



## Effect of Transportation on the Marketing of Agricultural Products in Jos North

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**ABSTRACT:** This study examined the effect of transportation in the marketing of agricultural products in selected markets in Jos North LGA of Plateau State. The main objectives of the study are to ascertain the relationship between efficient transportation system and the cost of agricultural products and to determine the impact of transportation on the availability of agricultural products in Jos North LGA. Survey research method was employed. Respondents were drawn from Gada Biu, Farin Gada, and Statellite Markets. Tables and percentages were used for data presentation. Findings show that transportation plays an important role in the distribution of agricultural products, helps in creating market for agricultural product and reduces spoilage and wastage of farm products. It also shows that improvement in transportation can encourage farmers to work hard in increasing production. The study recommends that Federal, State and Local Governments should provide adequate transportation system which will help in conveying the farm products from their places of production to places of consumption. All transportation facilities in the country should be upgraded by Federal Government and there should be general improvement in the transportation system which will encourage farmers to work harder.

**Key Words:** Effect, Transportation, Marketing, Agricultural Products, Jos.

### I. INTRODUCTION

The quest to achieve self-sufficient food production is one of the highest priorities of most countries in the world today, Nigeria inclusive. This challenge also called food security is a major problem in developing economies such as Nigeria. In Nigeria food security is critically dependent upon effective transportation system. 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. Based on the above reason, the importance of road transport system cannot be over emphasized especially with regard to agricultural products. However, problems relating to rural inaccessibility have continued to hamper food availability in Nigeria. Agriculture which is one of the major sectors of every economy has been accorded so much importance by the Federal Government of Nigeria. Accordingly, successive administrations have introduced a number of incentives to encourage the transportation of agricultural products from areas of production to areas of intense demand. In Plateau State, for example, the state government embarked on massive opening of feeder roads to link the state capital, Jos to encourage easy transportation of agricultural products from the rural areas to the city. Similarly, the state government also operates her own transport company that helps greatly in moving goods and persons from the rural areas to the urban center.

Evidently, in Plateau State, (Jos North to be precise) the ultimate goals of the agricultural policy is the attainment of growth in its value chain of the sub-sector for the overall socio-economic development of the rural areas. However, market opportunities in Plateau State in particular are constrained by poor road network which adversely affect accessibility and personal mobility. Although not often accounted for, farmers' production activities and cost include cost of trekking between home and field, often long distance, which is quite apart from the transport requirement of marketing agricultural products. The proportion of production cost represented by transport and travel cost usually increases rapidly with distance between villages and fields. These constraints of road transport limit farmers' production in fields to the villages. Other factors include inadequacy of infrastructure, high cost of production and poor transport system due to bad roads in Jos North Local Government of Plateau State.

It is against the above background that the study seeks to critically investigate the impact of transportation on the marketing of agricultural products in Jos. Agriculture which used to be the main stay and backbone of the nation's economy during the pre-colonial and colonial era has unarguably become the forgotten sector of the economy as more attention has been shifted to the oil sector. Nobody wants to identify with agricultural products that used to be the commodity for local and international markets. The story is the same in almost all the states of the Federation including Plateau State where people focus mostly on government jobs. Programmes and schemes which include Plateau Agricultural Development Programmes (PADP), Livestock, Veterinary, Fisheries and the Integrated, Rural Development and Direct Production activities were established to promote the effect of agricultural activities in the state but schemes which were established are not given attention because only few people in the state engage in agricultural production while others engage in business activities and office work.

According to Ade (2004) "Transportation is the means by which goods and people are carried from one place to another". With transportation, raw materials are brought to the factory for processing, while the finished goods are delivered to the wholesalers, retailers and the final consumers. Imagine how distribution of agricultural products and business activities would look like without transportation system, which enables long distance to be reached in a short time. Distribution of agricultural products between town, state and nations is made easy and smooth because of transportation system. Ade's view is that the importance of transportation in distribution of agricultural products, business activities and other activities that affect human beings cannot be over emphasized.

Odedoku, Odokogo and Ogoji (2002) define transportation as a means of moving goods from their place of production to their place of consumption "Improvement in transportation accounts largely for the improved inter-relationship and inter-dependence between the people in the country." It is now easy to transport goods from places of abundance to places of scarcity. For example, it is now relatively easy to move bags of groundnuts from Kano where groundnuts are abundant to Onitsha where groundnuts are scarce; indeed transportation is indisputably the live wire of distribution and commerce in Nigeria.

Nigeria has witnessed an upsurge in commerce and industry. The result of this upsurge is a massive improvement in various means of transportation within the country.

Igwe et al. (1999) define transportation as the means by which movement is made from one place to another. When you walk or travel from one place to another you use a form of transportation. Transportation started in the past by means of human patronage; people then walked and carried goods over long distance on their heads. Human patronage was followed by the use of domestic animals such as horse, donkeys, and camels. Even dogs were used for drawing sledge over the very cold region of the world. As a result of new discoveries in science and technology, more efficient means and types of transportation are now in use throughout the world.

Ajayi (2003) defines transportation as "the movement of people, goods and animals from one place to another". Ajayi is of the view that goods and services are moved from production area to places of consumption. Similarly, Eyiye (2005) views transportation as "a means by which people and goods are carried from one place to another." The earliest means of transportation was foot. People trekked from one place to another carrying their loads either on their heads or their shoulders. Animals were also used as a means of transportation. Such animals as ass, camel, etc. were used as means of transportation. However, great technological advancement has been made overtime in all forms of transportation. These advancements have enabled all types of goods as well as people to move from one place to another.

Ezeagu (2006) in his own opinion sees transportation as "a means of moving goods and human beings from place to place. It is an auxiliary of trade and commerce, a means of brining about the mobility of most factors of production by land, air and sea." Transportation has grown in importance and the rate of its importance has led to effective distribution of agriculture products and a very tremendous improvement in all means of transportation in past years.

Ahukannah, Ndnachi and Arukwe (1995) define transportation as an activity that involves the movement of goods from the manufacturer to the consumer. It is inconceivable what the state of affairs would be without transportation. Farmers could not be able to market their products; stores would be closed down because they would not be able to obtain merchandise to sell, and factories would close down because they would not be able to get raw material or distribute finished products. Thus, we see that transportation is essential to the development and expansion of commerce.

According to Kotler (1997) physical distribution is the task involved in planning, implementing and controlling the physical flow of materials, finished goods and related information from point of origin to point of consumption to meet customer requirement at a profit. This definition emphasizes logistic plan made to address the problem of outbound distribution (moving product from place of production to customer). In this, the logistic manager's task is to coordinate the whole channel, physical distribution system activities of suppliers, purchase agent, marketers, channel members and customer.

**From the foregoing, it could be seen that** agriculture and transportation are two words that go together. This is because the source of food and other economic products must be reasonably accessible to markets and factories through the instrumentality of transportation to have economic value. Therefore adequate transportation network and efficient carrier services operation are necessary recipes for efficient physical distribution of agricultural products. Unavailability of these hinders the transportation of agricultural products to Jos city and other areas. Again poor transportation system also has the added effect of preventing farmers from specializing in the production of crops that offer them the best returns. Evidently if agriculture is to respond to the growing demand of consumers, then it will be necessary to evolve a good progressive rural roads system to expedite and reduce cost of the flow of agricultural commodities to points of demand to enable it contribute meaningfully to the economic growth of Jos North, Plateau State and Nigeria as a whole. The critical question is, what is the actual condition of transportation-related infrastructure in Plateau State to drive the development of agriculture? There is also the issue of incentives for rural transportation. This paper seeks to address the above problem in relation to the marketing of agricultural products in Jos.

### **OBJECTIVES OF THE STUDY**

The major objective of this study is to ascertain the effect of transportation on the marketing of agricultural products in Jos. The specific objectives include the following:

1. To ascertain the relationship between efficient transportation system and the cost of agricultural products.
2. To determine the impact of transportation on the availability of agricultural products in Jos North Local Government Area.
3. To determine the effect of transportation system infrastructure on the marketing of agricultural products in Jos North.
4. To ascertain the relationship between transportation and the marketing of agricultural products.
5. To proffer suggestions with a view to making the marketing of agricultural products in Jos North more efficient and effective.

### **RESEARCH QUESTIONS**

The following questions govern the study:

1. What is the relationship between efficient transportation system and the cost of agricultural products?
2. What is the impact of transportation on the availability of agricultural products in Jos North Local Government Area?
3. What is the effect of transportation system infrastructure on the marketing of agricultural products in Jos?
4. What is the relationship between transportation and the marketing of agricultural products?
5. What possible measures could be taken towards making the marketing of agricultural products in Jos North more efficient and effective?

### **HYPOTHESIS**

Based on the stated objectives, the following hypotheses were tested.

**H<sub>1</sub>**: The cost of transportation affects the price of agricultural products.

**H<sub>0</sub>**: The cost of transportation does not affect the price of agricultural products.

**H<sub>1</sub>**: Transportation affects the marketing of perishable agricultural products in Jos North.

**H<sub>0</sub>**: Transportation does not affect the marketing of perishable agricultural products in Jos North.

## **II. METHODOLOGY**

### **Research Design**

A quantitative research method and specifically the survey research design were used to examine the effect of transportation on the marketing of agricultural product in selected markets in Jos North. The Survey design was used because the sample elements and variables were observed without manipulating them.

### **Instrument of Data Collection**

This study made use of the questionnaire as the instrument of data collection. The test and re-test method was used to determine the reliability of the instrument.

Copies of the questionnaire were self-administered to the respondents. These questionnaires were filled on the spot and returned. Consequently, the return rate of the instrument was 93.3%.

### **Population and Sample Size**

The population of the study consists of seven markets in Jos North LGA: Terminus Market, Satellite Market, Kwararafa Market, Gada Biu Market, Chobe Market, Farin Gada Market and Katako Market. Three out of these 7 markets were randomly selected for study: Satellite Market, Gada Biu Market and Farin Gada

Market. It is difficult to determine the actual number of traders in the markets. Furthermore, based on the fact that many of the traders are illiterate and cannot respond to the questionnaire, the researcher adopted purposive sampling technique to enable a deliberate selection of relevant sample for study. Twenty-five traders were purposively selected from each of the three markets to form a total sample size of 75.

### Method of Data Analysis

The data collected were analyzed statistically using chi-square and percentages and the software for data analysis called Statistical Package for Social Sciences (SPSS).

Chi-square is denoted by the formula  $(X^2) = \frac{\Sigma}{Fe}$

Where

$F_0$  = Observed frequency

$F_e$  = Expected frequency

$\Sigma$  = Summation

$X^2$  = Chi- square

$Fe = \frac{\text{Row Total} \times \text{Column Total}}{\text{Total}}$

A 5% (0.05) level of significance is taken as the probability of committing a type one error.

## PRESENTATION AND ANALYSIS OF DATA

**Table 1:** Questionnaire Administration

VARIABLE	RESPONDENT	PERCENTAGE
Questionnaire Administered	75	100
Questionnaire Properly Filled and Returned	70	93.3%
Questionnaire not Properly Filled and Returned	5	6.6%
<b>Total</b>	<b>75</b>	<b>100%</b>

Source: Field survey, 2016.

Table 1 above shows that a total of 75 questionnaires were administered to the sample. 70 were properly filled and returned which represent (93.3%) but 5 were not returned which represent (6.6%). The analysis was therefore based on the 70 questionnaires properly filled and returned. The calculation of the percentages was done based on the number of respondents that have the same opinion over the total number of respondents multiplied by one hundred thus:

$$\frac{\text{Number of those that have the same opinion X}}{\text{Total Number of Questionnaires}}$$

### Presentation of Data

Question 1: Do you agree that transportation system plays a vital role in marketing of agriculture products?

**Table 2:** Positive Effects of Transportation in marketing of agricultural products

Options	Number of respondent	Percentages (%)
Strongly Agree	69	92
Agree	5	6.6
Disagree	1	1.3
Strongly Disagree	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field Survey 2016

From the above table 2, 35 respondents representing (92%) strongly agreed that transportation plays vital roles in the marketing of agricultural products while 5 respondents representing (6.6%) agreed and 1 representing (1.3%) was in disagreement.

This means that a majority of the respondents believe that transportation system plays a vital role in the marketing of agricultural products, conveying the products to the market, and provision of agricultural product to the place of scarcity. Thus, transportation helps to convey farm produce to the consumers.

Question 2: Do you agree that transportation system creates market for agricultural products?

**Table 3: Role of Transportation in Creating Market for Agricultural Products**

Options	Number of respondent	Percentages (%)
Strongly agree	70	93.3
Agree	5	6.6
Disagree	0	0
Strongly disagree	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field Survey 2016

From the above table 3, 70 respondents representing (93.3%) strongly agreed that transportation creates market for agricultural products, while 5 respondents representing (6.6%) agreed. None of the respondents either disagreed or strongly disagreed. It could therefore be deduced from the responses that transportation creates market for agricultural product by helping to convey the farm products to consumers.

According to the analysis majority said that improvement in transportation can encourage farmers to work harder for increasing production.

**Question 4:** Do you agree that good transportation system helps in reducing spoilage of agricultural products?

**Table 4 Role of Transportation System in Reducing Spoilage and Wastage of Agricultural products**

Options	Number of respondent	Percentages (%)
Strongly agree	50	66.6
Agree	20	26.6
Disagree	5	6.6
Strongly disagree	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 4, 50 respondents representing (66.6%) strongly agreed that good transportation system helps in reducing spoilage and wastage of agricultural products, 20 representing (26.6%) agreed, while 5 of (6.6%) disagreed.

**Question 5:** Do you think transportation problem contributes to the rise in the cost of farm products in the market?

**Table 5 Contribution of Transportation Problem to the rise in the Cost of Farm Products**

Options	Number of respondent	Percentages (%)
Strongly agree	45	60
Agree	10	13.3
Disagree	10	13.3
Strongly disagree	10	13.3
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 5, 45 respondents representing (60%) said transportation problem contributes to the raise in the cost of farm products in the market while 10 respondents representing (13.3%) were in agreement, disagreement and strong disagreement. The analysis shows that majority said that transportation problem contributes to the rise in the cost of farm products in the market: the cost associated with transportation from far location production units (farm) to the major demand centre is high. Question 6: Do you agree that effective and efficient road transport system can increase the availability of agricultural products?

**Table 6 Impact of Effective Road Transport System on Availability of Agric Products**

Options	Number of respondent	Percentages (%)
Strongly agree	50	66.6
Agree	20	26.6
Disagree	5	6.6
Strongly disagree	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 6, 50 respondents representing (66%) strongly agreed, 20 respondents representing (26.6%) agreed, while, 5 respondents representing (6.6%) were in disagreement that the use of efficient road transportation in the farm increases availability of agricultural products.

**Question 7:** Is the means of transportation used by farmers reliable in marketing of the farm products?

**Table 7** Reliability of the Means of Transportation

Options	Number of respondent	Percentages (%)
Yes	65	86.6
No	15	11.25
Not sure	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 7, 65 respondents representing (86.6%) believed that the means of transportation chosen in marketing of farm products is reliable, while 15 respondents representing (11.25%) said that the means is not reliable.

**Question 8:** Does poor transportation facilities affect the effective marketing of agricultural products?

**Table 8:** Effect of Poor Transportation Facilities on Distribution of Agric Products

Options	Number of respondent	Percentages (%)
Yes	72	96
No	3	4
Not sure	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 8, 72 respondents representing 96% said that poor transportation facilities affects the effective marketing of agricultural products while three (3) respondents representing (4%) were in disagreement.

Question 9: How would you rate the means of transportation in general?

**Table 9:** Appraisal of Means of Transportation

Options	Number of respondent	Percentages (%)
Very efficient	40	3.3
Efficient	28	37.3
Not efficient	9.3	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 9, 40 respondents representing (53.3%) believed that road transport is very efficient to convey farm products to consumers while 28 respondents representing (37.3%) believed that it is efficient, and 7 respondents representing (9.3%) are of the opinion that it is not convenient for conveying their farm products to consumers.

**Question 10:** How efficient can good roads be in the transportation and marketing of agricultural product?

**Table 10:** Efficiency of Good Road Network in Marketing of Agric Products

Options	Number of respondent	Percentages (%)
Very efficient	74	98.6
Efficient	1	1.3
Not efficient	0	0
<b>Total</b>	<b>75</b>	<b>100</b>

Source Field of Survey 2016

From the above table 10, 47 respondents representing (98.6%) are of the opinion that good roads enable efficient transportation while I respondent representing (1.3%) says it is efficient.

### Data Analysis

The responses to the questionnaires are analysed using Chi-square statistics. The SPSS (Statistical Package for Social Sciences) is used to analyse questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 10.

QUESTION	SA	A	SD	D
1	69	5	1	0
2	70	5	0	0
3	72	3	0	0
4	50	20	5	0
5	45	10	10	10
6	50	20	5	0
7		Y	N	Ns
8		65	15	0
9		72	3	0
10		Ve	E	Ne
		40	28	7
		74	1	0

**SPSS DATA ANALYSIS TABLE**  
**Chi-Square Tests**

	Value	Df	Asymp.Sig.(2-sided)
Pearson Chi-Square	50.387a	12	.000
Likelihood Ratio	56.452	12	.000
Linear-by-linear Association	12.209	1	.000
N of Valid Cases	400		

4 cells (20.0%) have expected count less than 5. The minimum expected count is 4.00.

**Test of Hypothesis**

In this section the hypothesis that were formulated in the study are tested using Chi-Square ( $X^2$ ) Statistics. The hypotheses are as follows.

**H<sub>0</sub>:** The cost of transportation does not affect the price of agricultural products in Jos North L. G. A.

**H<sub>1</sub>:** The cost of transportation affects the price of transportation in Jos North L. G. A.

To reject H<sub>0</sub>, the calculated  $X^2$  value must be greater than the table  $X^2$ . Comparing the calculated  $X^2$  value of 50.387 with the table  $X^2$  value of 12.209, it can be seen that the calculated value is greater than the table value.

$X^2$  calculated is greater than  $X^2$  table value. Therefore, we reject H<sub>0</sub> (Null hypothesis) and accept H<sub>1</sub>, (alternative hypothesis), which states that the cost of transportation affects the price of agricultural products in Jos North L.G.A.

**H<sub>0</sub>:** Transportation does not affect the marketing of agricultural product in Jos North L. G. A.

**H<sub>1</sub>:** Transportation affects the marketing of agricultural product in Jos North L. G.A.

From our computed values

$$X^2_{\text{calculated}} = 50.387$$

$$X^2_{\text{tabulated}} = 12.209$$

Since  $X^2_{\text{calculated}} > X^2_{\text{tabulated}}$ , we reject the null hypotheses H<sub>0</sub> and accept the alternative hypotheses H<sub>1</sub>.

**III. FINDINGS**

Based on the analysis, the following findings were made.

- i. Transportation plays an important role in the marketing of agricultural products. Effective distribution of agricultural products depends on efficient transportation system.
- ii. Transportation helps in creating market for agricultural products by conveying farm products to where they are needed. Also it helps in conveying people to the market place where they make purchases.
- iii. Improvement in transportation can encourage farmers to work hard in increasing production.
- iv. Good transportation system helps in reducing spoilage and wastages of farm products.
- v. Transportation-related problems contributed to the high cost of farm produce in the market.
- vi. The means of transportation used by majority of the farmers is road transportation which is fairly convenient to convey the farm products to the market.

**IV. CONCLUSION**

Transportation plays a vital role in the marketing of agricultural products. When transportation system is effective it has a positive impact in the marketing and distribution of agricultural product in the areas to creating market for agricultural product and reducing spoilage and wastages of farm products. Finally improvement in transportation can encourage farmers to work hard towards increasing production.

## V. RECOMMENDATIONS

The following recommendations are hereby made:

- i. Due to the important role of transportation in marketing of agricultural products, the federal, state and local governments should provide adequate transportation system which will help in conveying the farm products from their place of production to the place of consumption.
- ii. The federal government should take care of all transportation facilities in the country since they have more resources at their disposal to maintain them.
- iii. There should be general improvement in the transportation system, which will encourage farmers to work hard in increasing production.
- iv. The cost associated with transportation should be minimized which will help to reduce the rising cost of farm products in the market.
- v. Finally the farmers in a particular locality who produce possibly one type of product in large quantity are encouraged to group themselves into cooperative societies in order to boost their market.

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