



ANALYSIS OF TRANSPORTATION COSTS ON PRODUCTION DECISIONS OF TOMATOES FARMING IN NASARAWA STATE, NIGERIA.

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ABSTRACT

The paper examined critically analysis of transportation costs on production decisions of tomatoes farming in Nasarawa State, Nigeria. The main objective of the study is to analyze the transportation costs on the productions decisions of tomato farming in Nasarawa State, Nigeria. Previous studies on post-harvest losses focused mainly on pests and diseases, inadequate capital, climate change, poor storage and processing facilities etc, this study attempt to look at the poor condition of transportation in the production and marketing of tomato. Findings of this paper showed that transportation plays a crucial role in the production and marketing of tomato in Nigeria. It also shows that improvement in transportation network can encourage farmers and marketers to work hard in increasing production and marketing of tomatoes, as well as reducing spoilage and wastage, to give Nigeria a comparative advantage. Secondary sources of data collection were used. The study concluded by way of recommendation urging the Nasarawa State Government to provide adequate transportation network which will help in conveying the tomato from their places of production to places of consumption.

KEYWORDS: Transportation, Agriculture, Tomato, Production, Marketing

INTRODUCTION

Transport is regarded as an important factor involved in agricultural development all over the world (Akanbe, Oloruntoba, Achem, and Komolafe, 2013). 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 (Akinwale, 2010). 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.

Roads are thought to be an important factor in the process of economic development of many nations and are equally assumed to play a crucial role in the growth of rural areas (Kiprono & Matsumoto, 2014). The World

Bank and lending donor agencies have identified the improvement of roads as an instrument of poverty alleviation in developing nations. Rural road transportation network and infrastructure development in Nigeria have been topical issues and have been identified as crucial components for economic development of the country (Adedeji, Olafiaji, Omole, Olanibi, and Yusuff, 2014). Investment in rural roads has resulted in phenomenal growth in agricultural production and productivity, while rapid growth in agricultural productivity has led to a significant trickle-down benefits for the rural poor (Fan, Hazalle, and Haque, 2000).

In a study carried by Filani (2013) 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 (Inoni, & Omotor, 2009). 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 (2008) 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. 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.

Crosssley *et al.* (2009) examined that transport operations are a basic component of agricultural input and produce supply chains and that transport can be the decisive factor for the success of a farm or business activity, or else the one constraint that makes costs prohibitive or renders a project economically non-viable. Njenga and Mbara (2005) claimed that transportation has the ability to intensify inequalities and deepen poverty if its negative externalities are not appropriately managed and thus transport by itself cannot have a decisive impact on poverty. Crosssley *et al.* (2009) recognized transport has a major component of the operation cost in the food chain and it's becoming a barrier for small-scale producers and for the development of efficient, lucrative agribusinesses.

According to Mabogunje (2011), 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, 2016). A strong relationship between transportation, underdevelopment and rurality was identified by Ogunsanya (2008). 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 transportation costs on the productions decisions of tomato farming in Nasarawa State, Nigeria.

Objectives of the study

The broad objective of the study is to analyze the impact of transportation costs on the productions decisions of tomato farming in Nasarawa State, Nigeria.

METHODOLOGY

The Study Area

Nasarawa State is centrally located in the Middle Belt region of Nigeria. The state lies between latitude 7° 45' and 9° 25' N of the equator and between longitude 7° and 9° 37' E of the Greenwich meridian. It shares boundary with Kaduna state in the North, Plateau State in the East, Taraba and Benue states in the south while Kogi and the Federal Capital Territory flanks it in the West. The state has a total land area of 26,875.59 square kilometers and a population of about 1,826,883, according to the 2006 population Census estimate with a density of about 67 persons per square kilometer. Nasarawa State is made up of thirteen Local Government Areas, namely, Akwanga, Awe, Doma, Karu, Keana, Kokona, Lafia, Nasarawa, Nasarawa Eggon, Obi, Toto, Wamba and Keffi. The people of Nasarawa state includes among others; the Gwandara, Alago, Eggon, Gbagi, Egbira, Migili, Kantana, Fulani, Hausa, Kanuri, Tiv, Afo, Gade, Nyankpa, Koro, Jukun, Mada, Ninzam, Buh, Basa, Agatu, Arum, Kulere, and also settler groups like the Igbo, Yoruba and Hausa.



Sources of Data

Secondary data was used in this study.

Method of Data Analysis

Data were analyzed using descriptive statistics such as frequency, percentage, tables and charts.

RESULTS AND DISCUSSION

Mode of transportation of Tomato to the Market

The results in Table 1 showed the mode of transportation of tomato to the market. The major mode of transportation of tomato to the market identified are discussed below. It is obvious that among these modes identified, motorcycle ranked highest with wider recognition, followed by head portorage, taxis and bicycle. Pick-up and lorries, though constitute mode of transportation that was least considered across the articles. This is in a bid to search for fertile land and also because of the land tenure system in the study area. Different modes of transportation were identified by them and these included head portorage, bicycle,

motorcycle and public transport (lorries and pickup) 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 68.4% used head portorage, 63.2% use taxis, 42.1% indicated pick-up vans and 15.8% 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. More so, cost of engaging taxis and the quantity of produce they can carry is also important. However, 94.7% of the respondents indicated the use of bikes in transporting their produce from farm to different towns and markets. This conforms to Ninnin (2007) findings that usually motorcycle or small trucks are used in rural transport while heavy tractor or semi-trailer are used in inter-urban transport. 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.

Means of Transportation	Frequency (*)	Percentage
Head Portorage	13	68.4
Bicycle	11	57.9
Motorcycle	18	94.7
Taxis	12	63.2
Pick-up	08	42.1
Lorries	03	15.8

Note: (*) = Multiple responses

Transportation Cost of tomato on Farmers' income

Cost of transportation of tomato from the farm sites to the market has a great impact on production and income of farmers. This is because transport charges on tomato vary with efficiency of the transport and distance travelled. Table 2 revealed that 26.3% spent nothing less than N20,000 annually in moving

their produce to the market, 52.6% spent between N21,000 and N40,000, 89.5% of the farmers spent between N41,000 and N60,000, 68.4% 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. The cost of



transporting farm produce is high. This confirms with the findings of Hine and Ellis (2011) that transport operating costs are higher on rough roads than on good quality bitumen roads. 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 2: Cost of Transportation of Product to the Town (Market) Annually

Cost of Transportation	Frequency (*)	Percentage
Less than ₦20,000	05	26.3
₦ 21,000- ₦ 40,000	10	52.6
₦ 41,000- ₦ 60,000	17	89.5
₦ 60,000- ₦ 80,000	13	68.4

Note: (*) = Multiple responses

Transportation Problems

Table 3 shows the list of transportation problems encountered in the process of transporting their produce from the farm to their houses and markets. These problems included: bad roads (100.0%), high cost of transportation (89.5%), irregularity of vehicles (78.9%), insufficiency of vehicles (73.7%), insufficient means of transportation (68.4%) and long distance from farm to their houses as well as markets (68.4%). Tomato farmers have lost a lot of revenue due to bad or poor transport facilities in Nigeria. Tomato is a cash crop to most rural farmers, and 70 per cent of farmers who farm tomato reside in the rural communities and are smallholding farmers (Kassali, 2006). Lots of tomatoes are lost due to post-harvest losses because of its perishability nature. Tomato cannot withstand mechanical injuries due to bad road as it would get bruised and spoil. Goyol

and Pathirage (2017) buttress the point that transport infrastructure particularly road systems are unfortunately in deficit in agrarian communities in Nigeria, host to agricultural production and often located in rural areas, and the few available are in poor conditions.

Bad roads (100.0%) was a major transportation problems encountered by farmers. To give backing to this point Goyol and Pathirage (2017) argued that on the whole, poor road conditions hikes production costs leading to low returns on investments, affects income levels accompanied by increase in poverty levels all of which challenges sustainable agricultural development. Rural travel and transport in most rural areas in Nigeria still take place with great difficulties thereby compounding and worsening the problem of rural productivity and rural poverty.

Problems	Frequency (*)	Percentage
Bad roads	19	100.0
High cost of transportation	17	89.5
Irregularity of vehicles	15	78.9
Insufficiency of vehicles	14	73.7
Insufficient means of transportation	13	68.4
Long distance from farm to their houses	13	68.4



CONCLUSION AND RECOMMENDATIONS

This paper had examined the impact of transportation costs on the productions decisions of tomato farming in Nasarawa State, Nigeria. Tomato production and marketing suffers serious setback due to poor transportation network linking the rural communities with the urban cities. Tomato is highly perishable; it does not survive under harsh physical condition (mechanical injury). Tomatoes usually get spoiled and wasted before

it reaches the final consumer courtesy bad roads in Nigeria. Tomato production and marketing will continue to suffer greatly if the state government refuse to do anything to repair and reconstruct roads in the country. Due to the important role of transportation in the production and marketing of tomato state governments should provide adequate transportation system which will help in transporting tomato from the farm gate to the final consumer.

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