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Petrol Price Hike and the Travel Behavior of Commuters in Osun State

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ABSTRACT

One major factor that influences vehicle operating costs and transport rates in Nigeria is fuel. The cost of transportation which is largely induced by fuel prices is a major determinant of traveler's disposition in terms of frequency or number of journeys, distance covered choice of destination, purpose of travel and choice of transportation modes. This paper examines the relationship of fuel hike on the choice of either public or private modes in Osun State. Incidental-Random sampling was used to select 120 travelers from two local government areas in Osun State.

Findings revealed that although fuel scarcity creates scarcity of public transportation and increased fare rates which causes travelers to travel less, travelers prefer to patronize public transit when there is fuel hike because it is considered cheaper relative to the cost of using private means.

It was recommended that the government should provide palliative measures by investing in the provision of mass public transit and subsidizing such services as an alternative to unsustainable subsidization of petroleum products in Nigeria.

Keywords: *Fuel, Transportation Cost, Travelers, Travel Behavior, Public Transport*

INTRODUCTION

Transportation plays a huge role in carrying people and goods from one destination to another in a timely, efficient and effective way. A well-developed and functional transportation system portends the possibility of reaching various destinations and providing quality and affordable service to the travellers.

The ability to provide this service comes with certain vehicle operating costs on the part of service providers and this determines the cost or fare of transportation services. Among other major factors that influences transport costs and transport rates in Nigeria is fuel. According to Innocent, Ogbu and Job (2015), fuel plays a significant role in the production of goods and services in all sectors of the economy, which is why countries find it necessary to subsidize and ensures citizens have access to fuel which is of national importance.

Onyishi, Eme and Emeh (2012) stated that government subsidize fuel to address cases of market failure-mainly poverty especially in developing countries where subsidies are given to allow the poor participate in economic activities. Also, fuel subsidy protects fragile economies from shocks in the international market.

According to Ezeh (2012), fuel in Nigeria is an inelastic product both at demand and supply sides, which means that it is very difficult for consumers to find alternatives to the use of it in their daily lives. Alternatives such as electric trains, solar-powered cars are non-existent in Nigeria and hydropower and dams are not dependable sources of power in Nigeria.

The reality of subsidy is that as the pump price of fuel increases, invariably the cost of everything in Nigeria increases. Therefore, the cost of Fuel affects all other factors influencing transport costs and transport rates.

According to Vurren and Slabbert (2011), travellers are subject to certain behaviour before, during and after travelling. This is

conceptualised as travel behaviour. This behaviour is the direct result of interaction between certain personal and environmental variables on a continuous basis. Travel behaviour can therefore be defined as the way travellers behave according to their attitudes towards a certain product and their response by making use of the product (George, 2004). March and Woodside (2005) stated that specific decisions embrace one or more of the behavioural intensions based on the need to behave in a certain way according to highly defined situations.

In order to predict travel behaviour it is important to understand how individual characteristics of a person interact with the characteristics of the situation, therefore understanding the positive and negative evaluative factors influencing destination choices of the tourists (Holloway, 2004).

Since petroleum products serve as major energy source for the transportation sector which account for 92% of energy consumption in transport sector (Armah, 2003), petroleum prices hikes and its attendant consequence have a bearing on Travel behaviour.

Rising fuel prices in the last few years have led to significant increases in costs for public transit agencies. As fuel prices continue spiraling upward, the added costs are a significant concern for transportation officials. A possible benefit from higher oil prices, though, is an increase in public transit ridership. As the cost of fuelling a car increases, people may seek out ways to reduce fuel consumption, and one such option is public transit.

If an increase in oil prices leads to a rise in transit ridership, then fare revenue would increase, and the added fuel costs for the transit operator would at least be partly offset. A number of news reports across the United States have indicated that transit ridership has increased with the rise in oil prices, but few studies have been conducted to confirm this relationship or measure the extent of it.

It can be observed in Nigeria that the cost of transportation which is largely induced by fuel prices is a major determinant of traveller's disposition in terms of frequency or number of journeys, distance covered choice of destination, purpose of travel and choice of transportation modes. Various researchers have examined many areas of travel behaviour but this study specifically attempts to examine the relationship between fuel hike on the choice of either public or private modes in Osun State.

STATEMENT OF HYPOTHESIS

H0: There is no significant relationship between hike in fuel price and patronage of public transit.

Literature Review

According to Button (1993), the factors that influence decision of travel for travellers or passengers and company are different. For travellers there are four factors which influence the travellers in choosing the mode of transport. There are trips time, financial cost, frequency, and quality of service.

Heye&Timpf (2003) cited three objective factors: the physical environment, the socio-demographic environment, and normative environment factors. In addition, a subjective factor influences the Travellers Consignor Trips time Financial cost Frequency Quality of service Time tabling of the service Reliability Speed Financial cost 20 perception of the three objective factors. In route choice, the physical environment has the largest influence. The same is true for route descriptions or route instructions: the physical environment in the form of landmarks plays the most important role in giving good route instructions (Denis 1997).The influence of socioeconomic issues and mode-related variables are examined using discrete choice analysis. Traveller modal choice is generally explained by three basic factors: characteristics of the journey e.g., length, time of day, and purpose, the socioeconomic characteristics of the traveller, and the transport system (ThamizhArasan et al. 1996).

Other literatures identify added characteristics of the trip itself, land use, and urban design. Hansen (1972) noted that systematic differences in consumer behaviours is based upon socioeconomic and demographic variables may also be studied. It is possible that consumers of different ages or consumers belonging to different social classes differ in their conceptual structures to such an extent that segmentation by means of these criteria is more useful than any kind of segmentation based upon personality tests.

Consumer types such as innovators and opinion leaders are also important. The differences in consumer value structures in that area of interest are those which explain variations in choice behaviour. This value may be inferred from observation of behavioural differences, that is,

underlying differences in conceptual structures may be revealed by systematic differences observed in consumer behaviour.

A research about factors influencing the travel mode choice in Sweden by Wallstrom (1978) mentioned that different purposes (work/school) showed different results. Thus the division into different purposes can be regarded and clearly motivated. Furthermore, the significant variable based on the research results are purpose work/ school (a. Choice between car/ public transport e.g. Bus waiting time, one of the different cost variables, sex, bus interchange time, the need of car while at work, monthly season ticket bus, parking charge (the wrong sign); b. Choice between car/ bicycle e.g. car demand ratio, the need of car while at work, parking charge; c. Choice between bicycle/ public transport e.g. sex, straight line distance, monthly season ticket (bus), bus interchange time and for other purposes (a. Choice between car/ public transport (e.g. Bus waiting time, occupation, monthly season ticket (bus)); b. Choice between bicycle/ public transport (e.g. Straight line distance, sex, bus waiting time, occupation, walking time ratio)

Transport costs are a monetary measure of what the transport provider must pay to produce transportation services. They come as fixed (infrastructure) and variable (operating) costs, depending on a variety of conditions related to geography, infrastructure, administrative barriers, energy, and on how passengers and freight are carried.

Three major components, related to transactions, shipments and the friction of distance impact on transport costs (Jean, Claude and Brian, 2006). Transport rates are the price of transportation services paid by their users. They are the negotiated monetary cost of moving a passenger or a unit of freight between a specific origin and destination. Transport rates are often visible to the consumers since transport providers must provide this information to secure transactions. They may not necessarily express the real transport costs.

The difference between transport costs and transport rates results in either a loss or a deficit from the transport service provider (Jean, Claude and Brian, 2006). Transport systems face requirements to increase their capacity and to reduce the costs of movements. All users (e.g. individuals, enterprises, institutions, governments among others) have to negotiate or bid for the transfer of goods, people, information and capital because supplies, distribution systems, tariffs, salaries, locations, marketing techniques as well as fuel costs are changing constantly. Thus, the choice of a transportation mode to route people and freight within origins and destinations becomes important and depends on a number of factors such as the nature of the goods, the available infrastructures, origins and destinations, technology, and particularly their respective distances. Jointly, they define transportation costs (Jean, Claude and Brian, 2006).

METHODOLOGY

The was study was conducted in Osogbo, the state capital city of Osun and was restricted to two Local Government Areas, that is (Osogbo and Olorunda L.G. As). A total of 60travellers were randomly selected from each Local Government Area using incidental sampling technique, thus making a total of 120 respondents as sample of the study. Data was elicited from the respondents using well-structured questionnaire. Data analysis involved using both descriptive and inferential statistics. Descriptive statistics comprise the use of frequencies and percentages to summarize the data gathered while inferential statistics include the use of Pearson Product Moment Correlation to examine the relationship between fuel price hike and patronage of public transit.

RESULTS AND DISCUSSION

A total one hundred and twenty (120) copies of questionnaire were administered to the respondents out of which a total of one hundred and eighteen (118) copies which were completed returned and found analyzable.

Table 1 presents that fuel hike causes increase in transport rates or fare as 58.5% and 28.8% strongly agreed and agreed respectively while only 12.7% disagreed. Hence it can be asserted that fuel hike causes increase in transport rates or fare.

Table1. *Fuel Hike Causes Increase in Transport Rates/Fare*

	Frequency	Percent
Disagree	15	12.7
Agree	34	28.8
Strongly agree	69	58.5
Total	118	100.0

Source: *Field Survey, 2019*

Table 2 presents that fuel hike causes increase in the cost of operating Public Transport as 58.5% and 26.3% agreed and strongly agreed

respectively, meanwhile, 2.5% are indifferent, 11.9% disagreed and only 0.8% strongly disagreed.

Table2. *Fuel hike causes increase in the cost of operating Public Transport*

	Frequency	Percent
Strongly disagree	1	.8
Disagree	14	11.9
Indifferent	3	2.5
Agree	69	58.5
Strongly agree	31	26.3
Total	118	100.0

Source: *Field Survey, 2019*

Table 3 presents that fuel hike cause scarcity of public transportation. In that, 43.2% and 17.8% chose agree and disagree respectively to the statement. Although 20.3% are indifferent about it, while 13.6% and 5.1% disagreed and strongly disagreed to the statement, it can still be established that hike in fuel causes scarcity of public transport.

Table3. *Fuel Hike Causes Scarcity of Public Transportation*

	Frequency	Percent
Strongly disagree	6	5.1
Disagree	16	13.6
Indifferent	24	20.3
Agree	51	43.2
Strongly agree	21	17.8
Total	118	100.0

Source: *Field Survey, 2019*

Table 4 presents that travel less when there is fuel hike. It denotes that 23.7% of the respondents chose strongly agree, 54.2% chose agree, 9.3% chose indifferent, 8.5% chose disagree while 4.2% chose strongly disagree as option when the. This shows that people travel or make trips only when it is important during fuel hike.

Table4. *Commuters Travel Less when There is Fuel Hike*

	Frequency	Percent
Strongly disagree	5	4.2
Disagree	10	8.5
Indifferent	11	9.3
Agree	64	54.2
Strongly agree	28	23.7
Total	118	100.0

Source: *Field Survey, 2019*

Table5. *Commuters prefer Mass Public Transport when there is Fuel Hike*

	Frequency	Percent
Strongly disagree	1	8
Disagree	12	10.2
Indifferent	24	20.3
Agree	53	44.9
Strongly Agree	28	23.7
Total	118	100.0

Source: *Field Survey, 2019*

Table 5 above presents that commuters prefer mass public transport when there is fuel hike. The table reveals that 23.7% of the respondent strongly agreed, 44.9% agreed, 20.3% are indifferent, 10.2% disagreed while 0.8% strongly disagreed to the statement

Test of Hypothesis

H0: There is no significant relationship between hike in fuel price and patronage of public transit.

Table6. *Correlations*

		Fuel Hike	Patronage of Public Transit
Fuel Hike	Pearson Correlation	1	.866**
	Sig. (2-tailed)		.000
	N	118	118
Patronage of Public Transit	Pearson Correlation	.866**	1
	Sig. (2-tailed)	.000	
	N	118	118
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: *Authors' Computation, 2019*

Table6 above shows that the probability value of 0.000 is less than the threshold of 0.01 ($p < 0.01$). Thus, the correlation test is statistically significant. More so, there is a positive correlation co-efficient of 0.866 which shows that there is a direct correlation which is high between hike in fuel price and patronage of public transport by travellers. Hence, the null hypothesis is rejected and the alternative hypothesis which states that there is a significant relationship between hike in fuel price and patronage of public transit is accepted.

Conclusion and Recommendations

This study has been able to examine the impact of fuel hike on travel behaviour in Osun state.

One of the major aftermaths of fuel scarcity to Nigerians is the hardship that it creates in transportation with restricted mobility as a consequence.

The study revealed that there is significant relationship between fuel hike and patronage of public transit and hence, shows the travel behaviour of commuters within the study area. It was concluded that although fuel scarcity creates scarcity of public transportation and increased fare rates which causes travellers to travel less, travellers prefer to patronize public transit when there is fuel hike because it is considered cheaper relative to the cost of using private means.

It was recommended that the government should provide palliative measures by investing in the provision of mass public transit and subsidizing such services as an alternative to unsustainable subsidization of petroleum products in Nigeria.

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