



FARMERS' PERCEPTION OF THE EFFECT OF RURAL ROAD TRANSPORTATION SYSTEM ON AGRICULTURAL PRODUCTION IN OYO STATE



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Abstract: The study examined perception of the effect of rural road transportation system on agricultural production in Oyo State. A two-stage sampling procedure was employed to collect information from one hundred and twenty nine (129) respondents. Results revealed that majority (79.8%) of the farmers were male, with an average age of 49 years. Major roads present in the study area were un-tarred single roads (74.4%). It was observed that the most common mode of transporting farm produce from farm to house or market was by wheel barrow as indicated by over half (54.3%) of the farmers. Inadequate transport services (1.49), wastage of farm produce (1.41), smashing of farm produce due to overloading (1.22), un-timeliness of vehicle drivers (1.12), exposure to robbery attacks (1.06) and long distance from farm to house or markets (1.01) were the major problems hindering movement of agricultural produce in the area. Generally, over half (54.3.0%) of the respondents had high perception of the effect of rural road transportation on agricultural production.

Conclusively, significant relationship existed between perception of effect of rural road transportation on agricultural production and age, years of farming experiences and the road transportation problems. It is therefore recommended that rural transport system linking farms and markets should be given adequate priority due to perishability, seasonality, bulkiness of agricultural products for effective transportation which guaranteed improved agricultural productivity in the study area.

Keywords: Road transportation; Oyo State; Agricultural Production; Farmers Perception

Introduction

Agriculture constitutes one of the most important aspects of economic development. Africa has great potential for agriculture. Together with agribusiness, it is estimated that agriculture currently generates \$31 billion or nearly half of the GDP of the region. This was projected to continue growing to \$1 trillion by 2030 (World Bank, 2013). Agricultural produce consists of various food crops, cash crops, livestock and poultry produce as well as the perishables such as vegetables, tomatoes, pepper and fruits among others that are produced majorly in rural settlement. A greater percentage of the Nigeria population lives in the rural area and they are mostly farmers, the rural dwellers produce the food consumed in the cities and most of the agricultural raw materials used by industries (Abur *et al.*, 2015). The quest to achieve self-sufficiency in food production is one of the highest priorities of most countries in the world today, Nigeria inclusive. In Nigeria food security is critically dependent upon effective transportation system (Barnabas, 2017). This means that a wide variety of Nigerian food would not be available without the complex transportation network system. It is therefore obvious that transportation is the live wire of economic development of every nation.

However, the potential of agriculture has not been fully explored yet in Nigeria. Nigeria is capable of feeding itself if proper inputs and mechanics are in order, such as improved rural road transportation. Considering galloping in urbanization and ever increased population growth, Nigeria as a country needs to engage in more agricultural productions. One of the major problems which hindered free flow of agricultural outputs was poor rural road transport. A transportation mode is the means of mobility used to carry goods and persons from one place to another, in this case from village/market to farm and vice versa (Kassali *et al.*, 2012).

Transportation is a vital aspect of the production process whether gathering of raw material, factor of production mobility and distribution of the final product to consumers. It

involves the movement of goods, people and services from the point of production to the selling point. Transportation is in fact a key to spatial organization of a society and therefore plays an important role to political, economic, social development and organization (Aderamo and Magaji, 2010). Transport is also significant to the society in promoting national unity and social economic integration, generating sense of togetherness, and mutual understanding in a diversified society. The importance of transport is further evident in the fact that the world's biggest cities are found in foci of transport routes - rail, water, road and air (Oni and Okanlawon, 2010).

Roads in the rural areas are important to rural communities' social, economic and political growth in Nigeria. Such roads allow connection to, among others, market places, educational institutions, health facilities, farms, and other rural areas. Normally, poor roads have unwanted effects not only on produce from agricultural activities but also on the social and economic status of rural dwellers, as economy of the rural areas depends largely on the farmer (Ikejiofor and Ali, 2014). As explained by Omollo (2015) lack of access in rural communities also slows the spread of new techniques and practices, raises the cost of production and marketing distribution, reduces communication levels and restraints access to school attendance and medical care. It also restricts flexibility and makes alienation worse (Nduati, 2017).

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 a market for agricultural produce, enhances interaction among geographical and economic regions and opens up new areas to economic focus (Tunde and Adeniyi, 2012). Oladosu *et al.* (2018) observed that there are three types of routes in the rural areas viz; bush paths, un-surfaced 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 the unpaved surface, narrow width, circuitous alignment and with low-quality bridges.

For many years, Oyo State's government has placed special focus on constructing, repairing and rehabilitating major roads across different cities within the state to the complete abandonment of rural roads. The rural road networks should be seen as part of the entire public transport system, as they are a significant component in the survival and prosperity of people living in rural areas which require maximum attention as compare to other category of roads (Ayo-Odifiri *et al.*, 2017).

Despite the fact that Nigeria is basically an agrarian nation and the majority of the goods to be transported are mostly agricultural products which according to Oladosu *et al.* (2018) are by nature often bulky, low-priced and highly perishable. The approximately truncated levels of road structure together with lingering travel time end in high costs of sales of agricultural outputs, low availability of vehicles, increased transport charges, reduced market size, limits agricultural productivity and growth. All these have an effect on agricultural produce from the farm sites to the market and income of farmers.

For the socio-economic transformation of rural areas, rural roads are very important. They provide links between rural areas and urban centers and promote the movement of goods, people and services between rural communities and other villages. The condition of rural roads in many developing countries, especially Nigeria, is very pitiful despite the contribution of rural roads to the rural economy (Nwankwo and Okeke, 2017). Tunde and Adeniyi (2012) noted that where roads are impassable, transport costs are high and there is confusion about marketing, success in agriculture and rural development. Consequently, suitable and reliable rural roads enhance rural productivity, improve physical access, reduce the vulnerability of low income people to uncertainties and anxiety, and help to build ones livelihood assets (Olagunju and Akinbile, 2020).

The quality of almost all the available land or laterite roads in remote communities of Oyo State is quite perplexing, particularly in the wet season which made it very difficult to pass through. Poor roads, besides negative impacts on travelers, farm products and congestion, often result in substantial losses of consumable farm produce, high cost of transporting farm produce and several items, and rising vehicular maintenance expenses (Babatunde *et al.*, 2014; Abur *et al.*, 2015; Oladosu *et al.*, 2018).

If agriculture will respond to the growing demand of the increasing population, it will be necessary to ensure a good road network to reduce the cost of flow of agricultural commodities to the urban areas, provide the necessary information needed for rural services to enable the agricultural sector to contribute meaningfully to the general economic growth. This will help to accommodate the increased traffic flow of input and output moving from rural areas to urban centers. So, this study assessed farmers' perception of the effect of rural transportation system on agricultural production in Oyo State.

Methodology

Area of Study

Oyo, usually referred to as Oyo State to distinguish it from the city of Oyo, is an inland State in South-Western Nigeria, with its capital at Ibadan. It is bounded in the north by Kwara State, in the east by Osun State, in the south by Ogun

State and in the west partly by Ogun State and partly by the Republic of Benin.

Oyo State covers approximately an area of 28,454 square kilometers and is ranked 14th by size. The landscape consists of old hard rocks and dome shaped hills, which rise gently from about 500 meters in the southern part and reaching a height of about 1,219 metre above sea level in the northern part. Some principal rivers such as Ogun, Oba, Oyan, Otin, Ofiki, Sasa, Oni, Erinle and Osun river originate in this highland. Oyo State contains a number of natural features including the Old Oyo National Park. The Climate is equatorial, notably with dry and wet seasons with relatively high humidity. The dry season lasts from November to March while the wet season starts from April and ends in October. Average daily temperature ranges between 25 °C (77.0 °F) and 35 °C (95.0 °F), almost throughout the year.

Agriculture is the main occupation of the people of Oyo State. The climate in the state favours the cultivation of crops like cocoa, maize, yam, cassava, millet, rice, plantain, palm produce, cashew etc. There are a number of government farm settlements in Ipapo, Ilorra, Eruwa, Ogbomosho, Iresaadu, Ijaiye, Akufo and Lalupon. There is abundance of clay, kaolin and aquamarine. There are also vast cattle ranches at Saki, Fasola and Ibadan, a dairy farm at Monatan in Ibadan and the statewide Oyo State Agricultural Development Programme with headquarters at Saki. A number of international and federal agricultural establishment are located in the state. Oyo state is known to have three reputational zones. These are forest, Savannah and derived savannah. The forest zone with high humidity favours the cultivation of tree crops such as Cocoa, Kola, Citrus and oil palm as well as arable crops like maize, cassava, Yam and Rice.

Population of the study

The target population of this study was all Oyo State Agricultural Development Programme (OYSADEP) contact farmers in Nigeria.

Sampling technique and sampling size

A two-stage sampling procedure was used to select the respondents for the study. Oyo State comprises of three (3) senatorial districts and thirty three (33) Local Government Areas (LGAs). Following a two-stage sampling procedure, in the first stage, 10% of the thirty three (33) Local Government Areas namely; Iseyin, Afijio and Ibarapa East in the senatorial districts were randomly selected making a total of 3 LGAs. In the second stage, 10% of one thousands two hundred and ninety (1,290) farm families across the three LGAs were randomly selected which produced a total sample size of one hundred and twenty nine (129) respondents for the study.

Results and Discussion

Socio-economic characteristics of the respondents

Analyses of the survey carried out showed majority (79.8%) of the farmers were males while 20.2% were females. This shows numeric strength of farmers in the study area. This may be due to the fact that males are more energetic than females and being the head of the family, had to provide for the family while females support in their own little ways. To corroborate this, Asogwa (2012) opined that men mostly engaged in farming activities for income generation and up keep of their families.

Result on age of the farmers shows that almost half (44.2%) of them were within the ages of 31-50 year with an average of 49 years. This result implies that the farming households in the study area were young farmers still in their active productive age group. This result is in agreement with Etonihu *et al.* (2013) who posited that active farming age was between 41-50 years with a mean age of 46 years.

We can also infer from the result that the wide margin between the 97.7% married and 2.3% divorced may not be

unrelated to the culture, religion and norms of the people. It also shows the importance attached to marriage institution by farmers in rural areas in Nigeria for the benefit of having children to help in farming activities. Also, over half (57.4%) of the farmers were Christians, 24.8% practiced Islam and only 17.8% were Traditionalist.

Analysis of the household size of rural farm households in the area showed majority (61.2%) had between 3 and 6 persons and a mean household size of 6 persons. This depicts a moderate household size whose energy and resource can be used to improve household income. It is generally believed that large household size is an advantage in the farming households in terms of its effect on house hold labour force.

Also, Table 1 affirmed that only 14.0% of the rural household had no formal education while 86.0% had some forms of education; an observation which contradict the increasing rates of illiteracy in rural communities. The higher rate of educational attainment is expected to positively affect productivity of rural dwellers, as educated farmers are more likely to adopt modern agricultural practices (Abur, 2014).

On annual income, about 80.6% of the rural farm households sampled earned income less than N300, 100 with an average

of N260, 542.64k. This could be because most rural inhabitants lack assets, skills and they remain unemployed and unable to invest in high income generated activities, thereby remaining poor.

The size of farmer's farm has a potential to increase their farm output and the income. Analysis of farmers' farm size in the area has shown over half (57.4%) cultivated below 3.01 acres, 22.5% cultivated between 3.01 and 4.00 acres with an average of 3.16 acres. Thus, it is in line with the findings of Fabusoro *et al.* (2010) who reported that about 90% of Nigeria's food is produced by small scale farmers who cultivate small plots of land of 0.1-2.0 hectares with crude implements and depend on rainfall rather than irrigation system.

A look at the number of years of farmers experience as presented in Table 1 shows that majority of the farmers' surveyed accounting for over 56.6% had spent between 11 to 20 years in farming system and 22.5% had spent between 21 to 30 years in farming system while 20.9% had spent between 1 to 10 years in farming system with an average of 17 years.

Table 1: Distribution of the respondents by Selected Socio-Economic Characteristics of Farming Households (n = 129)

Variables	Frequency	Percentage	Mean ± Standard deviation
Sex			
Male	103	79.8	
Female	26	20.2	
Age			
≤ 30 years	15	11.6	
31 - 40 years	20	15.5	
41 - 50 years	37	28.7	49.05±12.98
51 - 60 years	33	25.6	
> 60 years	24	18.6	
Marital status			
Married	126	97.7	
Divorced	3	2.3	
Religion			
Christianity	74	57.4	
Islam	32	24.8	
Traditional	23	17.8	
Household size			
3 – 6	79	61.2	6.16±3.11
7 – 10	39	30.2	
> 10	11	8.5	
Educational background			
No formal education	18	14.0	
Adult education	7	5.4	
Primary education	31	24.0	
Secondary education	70	54.3	
Tertiary education	3	2.3	
Annual Income			
100,000 - 200,000	47	36.4	
200,100 - 300,000	57	44.2	260,542.64±93,827.55
300,100 - 400,000	13	10.1	
> 400,000	12	9.3	
Farm size			
≤ 2.00	14	10.9	
2.01 - 3.00	60	46.5	
3.01 - 4.00	29	22.5	3.16±0.72
> 4.00	26	20.2	
Farming experience			
1 – 10	27	20.9	
11 – 20	73	56.6	17.27±6.51
21 – 30	29	22.5	
Total	129	100.0	

Source: Field Survey, 2021

Types of roads present and accessible

Distribution of respondents based on accessibility to road types is as shown in Table 2. The major roads accessible were un-tarred single roads (74.4%). There were also single tarred roads (55.0%) which are not always accessible (76.7%). These roads are rough and slippery; dusty; full of potholes; they are un-tarred and are without storm drains to channel surface runoffs. The roads are not motorable all year round, especially during the rainy season. Vehicles usually get stacked in the

mud while trying to negotiate their way to destinations and in some instances, the vehicles overturn due to overloading. About 20.9% indicated double tarred road was present in their area. The farmers always have access (23.3%) to the single tarred road and about 14.7% always have access to the double tarred road. This implies that the farmers do not have access to good road which could affect the transportation of farm produce. According to Kassali *et al.* (2012) road of most farms is the un-tarred type.

Table 2: Types of Roads present and accessible in the Study Area (n=129)

Type of road	Present road		Accessibility		
	Yes	No	Always accessible	Accessible	Not accessible
Foot path	31 (24.0)	98 (76.0)	7 (5.4)	24 (18.6)	98 (76.0)
Un-tarred single road	96 (74.4)	33 (25.6)	70 (54.3)	26 (20.2)	33 (25.6)
Single Tarred road	71 (55.0)	58 (45.0)	30 (23.3)	41 (31.8)	58 (45.0)
Double tarred road	27 (20.9)	102 (79.1)	19 (14.7)	8 (6.2)	102 (79.1)

Source: Field Survey, 2021

Means of transportation of agricultural produce

As revealed in Table 3, it was observed that the most common mode of transporting farm produce from farm to house or market was by wheel barrow as indicated by over half (54.3%) of the farmers. Other mode of transport include: motorcycle (46.5%), taxis (40.3%), bicycle (32.6%), pick-up (25.6%), lorries (20.9%) and head portorage (11.6%). The

result is similar to Afolabi *et al.* (2016) who observed that the use of pick-up van and use of car was the most common mode of transporting farm produce to market and against Morgan *et al.* (2019) as they observed that the most common mode of transporting farm produce to market was by tricycle and head portorage.

Table 3: Different means of Transportation of Agricultural Produce (n=129)

Mode	Types available		Level of use		
	Yes	No	Always	Sometimes	Never
Head portorage	15 (11.6)	114 (88.4)	12 (9.3)	3 (2.3)	114 (88.4)
Wheel barrow	70 (54.3)	59 (45.7)	54 (41.9)	16 (12.4)	59 (45.7)
Bicycle	42 (32.6)	87 (67.4)	25 (19.4)	17 (13.2)	87 (67.4)
Motorcycle	60 (46.5)	69 (53.5)	30 (23.3)	30 (23.3)	69 (53.4)
Taxis	52 (40.3)	77 (59.7)	30 (23.3)	22 (17.1)	77 (59.6)
Pick-up	33 (25.6)	96 (74.4)	16 (12.4)	15 (11.6)	98 (76.0)
Lorries	27 (20.9)	102 (79.1)	12 (9.3)	15 (11.6)	102 (79.1)

Source: Field Survey, 2021

Problems associated with transportation system

Poor accessibility and transportation problems in the rural areas of developing nations denied most rural communities access to their most basic needs such as hospital, market, telecommunication network among others. Inadequate road accessibility in the study area has posed threats to agricultural development and food security. Results in Table 4 show that

farmers claimed inadequate transport services (1.49), wastage of farm produce (1.41), smashing of farm produce due to overloading (1.22), un-timeliness of vehicle drivers (1.12), exposure to robbery attacks (1.06) and long distance from farm to house or markets (1.01) are the major problems hindering movement of agricultural produce in the area. Perhaps, this could be one of the major reasons for cost of food items in the area.

Table 4: Distribution by road transportation problems (n = 129)

Problems	Severe	Mild	Not a problem	Mean
Wastage of Farm Produce	66 (51.2)	50 (38.8)	13 (10.1)	1.41
Smashing of farm produce due to overloading	48 (37.2)	61 (47.3)	20 (15.5)	1.22
Inadequate Transport Services	74 (57.4)	44 (34.1)	11 (8.5)	1.49
Poor Road Condition	28 (21.7)	70 (54.3)	31 (24.0)	0.98
High Cost of Transportation	29 (22.5)	53 (41.1)	47 (36.4)	0.86
Insufficient vehicles	18 (14.0)	71 (55.0)	40 (31.0)	0.83
Long distance from farm to house or markets	35 (27.1)	60 (46.5)	34 (26.4)	1.01
Exposure to robbery attacks	38 (29.5)	61 (47.2)	30 (23.3)	1.06
Untimeliness of vehicle drivers	45 (34.9)	55 (42.6)	29 (22.5)	1.12
Cost of vehicle maintenance	34 (26.4)	28 (21.7)	67 (51.9)	0.74

Source: Field Survey, 2021

Perception of the effect of road transportation system on agricultural production as perceived by farmers in the study area

Table 5 indicates how respondents are distributed according to their perceived effects of rural transportation systems on agricultural production. The respondents agreed that bad roads reduces farmers' income through sale at farm-gate (4.31), bad roads discourages agro-investors (3.93), longer time spent to transport produce due to bad roads (3.78), I have to reduce production because of bad road (3.68), bad road increased

transport cost (3.43), buyers could not be accessed due to bad road (3.39), good road encourages transporters from plying routes (3.28) and good road do not expose our produce to robbery and theft due to vehicle breakdown (3.23).

As revealed on Table 6, generally, the over half (54.3.0%) of the respondents had low or unfavourable perception effect of rural road transportation of agricultural products on agricultural production. This implies that most of the respondents had negative effect of rural road transportation of agricultural products on agricultural production.

Table 5: Effect of rural road transportation of agricultural products on agricultural production

Effect of road transportation system on agricultural production	SA	A	U	D	SD	Mean
Bad roads reduces farmers' income through sale at farm-gate	67 (51.9)	44 (34.1)	12 (9.3)	3 (2.3)	3 (2.3)	4.31
Bad roads discourages agro-investors	34 (26.4)	58 (45.0)	31 (24.0)	6 (4.7)	-	3.93
Longer time spent to transport produce due to bad roads	38 (29.5)	40 (31.0)	36 (27.9)	15 (11.6)	-	3.78
Bad road Increased transport cost	26 (20.2)	38 (29.5)	37 (28.7)	22 (17.1)	6 (4.7)	3.43
I have to reduce production because of bad road	36 (27.9)	45 (34.9)	25 (19.4)	17 (13.2)	6 (4.7)	3.68
Buyers could not be accessed due to bad road	22 (17.1)	49 (38.0)	25 (19.4)	23 (17.8)	10 (7.8)	3.39
Good road encourages transporters from plying routes	24 (18.6)	31 (24.0)	39 (30.2)	27 (20.9)	8 (6.2)	3.28
Good road do not expose our produce to robbery and theft due to vehicle breakdown	12 (9.3)	45 (34.9)	39 (30.2)	27 (20.9)	6 (4.7)	3.23
Quality of farm produce is not affected during transportation	3 (2.3)	25 (19.4)	30 (23.3)	34 (26.4)	37 (28.7)	2.40
Wastage of highly perishable produce due to unavailability of timely markets	16 (12.4)	25 (19.4)	27 (20.9)	25 (19.4)	36 (27.9)	2.69
Easy accessibility to improved farm inputs and other govt. agro credit schemes & intervention	16 (12.4)	28 (21.7)	18 (14.0)	39 (30.2)	28 (21.7)	2.73
Adequate accessibility to other infrastructural amenities	12 (9.3)	19 (14.7)	14 (10.9)	24 (18.6)	60 (46.5)	2.22

Source: Field Survey, 2021

Table 6: Perception index

Variables	Frequency	Percentage
Low	70	54.3
High	59	45.7
Total	129	100.0

Source: Field Survey, 2021

Hypotheses of the study

Relationship between farmers' perception of the effect of rural transportation system on agricultural production and their socio-economic characteristics

Table 7 shows that there is a significant relationship between the perceived effect of rural road transportation on agricultural production, age ($\chi^2=16.280$; $p<0.05$) and years of farming experiences ($\chi^2=18.770$; $p<0.05$). The implication of this

result is that the respondents' perceived effect of rural road transportation on agricultural production is most likely to be influenced by age and years of farming experience. This is in line with the study of Adefalu *et al.* (2015) who indicated a significant relationship between the respondents' perceptions of the effect of the poor road transportation network on crop production and their age, educational level, and years of experience.

Table 7: Chi-square Analysis of relationship between farmers' perception of the effect of rural transportation system on agricultural production and selected socioeconomics characteristics

Variables	Level of perception		χ^2 Value	df	p value	Remark
	Low (%)	High (%)				
Sex			0.002	1	0.962	Not Significant
Male	56 (80.0)	47 (79.7)				
Female	14 (20.0)	12 (20.3)				
Age			16.280*	4	0.003	Significant
≤ 30yrs	2 (2.9)	13 (22.0)				
31-40yrs	12 (17.1)	8 (13.6)				
41-50yrs	26 (37.1)	11 (18.6)				
51-60yrs	20 (28.6)	13 (22.0)				
Above 60yrs	10 (14.3)	14 (23.7)				
Marital status			3.644	1	0.056	Not Significant
Married	70 (100.0)	56 (94.9)				
Divorced	0 (0.0)	3 (5.1)				
Religion			0.321	2	0.852	Not Significant
Christianity	41 (58.6)	33 (55.9)				
Islam	16 (22.9)	16 (27.1)				
Traditional	13 (18.6)	10 (16.9)				
Household size			1.984	2	0.371	Not Significant
3-6	39 (55.7)	40 (67.8)				
7-10	24 (34.3)	15 (25.4)				
> 10	7 (10.0)	4 (6.8)				
Education			5.221	4	0.265	Not Significant
No formal education	7 (10.0)	11 (18.6)				
Adult education	4 (5.7)	3 (5.1)				
Primary education	15 (21.4)	16 (27.1)				
Secondary education	41 (58.6)	29 (49.2)				
Tertiary education	3 (4.3)	0 (0.0)				
Annual income			3.474	3	0.324	Not Significant
100,000-200,000	27 (28.6)	20 (33.9)				
200,100-300,000	33 (47.1)	24 (40.7)				
300,100-400,000	4 (5.7)	9 (15.3)				
> 400,000	6 (8.6)	6 (10.2)				
Farm size			2.073	3	0.557	Not Significant
≤ 2.00	8 (11.4)	6 (10.2)				
2.01-3.00	36 (51.4)	24 (40.7)				
3.01-4.00	13 (18.6)	16 (27.1)				
> 4.00	13 (18.6)	13 (22.0)				
Farming experience			18.770*	2	0.000	Significant
1-10yrs	22 (31.4)	5 (8.5)				
11-20yrs	41 (58.6)	32 (54.2)				
21-30yrs	7 (10.0)	22 (37.3)				
Total	70 (100.0)	59 (100.0)				

Source: Field Survey, 2021

Significant @ $p<0.05$ level

Relationship between farmers' perception of the effect of rural transportation system on agricultural production and the road transportation problems

Table 8 shows that significant relationship existed between the perceived effect of rural road transportation on agricultural production and smashing of farm produce due to overloading ($r=0.205$; $p<0.05$), insufficient vehicles ($r=0.275$; $p<0.05$) and

exposure to robbery attacks ($r=0.319$; $p<0.05$). This is an indication that road transportation problems such as smashing

of farm produce due to overloading, insufficient vehicles and exposure to robbery attacks did influence the level of effect of rural road transportation on agricultural production.

Table 8: Spearman ranked correlation analysis of relationship between farmers' perception of the effect of rural transportation system on agricultural production and the road transportation problems

Variables	r	p value	Remark
Wastage of Farm Produce	0.146	0.099	Not Significant
Smashing of farm produce due to overloading	0.205*	0.020	Significant
Inadequate Transport Services	0.036	0.682	Not Significant
Poor Road Condition	-0.155	0.080	Not Significant
High Cost of Transportation	-0.082	0.358	Not Significant
Insufficient vehicles	0.275**	0.002	Significant
Long distance from farm to house or markets	-0.099	0.266	Not Significant
Exposure to robbery attacks	0.319**	0.000	Significant
Untimeliness of vehicle drivers	0.012	0.889	Not Significant
Cost of vehicle maintenance	0.093	0.293	Not Significant

Source: Field Survey, 2021

Conclusion and Recommendations

The study concludes that majority of the farmers in Oyo State were male, middle aged, married and educated. Generally, the over half of the respondents had high perception effect of rural road transportation on agricultural production. Significant relationship existed between perception of the effect of rural road transportation on agricultural production and age, years of farming experiences and the road transportation problems. In view of the above, it is recommended that rural transport system linking farms and markets should be given adequate priority due to perishability, seasonality, bulkiness of agricultural products. Agriculture cannot thrive without flexible transportation system; hence, effective transport system is important.

Adequate storage facilities should be made available to farmers in rural areas to allow them store and prevent the deterioration of farm produce in the event of a delayed vehicle which, in effect, increases the return of farmers.

In addition, extension agents and other stakeholders should focus more of their attention on building the capacity of the farmers on processing initiatives, which will not only help them to cope with the rigour of transporting their bulky goods but will also ensure product availability for a longer period in markets and better income for the farmers.

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