Journal of Public Administration, Policy and Governance Research (JPAPGR), Vol. 1, No. 1, March, 2023. Available online at https://jpapgr.com/index.php/research. ISSN:2787-0464. Covered in google scholar, etc.
Patrick Owan Bisong, Asongo Tersoo, Ekanem Elizabeth Etim & Collins Kulo Aji, 2023, 1(1):127-138

Effect of Road Transportation Mode on Marketing of Tomatoes in Gboko Local Government Area of Benue State, Nigeria

Patrick Owan Bisong
Department of Sociology, University of Calabar, Calabar, Nigeria
owaneff@yahoo.com

Asongo Tersoo
Department of Sociology, University of Calalbar, Calabar, Nigeria
talk2asongots@gmail.com

Elizabeth Etim Ekanem
University of Calabar Teaching Hospital, Calabar
ladylizeka0@gmail.com

Collins Kulo Aji
Department of Criminology and Security Studies, Arthur Javis, University, Nigeria
Collinskulo31@gmail.com

Abstract
The study examined the effect of road transportation mode on marketing of tomatoes in Gboko Local Government Area of Benue state. The questionnaire was utilized as the instrument of primary data collection. The study was a descriptive survey design which used a sample of 396 respondents selected through non-probability purposive random sampling technique. Simple percentages and tables were utilized to answer the research questions and inferential statistics (Pearson Correlation Moment) used to test the hypotheses at 0.5 alpha level of significance. Findings from the study showed that many of the respondents were male (61.1%), mostly between the ages of 31-40 (44%), who were educated up to secondary school (34%) mostly traders (44%) who could earn up to 20,000-25000 Naira income sales per week (34%). The study further revealed that motorcycle was the widely transport system (44%), while loose of products dues to bad roads (41.4%) was strongly agreed as the major effect of road transportation on the quality of products. It was agreed that many of the farmers had lower marketing cost and gained access to wilder markets (41.4%) delay on road due to vehicular break down (89.9%). Based on the findings, it was recommended that road transport should be improved upon so as to improve agricultural production in the study area and vehicles with appropriate cooling systems should be provided to transport perishable goods to the markets to avoid spoilage. Also, tomatoes processing factories should be provided by government in rural areas to save farmers the cost of transporting their tomato products to long distances.

Keywords: *Effect, road transportation mode, well-being, sustainable development, socio-economic development, marketing of tomatoes, Nigeria*

Introduction

Food farming is an important business in Nigeria as about 70% of the population uses it to sustain their livelihoods. Agriculture is characterised by increasing farming population putting more pressure on farm resources and the mobility of resource-poor food farmers. Fruits and vegetables like tomatoes, orange, mango amongst others suffer in terms of mobility despite their great nutritional value. They are important sources of vitamins and minerals, thus, essential components of human diet. Consequent upon this, there had been increased trade/commerce activities surrounding these

commodities (Egharevba 1995). Vegetable production forms a substantial percentage (about 25%) of the major food crops cultivated in the tropics and so it is the source of livelihood for a considerable section of the population (Idah, Ajisegiri & Yisa, 2007).

The sector has been identified as the primary and biggest source of income in rural communities and provides employment to approximately 70 percent of its population (World Bank, 2012). There are many factors that affect marketing of tomatoes, orange and mango in Nigeria. Transportation has been identified as one of these factors. Akangbe, oloruntoba, Achem and Komolafe (2013) indicate that a great amount of agricultural work involves "moving equipment and materials from one place to another which involves a wide variety of types and sizes of loads to be moved over different distances and types of terrain." Akangbe et al., (2013) argue that they see transport as being a physical asset and also an essential link in the utilization of other assets and having the ability to improve access to product markets that could stimulate surplus farm production.

Transport is extensively important and crucial to the economic development of any state and more so developing country like Nigeria. Transport enhances movement of people and goods and facilitates national integration and development in general. Girvan (2007) posits that transportation is a necessary precursor to the development of agricultural productivity and has a unique role and relationship with agriculture development because of the characteristics of agricultural production, commodities, and markets. For the agricultural sector to achieve its potential, investments in both hard and soft infrastructure are necessary (Wanmali & Islam, 1997). They listed roads and bridges as essential components of hard infrastructure and argued that it provides the framework within which soft infrastructure can be made available in developing countries. Soft infrastructure they described as consisting of rural services such as banking, credit, extension, seed provision, transport, communications, and marketing of rural produce.

The existence of accessible, acceptable, efficient transportation system is a pre-condition for linking remote farm areas located far from consumer centers with the agricultural production process (Taiwo & Kumi, 2013; Ukwayi & Okpa, 2017). The transport system is fundamental to economic and social development in rural areas, and significant investment is required to ensure it is of a suitable level. Transport is considered as a key 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. Market for agricultural produce is created by transport; furthermore, transport increases interaction among geographical and economic regions and opens up new areas to economic focus (Tunde & Adeniyi, 2012; Ebingha et al, 2019). Road transport is the most predominant mode of transportation in all over the world and this is a confirmation of the crucial role transport plays in the socio-economic development of a nation (Ajiboye & Afolayan, 2009; Peter et al, 2020). In Nigeria, Fungo, Krygsman and Nel (2017) observed that on foot, bicycle, animals, and car are major mode of transportation systems used in transporting agricultural products especially in the rural setting or areas.

Hin and Ellis (2001) found that African farmers receive only 30-50% of final market price against 70-85% to Asian farmers with most of the difference due to high transport costs. They observed that a reduction in transport cost by 20% rise farm gate price by 6%. It was noted that though road investment plays an important role in reducing transport costs, improving feeder roads may have little impact if "no change in transport mode occurs", that is "upgrading 5 km of feeder road from earth to gravel might only increase farm gate price by about 10% only, while bringing motor vehicle access 5 km closer to farms would increase farm gate price by over 100% as much".

Starkey (2001) found in Tanzania an increase in road roughness by 50% raises the truck charges by 16% and pickup charges by a little below 100% and (Starkey, 2001; Omang et al, 2022). Oyatoye (1994) found in Nigeria that if road quality improves, farmers have lower marketing costs and gain access to wider markets. They experience little or no delay in moving their produce and hence

undergo fewer losses. They also receive better market prices for their products as the realization of a new road always attracts more of transportation systems and eases access to farm.

Akintola (2007) noted that most of the rural roads are in poor condition, and this has imposed significant cost on the national economy especially to the agricultural activities due to increased vehicle operating costs and travel times. The transport systems affect the marketing channels and therefore the long-term agricultural productivity. The mode of transportation used, length and time of the journey and the costs of transport all affect the efficiency of marketing system and therefore farm output (Okoi et al, 2022; Anam et al, 2022).

In Gboko Local Government Area of Benue state, farming is the main occupation of the people with estimated 70 percent engaged in agriculture. The surface of roads linking most communities is in a very deplorable state. Bridges on some roads are broken down cutting communities from the rest of the district. Out of about 478 kilometers of road network in Gboko Local Government Area of Benue state, only about 45 percent is classified as good which are mostly urban areas (Benue State Dairy, 2009; Okpa et al, 2022).

Farmers and buyers use motorcycles and bicycles to transport their produce to main roads. Many of these farmers carry their produce on their heads walking long distances to the roadside or the nearest small markets. The deplorable nature of roads linking the main secondary market at Ubagangi and Wankenge (Gboko town) to the adjourning small towns or communities means few vehicles ply the roads resulting in overloading and huge haulage cost and this presents a huge problem to farmers affecting agricultural development in Gboko Local Government Area.

It is estimated that about 80% of farm produce is conveyed by head-porterage from farms to villages mainly by women and children resulting in high incidence of drudgery in transporting agricultural produce in Gboko Local Government Area. Perishable crops like tomatoes, orange, mango and amongst others get damaged in the course of transporting as a result of excessive heat and poor winding and bending roads resulting in loss of quality and reduction in farmers income; eventually discouraging farmers in expanding their farm size the next growing season (Okpa, 2022). Farmers who wish to avoid the hustle sell produce at farm gates at very low cost and which even becomes difficult to sell sometimes. It is against this background that the study interrogates the effects of road transportation mode on marketing of tomatoes, orange and mango in Gboko Local Government Area of Benue state. The following research questions were formulated for testing in the study:

i. What are the socio-economic characteristics of the marketers in Gboko Local Government Area of Benue state?
ii. What are the road transportation systems used by the marketers?
iii. What are the effects of the transportation systems on the quality of the product?
iv. What is the effect of the transportation system on marketing profit and margin?
v. What are the problems associated with the road transportation systems?

Methodology

The study employed the descriptive survey method in determining effects of road transportation mode on marketing of tomatoes in Gboko Local Government Area of Benue state. This is because the study used quantitative and qualitative data collected through the use of questionnaire (Okpa et al, 2020). The study adopts the simple random and purposive sampling technique. Three (3) communities or clans namely, Ipav, Yandev and Mbayion were selected purposively because they are the major areas tomatoes farming and marketing is predominant and due to the characteristics of the target population. Simple random sampling was used to select 400 farmers and marketers in the three communities in Gboko Local Government Area to cover the whole of Gboko Local Government Area of Benue State. To determine the sample size for tomatoes farmers and marketers

who are victims of transportation mode system in Gboko Local Government Area of Benue state, Taro Yamane formula of statistical calculation (Yamane, 1976) was used to determine the sample size.

Data for the study were collected through questionnaire. Out of 400 copies of the questionnaire distributed to the respondents, only 396 were returned and found usable showing a response rate of 99%. The data collected were analyzed using descriptive statistics such as simple percentages and tables, whereas inferential statistics such as (Pearson Correlation Moment) was used to test the hypotheses.

Results

This section of the study focuses on the analysis of data about the research questions and hypotheses that were asked at the early stage of this investigation.

Socio-economic Characteristics of Respondents

Table 1 presents the percentage analysis of the socio-economic characteristics of respondents. Result analysis on the gender of the respondents indicates that majority (60.1%) while female was 39.9%. This shows that both male and female respondents were involved in the sampling, though there were more males than females. Analysis of age shows that, 21% fall within the age range of 20-30 years, 44% fall within the range of 31-40 years while 35% were within the age range of 41 years and above. It therefore shows that all the respondents were 20 years and above representing the modest age and maturity that was required to prevent naivety of respondents. Analysis of the educational qualification of respondents indicates that 20% had non-formal education, 25% had Primary education, 34% had Secondary education and 21% had Tertiary education. It therefore shows that majority of the respondents had the Secondary education. Data on marital status indicates that majority of respondents 43% were married persons while the second largest group 30% were single. Also, among the respondents, 16% were widows/widowers while 11% were divorced. Therefore, based on the analysis, majority of the respondents were married.

Analysis of Occupation shows that, 21% were into Farming, 44% were Traders 35% were road transport workers. It therefore shows that majority of the respondents were traders. Analysis of Income for harvest/selling indicates that 20% made 5000-10,000 Naira weekly, 25% made 10,000 - 15,000 Naira weekly, 34% made 20,000-25, 000 Naira weekly 21% made 50,000 Naira and above weekly. It therefore shows that majority of the respondents' made 20,000-25, 000 Naira weekly.

Table 1: Socio-economic Characteristics of Respondents (n=396)

S/N	Socio-economic Characteristics	Frequency	Percentage
A	**Sex**		
	Male	238	60.1
	Female	158	39.9
B	**Age**		
	20-30 yrs	83	21
	31-40 yrs	174	44
	40 yrs and above	139	35
C	**Educational Qualifications**		
	Non-formal education	79	20
	Primary education	99	25
	Secondary education	136	34
	Tertiary education	82	21
D	**Occupation**		
	Farming	83	21
	Trading	174	44
	Road transport workers	139	35

E	**Income for the harvest/selling**		
	5000-10,000 Naira weekly	79	20
	10,000 -15,000 Naira weekly	99	25
	20,000-25, 000 Naira weekly	136	34

Major Transport System of Marketers

Table 2 presents percentage distribution of marketers based on the major transport systems used. Analysis of the type of road used indicates that 26% used Trunk 'A' roads, Trunk 'B' 28%, Trunk 'C' 22%, Footpath 13% while Others (motorable and non-motorable) 4%. On the nature of the roads available in the area, respondents stated that tarred roads were 21%), Untarred 144% while others had 35%. On the conditions of the roads in the area, respondents stated Motorable 83(21%), Non-motorable 44%, while others had 35%. Also, 60.1% of the respondents agreed that the roads are motorable throughout the year while 39.9% disagreed. Data analysis on the number of roads that connect in/out of the village to other villages, respondents stated One (20%), Two (25%), Three (34%), while 21% stated None. On the mode of Transport do own by respondents, (21%) Car/Bus, Motorcycle (44%), Bicycle (10%), while Others were 25%. Data analysis on how long it takes to reach the location of Market, respondents stated 13% less than 1 hour, 1-2 hours (22%), 2-3 hours (28%), 3-4 hours (4%), while 26% stated More than 4 hours.

These findings are in line with the work of Tunde, and Adeniyi (2012) who in a study on the impact of Road Transport on Agricultural Development: A Nigerian Example, noted that the major means of transporting agricultural produce from the farms to the markets as well as to various urban communities in Nigeria is through road transportation. In a related study, Leman (1985) stated that provision of roads in the rural areas will enable rural dwellers to identify and exploit rural resources as well as opening up hither to remote resources area. It will attract rural settlers and farmers closer to the roads which will now make it possible for the creation of markets for productive activities as well as extending the size of such markets. The availability of closer roads to the settlements will make it possible to transport surplus farm produce from productive village to the markets thereby helping to minimize shortages of food products and raw materials for industries.

Table 2: Percentage distribution of Marketers based on Major Transport System of Marketers

S/N	Questions	Options				
a.	What type of road do you have in your Village?	Trunk A 26%	Trunk B 28%	Trunk c 22%	Footpath 13%	Others 4%
b.	What is the nature of the roads?	Tarred 21%	Untarred 44%	Others 35%		
c.	What are the conditions of the roads?	Motorable 21%	Non-motorable 44%)	Others 35%		

d.	Are the roads motorable throughout their year?	Yes 60.1%	No 39.9%			
E	How many roads connect in/out of the village to other villages?	One 20%	Two 25%	Three 34%	None 21%	Others -
f.	What mode of Transport do own?	Car/Bus 21%	Motorcycle 44%	Bicycle 10%	Others 25%	-
g.	With this mode of transportation, how long does it take you to reach the location of your Market?	Less than 1 hour 13%	1-2 hours 22%	2-3 hours 28%	3-4 hours 4%	More than 4 hours 26%

Effects of Road Transport on Quality of Products

Table 3 shows the result of data analysis on the effects of road transport on quality of products. Data collected indicated that 41.4% of respondents strongly agreed that they lose products due to bad road, 40% agreed, 9.5% strongly disagreed, and 9.6% disagreed. It therefore means that majority of the respondents strongly agreed that they loss products due to bad roads. Also, 178 (35.5%) strongly agreed that road transport causes Damage to products, 37.3% agreed, 15.9 strongly disagreed, 11.7% disagreed. It therefore means that majority of the respondents agreed that road transport causes damage to products. In the same vein, 31.8% strongly agreed that road transport causes high cost of transportation, 32.3% agreed, 22.3% strongly disagreed and 13.6% disagreed. This result implies that, majority of the respondents agreed that road transport enhances high cost of transportation.

These findings are in line with the work of Rodrigue and Nottemboom (2013) who disclosed that efficient transportation systems provide economic and social opportunities and benefits such as better accessibility to markets, employment; additional investments; reduced cost of business operation and saves time of product delivery. Again, at the macroeconomic level, transportation and the mobility it confers are linked to the level of output, employment, and income within a national economy.

Transportation accounts for over 10% of the GDP in many developed economies according to Memedovic, Ojala, Rodigue & Namala, (2010). Transportation links together the factors of production in a complex web of relationships between producers and consumers. Supporting the findings, Rodrigue et *al* (2013) declared that in developing countries, lack of transport infrastructure and regulatory impediments are jointly impacting economic development by conferring higher transport cost and also rendering supply chain management unreliable. A poor transport service level can negatively affect the competitiveness of regions and corporations, and this has a negative impact on the regional added value and employment, which will invariably affect adversely the national economy. The Researcher's observation by Ogwo and Agu (2016) tends to support the assertion of CIA World Fact Book (2009) that the road transport in Nigeria carries over 95% of the nation's goods and passengers. In the south – eastern states of Nigeria, most business activities are carried out through the road transport. This is because the rail transport has been moribund for over a decade, the level of poverty makes it difficult for the majority to approach airports much less patronizing them, and the zone does not have sea ports like the south – south and south west counterparts. Hence, road transport becomes the only means of business operations in the zone.

Table 3: Analysis of data on the Effects of Road Transport on Quality of Products

S/N	Item Description	Strongly Agreed %	Agreed %	Strongly Disagreed %	Disagreed %
A	Loss of product due to bad road	41.4	40	9.5	9.6
B	Damage of products	35.5	37.3	15.9	11.7
C	High cost of transportation	31.8	32.3	22.3	13.6

Effects of the Road on Marketing Profit and Margin

Table 4 shows the result of data analysis on the effects of the Road on Marketing Profit and Margin. Result indicated that 31.6% of respondents strongly agreed that high costs are incurred in transporting goods to the market, 22,3% agreed, 31.8% strongly disagreed and 32.3% disagreed. It therefore means that majority of the respondents agreed that high costs are incurred in transporting goods to the market. 40% of respondents strongly agreed that farmers have lower marketing costs and gain access to wider markets, 41.4% agreed, 9.6% strongly disagreed and 9.5% agreed. It therefore means that majority of the respondents agreed that farmers have lower cost and gain access to wider markets. Lastly, 9% of respondents strongly agreed that buyer's accessibility to products right at the farm gate discourages farmers from their product distribution, 8.7% agreed, 9.9.3% strongly disagreed while 75.5% disagreed. It therefore means that majority of the respondents strongly disagreed that buyer's accessibility to the products right at the farm gate discourages farmers from distributing their products.

These findings correspond with the work of Njenga and Ehollie (2015). According to them, the initial stages of crop movement from the farm to consolidation points are the most expensive when expressed in tone-km terms and provide the biggest transport constraints to the development of vibrant small holder agriculture. These initial movements will usually take place on local paths and tracks and may involve carrying (by headloading or backloading), or by Intermediate Means of Transport (IMTs) such as animal transport, bicycles or motorbikes, and then final transfer to higher capacity vehicles. The process is time consuming and expensive, when either the opportunity cost of labour, or the cost of hired labour or hired transport is taken into account. Head/backloading, for example, is in the order of 10 to 30 times more expensive per tonne-km than moving goods by truck.

The poor road condition also affects the transport price of agricultural products. Ikejiofor and Ali (2014) conducted a study in Nigeria and concluded that improved road condition is one of the catalysts for better marketing of agricultural products. They pointed out that improved road condition allow for better access to a wider market and reduce losses and delays in moving the farm produce. If the agricultural produce reaches the market in time, in good quality and at low transport price, the situation will attract more money for the producers (Ikejiofor & Ali, 2014).

Kassali, Anyanwale, Idowu and Williams (2012) found that, in Nigeria, an improvement in the quality of the roads allows farmers to realise lower marketing costs and receive a better price for their agricultural produce. Another study conducted in Nigeria by Akangbe, Oloruntoba, Achem and Komolafe (2013) indicated that over 70% of the study's participants confirmed that the poor road condition and road seasonality were the reasons for the high transport prices of agricultural produce. In the same study, road conditions and the remoteness of the area were mentioned as reasons which deny farmers access to the various agriculture-related goods and services. Roughly 78% of the respondents reported not to have access to markets, agricultural extension services, agricultural inputs, agricultural credit and the usage of modern farming techniques and equipment (Akangbe *et al.*, 2013). Yaro, Okon and Bisong (2014) argued that in an area where accessibility was good, access to farm inputs was 5.9% more than in an area with poor accessibility. Kiprono and Matsumoto (2014) using longitudinal data from 2004 to 2012 in Kenya indicated an increase in the use of maize hybrid seeds, chemical fertilisers and maize productivity in areas with better road access.

Table 4: Effects of the Road on Marketing Profit and Margin

S/N	Item Description	Strongly Agree %	Agree %	Strongly Disagreed %	Disagreed %
A	High costs incurred in transporting goods to the market.	13.6	22.3	31.8	32.3
B	Farmers have lower marketing costs and gain access to wider markets.	40	41.4	9.6	9.5
C	Buyers /Customers accessibility to products right at the farm gate discourages farmers for their product distribution.	15.9	11.7	37.3	35.5

Problems of Road Transport System

Table 5 shows the result of data analysis on the Problems of Road Transport System. Result indicates that 60% and 40% of the respondents agreed and disagreed respectively that traffic conjunction on the road while transporting goods to the market is a problem posed by road transport system. 79.5% and 20.5% of the respondents agreed and disagreed respectively that delay while transporting goods as a result of poor drainage and culvert on the road is a problem posed by road transport system. In the same way 85.5% of the respondents agreed that delay or damage as a result of pot holes is a problem posed by road transport system while 41.5% disagreed. 89.9% of respondents agreed that they are delayed on the way due to vehicle breakdown while 10.1% disagreed. Also, 69.7% respondents agreed that they experienced losses or damages due to lack of appropriate vehicles to transport perishable goods while 30.3% disagreed.

This study corresponds with the work of Abubakar (2015) who noted that the condition of most rural roads in the country is very poor compared to inter-urban and intra-urban roads in the country. According to Abubakar (2015), apart from the networks and few terminals which are government property, almost all other aspects of rural transport in Nigeria belong to private sector. Some of the vehicles plying rural roads are not road-worthy, this makes their services to be slow, irregular, unreliable, inefficient, and even constitute risk to rural travelers.

Motorized transport cost become very high during rainy season as public transport operator hike up their fares because of the increased vehicle running cost often occasioned by the prevalent very bad road conditions. Adesanya, Philips and Titilayo, (2000) had observed that, 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. The ability of agricultural and forest freight to absorb motorized transport cost varies according to the purpose and type of agricultural production. On the whole, only large-scale or commercial agricultural forestry concerns and mining firms are found to be more able to absorb public transport costs than the subsistence primary producers who predominates the country's rural area (Adedeji, 2010).

As a result of the foregoing reasons, head portage moves substantial part of the country's rural agricultural commodities. Bicycles, hand drawn/push carts, pick-up van and adapted vehicles (Bolekaja and Mammy Wagons) are the dominant modes of public transport in the rural areas. Beasts of burden (mules, donkeys and camels) are used widely in the Northern Nigeria while canoes and boats are used in riverine and navigable inland water ways throughout the country.

Table 5: Problems of Road Transport Systems

S/N	Problems	Freq.	%
A	Have you been experiencing traffic conjunction on the road while transporting your goods to the market?	132	33.3
B	Have you been delayed while transporting goods as a result of poor drainage and culvert on the Road?	275	69.4
C	Have you experienced any delay or damage as a result of pot holes?	288	72.7
D	Have you been delayed on the way due to vehicle breakdown?	356	89.9
E	Have you experienced any losses or damages due to lack of appropriate vehicles to transport perishable goods?	276	69.7

Hypotheses Testing

Hypothesis 1: This hypothesis stated that there is no significant relationship between the road transportation systems and the quality of the product.

Table 6: Pearson Product Moment Correlation statistics analysis of relationship between road transportation system and the quality of the product

Variable	N	Df	SD	R	Remark
Road transportation systems (X)	396	448	1.11861	1	Rejected
Quality of the product (Y)	396		1.06690	.935	

N=396, X=612, Y=72, ΣX^2=62885, ΣY^2=1298, ΣXY=6910, $\propto$=0.05, r-value=1.00

Table 1 above showed that Pearson correlation (r) analysis is -1.00, significant level =0.05, from the result, it implies that the relationship is perfectly significant since (r) is equal to zero. The hypothesis which states that there is no significant relationship between the transportation systems and the quality of the product is rejected. This therefore means that transportation systems have an impact on the quality of the product.

Hypothesis 2: This hypothesis stated that there is no significant relationship between road transportation system and marketing profit and margin.

Table 7: Pearson Product Moment Correlation statistics analysis of relationship between road transportation system and marketing profit and margin

Variable	N	Df	SD	R	Remark
Road transportation system (X)	396	448	1.11861	1	Rejected
Marketing profit and margin (Y)	396		1.12842	.983	

N=396, X=532, Y=38, ΣX^2=56886, **ΣY^2=570, ΣXY=3762, $\propto$=0.05, r-value=1.00**

Table 2 shows that Pearson correlation (r) analysis is -1.00, significant level =0.05. It implies that the relationship is perfectly significant since (r) is equal to zero. The null hypothesis which states that there is no significant relationship between road transportation system and marketing profit and margin is rejected. This therefore means that road transportation system has impact on marketing profit and margin.

Discussion of Findings

The study was set to examine the effect of road transportation mode on marketing of tomatoes in Gboko Local Government Area of Benue state, Nigeria. To this effect, specific objectives were set and finding on the socio economic characteristics of respondents reveals that many of the respondents were male (61.1%), with those between the ages of 31-40 prevailing in the study (44%). It revealed further that many of the respondents had secondary school educational (34%) many of whom were into trading (44%). It further showed that (34%) of the respondents had 20,000-25000 Naira income sales per week.

In line with the sub-objective of the study which was to identify the road transportation system used by marketers in Gboko local government, it was revealed that motorcycle was the widely transport system by marketers in Gboko Local government (44%). On the effects of road transportation system on the quality of tomatoes products, loose of products dues to bad roads (41.4%) was strongly agreed as the major effect of road transportation on the quality of products.

Similarly, findings from the study agreed that many of the farmers had lower marketing const and gained access to wilder markets (41.4%). Lastly, the study revealed delay on the road due to vehicular break down (89.9%) as the major problem associated with road transport system in Gboko local Government.

Conclusion

Based on the findings of the study, it is concluded that road transportation mode affects the marketing of tomatoes in Gboko Local Government Area of Benue state. Transportation mode is revealed as the major influence of quality of the products and marketing profit and margin. Transport plays a significant role in the structure of food production and marketing and that easy transport to market can make all the difference in the level of rural incomes. From the analysis, it could be deduced that an improved transportation will encourage farmers to work harder in the rural areas for increased production, add value to their products, reduce spoilage and wastage, empower the farmers as well as having positive impact on the productivity, income, employment level and reduce poverty level in the rural areas.

Recommendations

Based on the findings of the study, the following recommendations are made:

i. 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.
ii. Government should provide good roads in the rural areas, to enable them transport their farm products
iii. Community participation should be encouraged in the construction of roads.
iv. Vehicles with appropriate cooling systems should be provided to transport perishable goods to the markets to avoid spoilage.
v. Tomatoes processing factories should be provided by government in rural areas to save farmers the cost of transporting their tomato products to long distances.

References

Abaya, J. A., (2013). An update profile of Gboko Local Government Council.

Abubarkar, A.A. (2015). Influence or rural roads on the patronage of rural markets in Kudan Local Government Area of Kaduna State. Unpublished M.Sc Dissertation, School of Post-Graduate Studies, Ahmadu Bello University, Zaira.

Achoga, F. O. & Nwagbo, E.C. (2004). Economic assessment of the performance of private sector marketing of fertilizer in Delta State, Nigeria. Paper Presented at the Annual Conference of Nigeria Association of Agricultural Economists on "Agricultural Marketing and Commercialization for Sustainable Development" at Ahmadu Bello University, Samaru – Zaria.

Ajiboye, A. O. & Afolayan, O. (2009). The impact of transport on agricultural production in developing a country: A case of Kola Production in Nigeria. *International Journal of Agriculture Economics and Rural Development*, 2: 49-57.

Akangbe, J.A., Oloruntoba, O.O., Achem, B. & Komolafe, S.E. (2013). An appraisal of transportation facilities effects on agricultural development in Moro Local Government Area, Kwara Estate, Nigeria. *Ethiopian Journal of Environmental Studies and Management*. 6(2):191–200.

Ali, A. N. & Asogwa, S.O. (2017). Road transportation network constraints on food crop production in Uzo-Uwani Local Government Area of Enugu State, Nigeria. *Afro Asian Journal of Social Sciences*, 8(4): 1-21.

Anam, A., E., Okpa, J. T., Wilson, N. U., Ikpeme, B. B., Ofem, N. O., Okon, R. B., Obeten, U. B., Eshiotse, E., Akongi, U. S., Opoh, F. A. (2022). Corporate social responsibilities and the well-being of rural dwellers: the Lafarge Cement Company's example. Corporate governance and organizational behaviour review. 6(3), 128-137

Ebingha, E. E., Eni, J. S., & Okpa, J.T. (2019). Population growth and socio-economic development of Cross River State, Nigeria. European Journal of Economic and Financial Research 3(3), 20-35

Fungo, E., Krygsman, S. & Nel, H. (2017). The role of road infrastructure in agricultural production. 36th Southern African Transport Conference (SATC): 94-108.

Ikejiofor, I.G. & Ali, A. (2014). The effects of road transport characteristics on the marketing of agricultural produce in Nsukka LGA, Enugu State, Southeastern Nigeria. *Innovation Journal of Social Sciences*, 2(1):2–5.

Kassali, R., Ayanwale, A.B., Idowu, E.O. & Williams, S.B. (2012). Effect of rural transportation system on agricultural productivity in Oyo State, Nigeria. *Jounal of Agriculture and Rural Developement in the Tropics and Subtropics*. 113(1):13–19.

Memedovic, O. Ojala, O. Rodigue, J.P. & Namala, J. (2010). Fuelling the Global Value Chains: What Role for Logistics Capabilities. *Journal of Technological Learning, Innovation and Development*, 1 (3).

Njenga, P. Wililo, S. & Hine, J. (2015). First mile transport challenges for smallholder tomato farmers along Ihimbo-itimbo Road, Kilolo District Tanzania. AFCAP/ASCAP Report SC14061/TAN2015C.

Ogwo, E. & Agu, G.A. (2016). Transport infrastructure, manufacturing sector performance and the growth of gross domestic product in Nigeria (1999-2011). *Journal of Business and African Economy*, 2(1):1-2.

Okoi, O. N., Ogar, J. A., Ubi, L. O., Ubi L. B., Okpa, J. T. (2022). Economic Empowerment, Financial Security and the Well-Being of Women in Nigeria. International Journal of Trend in Scientific Research and Development (IJTSRD) 6(3), 612-622

Okpa J. T. (2022). Exploring the relationship between infrastructural development and socioeconomic well-being in rural areas: Evidence from Bakassi, Cross River State, Nigeria. Journal of Socioeconomics and Development 5 (2), 153-161

Okpa, J. T., Ilupeju, A. A. & Eshiotse, E. (2020). Cybercrime and Socio-economic Development of Corporate Organisations in Cross River State, Nigeria. Asian Journal of Scientific research 13 205-213

Okpa, J. T., Ikpeme, B. B., Wilson, N. U., Obeten, U. B., Nwadike, N. C. (2022). Socio-demographic factors affecting access to and utilization of social welfare services in Nigeria. Journal of Infrastructure, Policy and Development 6 (2), 1448

Omang, A. T., Okpa, J. T., & Okoi, O. N. (2022). Women's Empowerment and the Well-Being of the Unemployed Women in Yakurr, Nigeria. Journal of International Women's Studies 24(1), 19

Omang, T. A., Okpa, J. T., Okoi, O. N., Iniama, J. (2020). Women Barriers and Empowerment Opportunities in The Nigerian Context. Pertanika Journal of Social Sciences and Humanities. 28 (4), 3167 – 3186

Peter, E. O., Okpa, J. T., & Okoi, O. N. (2020). Educational Support Services and Teachers' Job Performance in Secondary Schools in Akwa Ibom State, Nigeria. Journal of Educational System 4(1), 22-29

Rodrigue, J.P. & Nottenboom, T. (2013). Transportation and Economic Development. *The Journal of Geography of Transportation.*

Ukwayi, J. K. & Okpa, J. T. (2017). The Effect of Electoral and Economic Crimes on Sustainable Development in Cross River State, Nigeria. International Journal of Social Science Research 5 (2), 32-42

Yaro, M.A., Okon, A.E. & Bisong, D.B. (2014). The impact of rural transportation on agricultural development in Boki Local Government Area, Southern Nigeria. *Journal of Management and Sustainability*, 4(4):125–133.