domestic product (GDP) in most Sub-Saharan countries (Paul *et al.* 2009). Second, poverty is concentrated in rural areas. Finally, the relatively low levels of road infrastructure and long average travel time's result in high transaction costs for sales of agricultural inputs and outputs, and this limits agricultural productivity and growth. According to Mabogunje (1971), some of the variables that determine the level of development in a given environment are easy accessibility and mobility. Transport affects agricultural marketing because it is the only means by which farmers can transport their produce to the market. Poor transportation in the rural areas has resulted in low productivity, low income and a fall in the standard of living of rural residents and high rate of poverty (Aloba, 1986). A strong relationship between transportation, underdevelopment and rurality was identified by Ogunsanya (1988). He stressed further that the greater the degree of rurality, the lower the level of transport development. When the distance of farm to the market is far and the road is rough perishable crops may be destroyed and farmers may run at a loss. It is against this background that this study examines the impact of road transport on agricultural production in Ilorin East Local Government of Kwara State, Nigeria.

Objectives

- i. Examine the effects of transportation of produce by roads on farmers' farm income.
- ii. Determine farmers' agricultural productivity level in relation to transportation of produce.
- iii. Identify different modes of transportation of agricultural produce in the study area.

Materials and Methods

Study Area

The study area is Ilorin East L.G.A and it is one of the sixteen local government areas of Kwara State. It is located on latitude 8°30' and 9°00' and longitude 4°30' and 5°00' East (fig. 1). It shares boundaries with Ilorin South L.G.A to the south, Ilorin West L.G.A to the west, Moro L.G.A to the north and Ifelodun L.G.A to the east. Oke-Oyi is the local government headquarters. The Local Government has 11 wards and three districts, Magaji-Are, Balogun Gambari/Ibagun and Sango. The climate of the area is characterized by wet and dry seasons each lasting six months. Average rainfall is about 50.8mm during the driest month (November to April). The average minimum temperature is about 21.1°C. A large proportion of the land is covered by ferruginous tropical soil which is prone to erosion. It has a land area of 486 km² and a population of 204,310 at the 2006 census. The people of the area are predominantly farmers cultivating crops such as yam, maize, cassava, guinea corn and vegetables among others. The major means of transportation is the road transport system. This shows the crucial role that transport plays in the socio-economic development of a nation. Road distance from Ilorin the state capital to Oke-Oyi L.G.A Headquarters is 16km. The major feeder roads are: Ojagboro to Ita-Adu, Ojagbooro to Duma, Balogun Fulani to Sakama, Marafa to Tepele, Iponrin to Apado roads among others of which majority are in bad condition. Other roads that link rural settlements together and to urban settlements are also in bad condition. The main rail line that links south to the north although not functioning also passes through the local government. Some of the settlements in the L.G.A are Iponrin, Apado, Oke-Oyi, Panada-Agbeyangi, Ile-Apa, Lajiki, Elesin-Meta, Budo Are and the important markets include, Ipata, Sango, Oke-Oyi, Panoda.

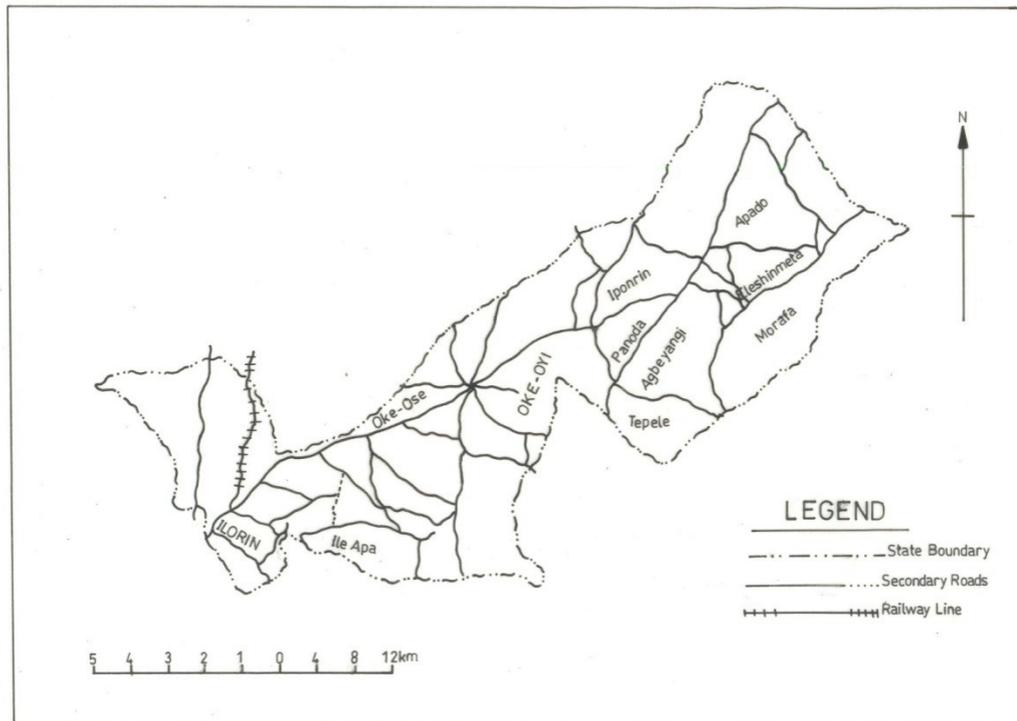


Figure 1 Map of Ilorin East L.G.A showing the sampled settlements

Research Methods

Primary and secondary sources of data such as questionnaires, focus group discussion, texts, journals as well as internet browsing were utilized for the study. One hundred and fifty respondents were selected from 10 settlements in the local government area using a systematic sampling method. In each settlement, a total of fifteen copies of questionnaire were administered to the farm families. The questionnaire sought information on the socio-economic characteristics of the respondents, farm income, cost of transportation, the type and output of agricultural production and frequency of modes of transportation used and the effects of transport on agricultural production. Interview and discussions were conducted with the transporters and farmers respectively in order to find out their own opinion about the conditions of the roads to each settlement sampled. Descriptive statistics such as tables of frequencies and percentages were used to analyze the data gathered.

Results and Discussion

Socio-economic Characteristics of Farmers

The socio-economic characteristics of the sampled farmers revealed that the larger percentage (56.7%) of the farmers in the study area are male while 43.3% are females. This implies that there are more male farmers in the study area than female. Majority of the farmers (74%) are in the economic active age between 18 and 59 and 52% of the farmers are married. About 50% of the farmers do not have formal education and this affects their innovation and diffusion of new ideas. About 30% of the farmers generate below N50, 000, 20% make (N50, 000-N100, 000), 26% earn (N101, 000-N150, 000) while about 24% of the farmers generate above N151, 000 and N250, 000. The farming status shows that 58% are full time farmers against 42% that are part-time farmers. Furthermore, the study reveals that 63.3% of the sampled farmers have over 10years farming experience. This indicates that most of the farmers sampled have enough farming experience.

Types of Crops Grown

Respondents were asked about the major crops grown in the study area. Their responses revealed that they grow crops such as cassava, cocoyam, maize, melon and yam as well as some vegetable plants. They indicated that 41% grow grains such as guinea corn, maize, millet e.t.c. About 36% of the farmers produce leguminous crops such as soya beans, cowpeas and beans. Also, 30% of the farmers indicated that they grow root crops such as yam, cassava, cocoyam among others. It was further revealed that 25% of the farmers produce vegetables such as spinach, garden egg, okro e.t.c. Only 11% of the farmers grow tree crops, this is as a result of the long gestational period of growth.

Mode of transportation of Agricultural Produce to the Town

The study revealed that farm plots were scattered all over the study area at varying distances away from the houses and motorable roads. This is in a bid to search for fertile land and also because of the land tenure system in the study area. Respondents were however asked about the different modes of transportation of produce to their houses as well as the markets (towns). Different modes

of transportation were identified by them and these included head portorage, bicycle, motorcycle and public transport (lorries, pick-up and buses) all of which are through road transport as the most predominant and readily available mode of transporting their produce from where produced to where needed. Table 1 shows that 38% used head portorage in all the settlements, 16.7% employed the use of bicycle, 22% use motorcycles, 18.7% indicated pick-up vans and 4.6% used Lorries. The effect of higher percentage use of head portorage is that it has limited the potential level of production because they can only carry certain quantity at a time. Nobody use taxis as taxis are not very common in these areas. More so, cost of engaging taxis and the quantity of produce they can carry is also important. However, 36% of the respondents indicated the use of bikes in transporting their produce from farm to different towns, 46% employed the use of Pick-up vans while only 18% indicated the use of Lorries to transport their produce from farms to towns. The reason for the use of these modes of transportation is because of the bad condition of the roads from their farm to towns.

Table 1 Means of Transportation of Agricultural Produce from Farm to House

Settlements	Head Portorage	Bicycle	Motorcycle	Taxis	Pick-up	Lorries	Total
Agbeyangi	8	7	-	-	-	-	15
Ile- Apa	4	5	6	-	-	-	15
Oke- Oyi	6	3	2	-	4	-	15
Iponrin	3	3	2	-	7	-	15
Panada	9	1	3	-	-	2	15
Apado	4	-	5	-	6	-	15
Tepele	10	-	2	-	-	3	15
Marafa	3	2	6	-	3	1	15
Eleshinmeta	2	2	4	-	7	-	15
Oke-Ose	8	2	3	-	1	1	15
Total	57	25	33	-	28	7	150
	(38)	(16.7)	(22)		(18.7)	(4.6)	(100)

Note: Percentages are in Parentheses

Table 2 Mode of transportation of Agricultural Produce from farm to the Town (Market)

Settlements	Motorcycle	Pick-up	Lorries	Total
Agbeyangi	7	8	-	15
Ile- Apa	6	4	5	15
Oke- Oyi	5	6	4	15
Iponrin	5	10	-	15
Panada	4	8	3	15
Apado	5	10	-	15
Tepele	7	5	3	15
Marafa	8	6	1	15
Eleshinmeta	4	9	2	15
Oke-Ose	3	3	9	15
Total	54 (36)	69 (46)	27 (18)	150(100)

Note: Percentages are in Parentheses

Transportation Cost of Agricultural Produce on Farmers' income

Cost of transportation of agricultural produce from the farm sites to the market has a great impact on production and income of farmers. This is because transport charges on agricultural produce vary with type of crops, the efficiency of the transport and distance travelled. Table 3 revealed that 14% spent nothing less than N20,000 annually in moving their produce to the market, 27.3% spent between N21,000 and N40,000, 38% of the farmers spent between N41,000 and N60,000, 20.7% spent between N60,000 and N80,000 annually to transport their farm produce to the

various towns where demands are high. This means a significant proportion of the farmers' income had gone to transportation and this is as a result of bad roads in these areas. Farmers that spent less than N20, 000 annually are those engaged in vegetable production. This is given the fact that majority (76%) of the farmers earned less than N150, 000 annually from their farm produce. High cost of transportation would translate to high selling price and if the price is too high when compared with other farmers from other areas, customers will not buy and this may result to selling at a loss.

Table 3 Cost of Transportation of Produce to the Town (Market) Annually

Settlements	Less than N20,000	N21,000- N40,000	N41,000- N60,000	N60,000- N80,000	Total
Agbeyangi	-	3	5	7	15
Ile- Apa	1	2	10	2	15
Oke- Oyi	-	4	6	5	15
Iponrin	-	1	6	8	15
Panada	5	4	6	-	15
Apado	6	3	4	2	15
Tepele	2	7	3	3	15
Marafa	3	8	2	2	15
Eleshinmeta	-	2	12	1	15
Oke-Ose	4	7	3	1	15
Total	21(14)	41(27.3)	57 (38)	31 (20.7)	150 (100)

Note: Percentages are in Parentheses

Farmers' Agricultural Productivity level in relation to Transportation of Produce

Some factors are responsible for the quantity of crops produced by farmers in the study area and these vary from farm to farm and settlement to settlement. Such factors include availability of transport, markets, farm size and farm input. About 59% of the sampled farmers produced 100-5000kg, while 41% produced less than 100kg. This is attributed to the small scale production of the rural farmers. Most of them produce for subsistence and only sell the excess from their production. Transportation problems and other agricultural problems they encountered have really reduced their production capacities. Transportation cost especially has limited their production capacities hence they produce only little at a time.

Transportation Problems

Respondents were asked to list the transportation problems encountered in the process of transporting their produce from the farm to their houses and markets. According to them these problems included: bad roads, high cost of transportation, irregularity of vehicles, insufficiency of vehicles, insufficient means of transportation and long distance from farm to their houses as well as markets. Table 4 showed that only 14% of the farmers trekked less than 1km from their houses to their farms. Others 30%, 38% and 18% trekked 1-4km, 4-7km, and 7-10km respectively from their various houses to their farms. All these distances take a very long time for them to get produce from source to destinations.

Table 4 Distance from farm to the House

Settlements	Less than 1km	1-4km	4-7km	7-10km	Total
Agbeyangi	5	2	7	1	15
Ile- Apa	3	4	6	2	15
Oke- Oyi	-	5	3	7	15
Iponrin	6	3	2	4	15
Panada	-	7	8	-	15
Apado	-	5	9	1	15
Tepele	-	6	5	4	15
Marafa	-	3	4	8	15
Eleshinmeta	2	6	7	-	15
Oke-Ose	5	4	6	-	15
Total	21(14)	45(30)	57(38)	27(18)	150(100)

Note: Percentages are in Parentheses

Discussions were held with farmers and transporters in the sampled settlements, from their discussions it was discovered that most of the roads linking these settlements to one another are in bad condition. It was further gathered that road transport does not only have impact on the development of the agricultural production but also on the socio-economic development of the people in all these communities and rural development as a whole. Most of them indicated that they pay high fare in order to get their produce to where needed and this in turn affects their farm income. Invariably they do not realise enough

money that can take good care of their households. The result of the interview with the transporters revealed that they prefer to be plying settlements that are well connected with good roads than those that are not connected with good roads. According to them, they pointed out that bad road conditions affect their cars and lorries to the extent they do not want to patronize the study area again. Furthermore, they indicated that their patronage of these settlements is because most of them are indigenes of these communities.

Conclusion and Recommendations

The study had extensively examined the impact of road transport on agricultural production in Ilorin East Local Government Area of Kwara State. From the study, it was revealed that road transport has a significant impact on distribution of agricultural produce in the study area. It can therefore be concluded that road transport should be improved upon so as to improve agricultural production generally in the study area. This will in turn generate more income and improve the standard of living of the farmers as well as the inhabitants of the communities under study. Furthermore, community participation should be encouraged in the construction of roads.

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