TRANSPORTATION CHALLENGES OF RETAILING PETROLEUM PRODUCTS IN AKURE, NIGERIA

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Abstract
Transportation is crucial for the distribution and retailing of petroleum products for consumption. However, the transportation of petroleum products is faced with varying degree of challenges. To this end, this study examines transportation challenges facing efficient retailing of petroleum products in Akure. The study collected data on the location of petroleum retailing points from Ibule to Shasha market on the Ilesa – Akure – Owo expressway in Akure using GPS. Questionnaire survey was also conducted to collect data on the transportation challenges of retailing petroleum products in Akure. The study purposively sampled 126 respondents who are staff of the petroleum products retailing points on Ilesa – Akure – Owo expressway. Point analysis of the GIS and descriptive analysis were employed to analyse the data collected for the study. It was revealed that a total of 42 petrol stations are located within a distance of 15.651Km from Ibule – Shasha market in Akure with an average of 372 metres between two stations. It further showed high cost of fuelling, bad roads and traffic congestion as the most significant transportation challenges facing the retail of petroleum products. It was recommended that the government agency in charge of road maintenance should be more proactive to their responsibilities.

Keywords: Petroleum products; retailing points; Akure, transportation challenges.

Introduction
The economy of Nigeria as a country is majorly driven by the oil and gas industry as the country depends on the revenue sources from petroleum to build her economy. This has been the situation since the discovery and exploitation of crude oil which is the base material for all petroleum products. Petroleum products in the context of this study refer to the fuel components like premium motor spirit, domestic pure kerosene, and automotive gas oil. The transportation of petroleum products involve the process of moving petroleum products from the refineries to the depot, to the marketer, and to the final consumers which requires adequate coordination, planning, monitoring and effective control to achieve maximum level of functionality.

Nigeria’s petroleum industry has experienced enormous problems such as poor management and lack of turnaround maintenance resulting in the refineries operating below full capacity. Crude petroleum happens to be one of the mineral resources being produced in commercial quantity in Nigeria. The petroleum sector, therefore, serves as the main supply of energy in the country (Aigbiremolen and Aigbiremolen, 2004). Since petroleum and natural gas are the major suppliers of commercial energy in the most populous African country, an evaluation of petroleum products marketing in such an economy is a step in the right direction. The petroleum and natural gas reserves are usually found where there are crude oil reserves (www.naturalgas.org). Therefore, there are petroleum and natural gas reserves associated with crude oil and non-associated reserves in the country. Petroleum production in commercial quantity in Nigeria has led to rapid increase in oil revenue, GDP and foreign exchange earnings (Aigbiremolen and Aigbiremolen, 2004). Transportation is an important aspect in the distribution and retailing of petroleum products, this is because the locations of petroleum products production are usually far from the final consumers (Ikporukpo, 1977). An efficient and effective logistics is a function of how well the transport system is structured considering issues such as precision, cost, just-in-time, frequency, distance and time (Jespersen et al 2004). Therefore, efficient transportation systems are strategically important for effective distribution and retailing of petroleum products.

The road transport forms the dominant mode of transportation of petroleum products in Nigeria because of its ability to provide door to door services, and the ease with which it can get petroleum products to final consumers. The restrictive nature of the water ways, coupled with the near collapse of the rail system, and the high cost of air travels have further exerted a lot of pressure on the road as over 70 percent of the total movements in the country are made by the road. The distribution is attributed to comparative cost economies of the modes of transport. In spite of the
advantages of pipelines, road transportation remains the most patronized mode in Nigeria for petroleum haulage and retailing. The consequence of the dominant use of road mode of transport in the distribution of petroleum products will reflect when the road fails to contribute substantially to efficient distribution and retailing of petroleum products across various cities in Nigeria. In view of this, the study intends to examine the transportation challenges of retailing petroleum products in Akure, Ondo state of Nigeria.

Several authors have published articles on issues relating to petroleum products distribution in Nigeria. Alaba and Agbalajobi (2014) carried out an evaluation of the performance of private refineries and depots in the distribution of petroleum products in Nigeria, and found that the establishment of private refineries and depots has improved the distribution of petroleum products across the country. Ehihike and Ngwoke (2013) looked at the effect of cost of distribution on the pump price of petroleum products in the south east Nigeria and came with the fact that transport fare, union levies/dues, rent, wages and salaries and allowances as well as spare parts, electricity bills, generator service and maintenance; and bank charges and interest rates, and insurance premium, and extortion from government officials as additional distribution costs influencing the pump prices of petroleum products in the south east of Nigeria. The study of Adagunodo (2014) took a different dimension as it focused on an empirical analysis of petroleum products demand in Nigeria using random trend approach to find that price and income elasticities of petroleum product demands are higher in the short and long run relative to constant intercept model. The focus of the study of Onigbide (2014) was on the evaluation of petroleum products marketing in a globalizing economy in Nigeria and recommended that relevant agencies in the petroleum industry of Nigeria needs to take necessary measures to sustain the current product supply stability in the system with strict adherence to approved official pump prices ceiling by the marketers. It can be noted that issues that relate to spatial location of petroleum product retailing points and transportation problems are yet to be covered by researchers. Therefore the objective of this study is hinged on the transportation and locational challenges of retailing petroleum products in Akure.

Methodology
The study basically made use of primary data collected by means of physical survey of petroleum retailing points (also known as petrol stations) in Akure using GPS and questionnaire administration to staff of the petrol stations.

The objective is to determine the spatial distribution of petroleum products retailing points as well as to examine the transportation challenges of retailing the products. The study focused on the location of petroleum products retailing point from Ibule to Shasha market along the Ilesa – Akure – Owo expressway in Akure. The choice of the route is because the expressway serves as the major road that connects traffic from other parts of the country through Akure. The study collected data on the location of petroleum retailing points from Ibule to Shasha market on the Ilesa – Akure – Owo expressway in Akure using GPS. Questionnaire survey was also conducted to collect data on the transportation challenges of retailing petroleum products in Akure. The study purposively sampled 126 respondents who are staff of the petroleum products retailing points on Ilesa – Akure – Owo expressway by sampling three (3) respondents from each of the 42 identified petroleum retailing points on the selected road. The transportation problems facing efficient distribution of petroleum products examined in the study include Armed Robbery Attack; Traffic Congestion; Delays at Loading Points; Vehicle Mechanical Problems; Accidents; Harassment from Law Enforcement Agencies; and High Cost of Fuel. These variables were presented to the respondents to rank in order of significance following 5–point Likert scale from 1 – Not Significant to 5 – Highly Significant. Point analysis of the GIS and descriptive analysis were employed to analyse the data collected for the study.

Results and discussion
The distribution of petroleum products to final consumers cannot be completed without retailing process. The retailing process of petroleum products is manifested in the selling of the products to consumers at retailing points also known as filling stations and popularly called petrol stations. The locations of these retailing points are germane to the rate at which final consumers readily have access to petroleum products. However, it is observed that petroleum retailing stations are majorly located along major highways in Akure. For this reason, this study focused on identification of the location of petroleum retailing points in Akure with specific case of Ilesa - Akure – Owo expressway starting from Ibule-Soro to Shasha Market at Oba-Ile, Akure. Data for the study was collected using GPS and analysed with GIS using point analysis. The Fig 1 shows the spatial locations of petroleum retailing points on the expressway in Akure.

An examination of the Fig 1 shows a total distance of 15.651 Kilometres from Ibule-Soro to Shasha market on the Ilesa – Akure – Owo expressway in Akure. This distance has a total of 42 petroleum products retailing points located on both sides of the road. It should be noted that the retailing
stations comprise of both major and minor marketers. There are also proposed stations which are under construction.

![Image of the Spatial locations of Retailing Points of Petroleum Products along Ilesa – Akure - Owo Expressway in Akure](image)

Source: Author’s Fieldwork, 2016

Further examination of the Fig 1 reveals an average of 372 metres between each petroleum products retailing points on the expressway to spread over an approximate 16Km of road. This is considered to be too closed. It was observed that majority of the stations could not get customers to buy their products. This might probably be as a result of the number and closeness of the retailing points available to consumers who demand less than the total supply at the petrol stations. The road width was measured to be 15metres including the road shoulders. This is below the standard road width for an arterial road that is considered 24 metres including road shoulder which is used as a refuge strip for parking along express roads.

Transportation is essential to the distribution and retailing of petroleum products. The road by means of trucking is used for the movement of petroleum products to the various retailing points across cities in Nigeria. This is not without varying degree of challenges confronting the retailing process of petroleum products in the course of transportation. This study examines the extent to which specific transportation problem significantly affects the retailing process of petroleum products in Akure. For ease of presentation the variables were represented by BR, RD, LK, AR, TC, DLP, VMP, ACC, HEA, and HCF where BR=Bad Road; DR = Reckless Driving = LK Tanker Leakages; AR = Armed Robbery Attack; TC = Traffic Congestion; DLP =
Delays at Loading Points; VMP = Vehicle Mechanical Problems; ACC = Accidents; HEA = Harassment from Law Enforcement Agencies; and HCF = High Cost of Fuel. The result of the descriptive analysis on the transportation problems facing the retailing process of petroleum products in Akure is presented in Figure 2 to show the level of significance of the variables.

**Figure 2: Transportation Challenges of Retailing Petroleum Products in Akure**

*Source: Authors’ Field Survey, 2016*
It is noted from the figure 2 that HCF – high cost of fuel has the highest number of “Highly Significance” as assigned by the respondents. This indicates that the cost of fuelling vehicles to transport petroleum products to various retailing points forms the most significant challenge facing the efficient retailing process of petroleum products in Akure. This is based on the fact recent increase in the pump of petroleum products as result of the removal of fuel subsidy by the present government of the country. The significance of high cost of fuel will reflect in the overall cost of retailers business and their profit margin. The bad condition of roads network in Nigeria also affects the efficient retailing process of petroleum products in Akure. This is because refined petroleum products that are retailed in Akure are stored for purchase in other parts of the country especially Lagos, where it needs to be transported to Akure for retailing purpose. As a result, the condition of roads becomes an influencing factor that can inhibit the efficient retailing process of the products. The third most significant challenge facing the efficient retailing process of petroleum products relates to issues of traffic congestion. It has been noted by several studies that traffic congestion imposes high level of pain on road users. It also affect the efficiency of the distribution of goods especially petroleum products within the country. There are several situations of traffic congestion involving petroleum tankers within Lagos especially along Oshodi – Apapa expressway where most of the petroleum tank farms are located. Poor traffic situations involving petroleum tankers are also evident on several roads outside Lagos. The issue of traffic congestion will result into delays and increased cost of product transportation to Akure for retailing purpose.

Conclusion
It was found that the factors considered in this study all together serve as transportation challenges to efficient retailing of petroleum products in Akure. These are bad roads, reckless driving, tanker leakages, armed robbery, heavy traffic congestion, delays at loading port, mechanical problems, accident and fire outbreak, harassment from enforcement agencies and high cost of fuelling vehicle. Among these factors, this study found the recent increase in the pump price of fuel, bad road and heavy traffic congestion as the most significant challenge of retailing petroleum products in Akure.

Recommendation
The study therefore recommends that government should expand the policy of fuel subsidy removal where the total money accrued from the subsidy should be used to improve the condition of roads in Nigeria through proper maintenance, prompt repair and construction. This will go a long way to reduce the overall cost of retailing petroleum products; at the same time, reduce the rate of traffic congestion on our roads.

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References


