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Analysis of the Effects of Road Expansion Programme on Shopping Attributes of Owerri City Inhabitants

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ABSTRACT: *This paper ascertained the effects of road expansion programmes of Owerri urban city on the shopping attributes of the inhabitants. The study was carried out in order to determine the extent to which road expansion programmes affected travel time, travel cost, parking facilities, accessibility and shopping expenditures of the city inhabitants. A survey was carried out using structured questionnaire on five point Likert scale. Three hundred and ninety nine questionnaires were distributed among the three roads covered in the study and were all completed and returned for the analysis. Descriptive statistics and Friedman test were used to analyze and test the hypotheses. The results show that road expansion programmes had significant effects on parking facilities on the three major roads covered in the study namely; Okigwe, Douglas and Wetheral roads on its shopping and marketing activities of Owerri city inhabitants. The expansion programmes also affected shops/market locations along the roads when tested at 5% level of significance. Accessibility to shopping centres and city markets were also affected adversely when tested at 5% significant level indicating increased travel time and access to markets. However, shopping expenditures showed significant effects on Wetheral and Douglas roads while Okigwe road showed no significant effects on shopping expenditures. The results of the analysis indicate that road expansion programmes had negative effects on shopping attributes of city inhabitants since it restricts access and increased travel times. The study recommends among others the decentralization of urban land use among the traffic attracting centres.*

KEY WORDS*:* road, urban city, expansion, shopping attributes, inhabitants

INTRODUCTION

There cannot be sustainable transportation without adequate / sustainable transport infrastructure. It is the responsibility of the government to provide transport facilities and infrastructure that ensure adequate safety and security as well as sustainability. Transport infrastructure development among which is road network is very important for the sustainability of every nation and a pre-requisite for effective and efficient transportation system (Boopen, 2006). Road expansion is a transport programme that can either be embarked by the Federal government, State government or Local government as the case may be. In some cases, cities and regions lack the capacities to

provide adequate road network for the free flow of traffic and accessibility, whereas, road network has the relationship with production activities, quality of life and leisure (Al-Hassan, 2015).

Goods and services, raw materials and finished products cannot be easily transported from one location to another without an adequate and efficient road network. Likewise, industries can only be effectively functional when the road networks are good which in turn promote economic development. Roads enhance connectivity in the sense that they link / connect villages, cities, states and countries together (Boopen, 2006). The effectiveness of road expansion depends on the government policy and availability of land space while transportation depends heavily on the condition of vehicle, driver's behavior and the road network itself.

Many Nigerian roads have become danger zones and dead trap to many that ply on them. These failures are as a result of sub-standard materials used during construction, lack of improper maintenance and repair, lack or improper drainage system, narrow roads which require expansion but not taken care of etc. The city of Owerri is not left out of these problems and these problems have exacerbated a lot of road transportation challenges such as traffic crash, traffic congestion, traffic gridlock at the road intersections, poor accessibility to shopping locations and environmental pollution such as carbon emission, dust, and noise among others.

Owerri is the capital of Imo State, located at the Eastern part of Nigeria. The State has three major cities namely: Okigwe, Orlu and Owerri. Owerri is the biggest of them all with three local Governments as follows: Owerri Municipal, Owerri West, and Owerri North. Owerri city booms with social and economic lifestyle which makes it the first choice for those that seek relaxation and entertainment. The city has a concentration of various higher institutions, hotels of different grades, several relaxation spots, shopping malls, supermarkets and traditional markets. These have made Owerri a choice location for several reasons with a very vibrant social and night life that rubs off on the volume of economic activities within the city. These factors mentioned above have over the years put pressure on the existing road network and infrastructure within the city such that the volume of vehicular traffic on existing road corridors might not be capable of carrying the traffic volume easily. Road network is an important factor affecting urban transportation. Due to these pressures on the road network, the government decided to expand the major road corridors in Owerri city, namely: Wetheral Road, Orlu Road, Okigwe Road, Egbu Road, Douglas Road, among others. These roads crisscross the entire length and breadth of Owerri city cutting across higher institutions, churches, residential buildings, shops, supermarkets and ultimately the two major markets in Owerri city namely: New market and Eke Ukwu Owerri.

With the commencement of the expansion of these roads also came the demolition of various structures such as shopping mall / plazas, market squares, churches, banks, filling stations, motor parks (to mention but a few) as a result of road development / expansion. The road expansion programmes although good in terms of expanding the capacity of the road network but might have some effects on the lifestyle, locational attributes of businesses like supermarkets, city markets etc and also shopping expenditure of the Owerri city inhabitants.

The acquisition of land for road development may definitely have both positive and negative effects on the life of the inhabitants. Ogwude (2011) noted that where roads are narrow, it will still not be possible to improve traffic flow by a significant widening roads or restructuring without possible environment degradation or infringement on human rights. Such externalities include displacement of families from their homes, loss of farmland for roads, loss of businesses, market square been destroyed and relocated to remote places which might not be readily accessible by old and potential customers. There may also be occurrence of accidents and encroachment of parking facilities where there was no relocation during road widening.

Generally, population growth, high mobility, enhanced economic activities and the increase in income all combine together to generate high demand for transport service which have some negative impacts for development (Ugboaja, 2007). Owerri city is the capital of Imo State and as a result, the most populous city within the state. Beyond this, the city has a concentration of a lot of higher institutions, entertainment and relaxation centers. These factors over time attracted (and keep attracting) a lot of migrants not only from the rural areas to the city but people from other states for reasons such as employment, business (economic) or investment purposes, in addition to the ever growing students population. The resultant effects of these are population explosion, increased economic activities and increased transport demand without corresponding transport infrastructure development. Given the above, this calls for effective demand management of the transport system as well as transport infrastructures.

The rapid growth in transport services and demand and its negative effects therefore led to the need for the expansion of existing road networks in order to deal effectively with the problems and simultaneously provide adequate mobility and access in Owerri metropolis. However, demolition of buildings as a result of expansion of road segments could have some negative impacts on the city inhabitants. These could lead to high cost of living among the city inhabitants and possibly result into high transportation cost and travel time delays, lack of parking space for shoppers, relocation of businesses, accessibility problems and eventually loss of businesses. However, existing studies have shown that location, accessibility, parking facilities are important variables that could influence the choice of mode of travel and also influence shopper's satisfaction.
The study is therefore concerned with investigating the impacts of road expansion programme on shopping behavior of Owerri city inhabitants. The aim of the study is to analyze the effects of road expansion programme on the shopping attributes of Owerri City inhabitants.

LITERATURE REVIEW

Road expansion development has the potential to impact job creation, skills development and social responsibility among others, however, has a negative impact on lifestyle and business establishment**.** In order to understand the effects of road expansion on the shopping behavior of the city inhabitants, it is important to have an understanding of the Theory of Planned Behavior (TPB) that refers to consumer behaviors in a perceived power which is the perceived presence of factors that may facilitates or impede performance of a behavior. Planned Behavior can be

attributed to consumer behavior in a perceived environment. The Theory also states that behavioral achievements depend on motivational factor and ability. And these explain the overall execution of specific behavior (Ajzen, 1991). Ajzen (1991) assumed that motivational factors influence behavior by capturing the person's intention to perform the behavior.

Perceived environment in this context such as locational factors (e.g. site, raw materials for industries, power, transport, market site, climate, local, regional and global accessibility to suppliers and customers), Accessibility factors (e.g mobility, quality of affordability of transport options, Transport system connectivity, mobility substitutes and land use pattern, mode, location or activity), parking facilities factors (e.g. availability of land space, parking structures/design), transportation cost factors (private and public car) e.g. distance, fuel cost, vehicle capacity, customer loyalty, weight, demand for freight, labor market for commercial drivers) among others can negatively or positively affect the shopper's behavior. For instance, provision of these factors in a shopping environment can motivate an individual for shopping while lack of these may definitely hinder the intention for shopping. By applying this theory in this research, it has specifically focused on the effect of these factors on shopping attributes and how city inhabitants make preferences of where to shop given the road expansion programme. The stronger the person's intention to engage in behavior, the more likely the behavior will be performed (Ajzen, 1991). According to Ajzen (1991), perceived behavioral controls a person's perception of the perceived power or difficulty or ease of performing the interest, For instance, does a person perceive potential barriers to market / shopping location?

The Theory of Reasoned Action (TRA) posits that consumers are rational thinkers who choose to act in their best interest. Also in the application of this theory to this research, it is believed that shoppers are rational thinkers whose shopping attributes will reflect their best interest given the road expansion programme in the city. Road are usually built to provide the transportation corridors between population centers or between industrial or resources centers and users. In such cases, development and resources use or the expectation of them precede and motivate the construction of roads. However, roads also can bring about development or environmental exploitation by providing access to secondary (not the resources that the road was built to access). According to Forman and Reineking (2003), roads are created because of changing interaction between people and their environments. Government construct and maintain roads to provide a number of social benefits such as providing mobility, transportation of goods and people and sustaining economic growth. One of the considerations in the process of road development is the recognition and management of environmental concerns. Mannering, Walter and Scott (2001) refers road as an economic penetrating route which is required to open ways for new investment activities such as commerce and agricultural activities. The increasing number of vehicle brings many benefits but is also associated with negative effects including congestion and air pollution. The effects of growth of motor vehicle use and road networks are viewed by some people as inevitably adverse while others argue that national patterns of motor vehicle use are sustainable (Remy, Prud'homme, Richard, David, Achin and Bent 1997).

In urbanized areas, road construction has high economic costs and is politically contentious. The number of inhabitant residing in the right off- way of planned urban roads is a concern in both high income and developing countries. Some past studies found that income is a major determinant of the length of roads at national level and a strong determinant of vehicle ownership at both the country and city level. The road network at the national level primarily connects urban centers and provides access to rural areas. Urbanization might raise the demand for non- urban road because specialization of production in individual cities associated with urbanization may increase demand for roads between cities. Income growth increases benefits from urban roads and may stimulate additional road provision to receive congestion (Ingram, Gregory and Zhi Liu 1998). According to Ingram et al (1998) in their empirical evidence theory, found that the elasticity of urban road length with per capital income is not constant as it is at the national level but increases with income and elasticity of road length with population density is much stronger at urban than the national level. The primary responsibility for the urban transportation is the movement of city population growth. Urban areas are directly showing strain resulting from high population growth that are not commensurate with the infrastructure e,g (road), service provision and employment creation. According to Sudhira (2008), urbanization is a form of metropolitan growth that is responsible to often less understood implications on technological economic, social and political forces and to the physical geography of an area.

Urbanization causes decline in agricultural land use, changing social interaction and lifestyles, increasing land values and rents, among others were some of the effects of rural transformation. Urbanization is not a threat to the environment and development in this context but the strain pose on infrastructure especially on transport infrastructure which affects the mobility and access becomes a matter of concern. Asamoah (2010) noted that the unplanned expansion of cities and road infrastructure and encroachment by people for various activities has contributed to land use change more so towards the urban fringes. Urban sprawl refers to expansion of urban areas to agricultural land caused by high population growth and rural urban migration. Turcotte (2008) refers urban sprawl as the dispersed development outside compact urban and rural centers that is along highways and in rural country side. Lack of planning and forecast of urban growth and sprawl can pose serious threat on the infrastructure including basic amenities such as water, electricity etc.

Land use planning provides an excellent tool for the management of a variety of influential human activities by controlling and designing the ways in which humans use land and natural resources. Land use planning has been used as a means of controlling development especially in urban areas for economic development. Rapidly increasing urban population means changes in economic, social, spatial and environmental issues for the improvement of society. Urbanization leads to expansion of cities and results in changes in land use and its effects are seen in the cities and hinterland areas. The main area of direct impacts of city expansion is the urban space which is characterized by diverse uses of land that often varies in relation to their functional linkages to urban and rural sectors (Nsiah-Gyabaah, 2000).

Olima (2003) stated that rapid population growth goes with a lack of equivalent growth in urban land supply. The conversion of the amount of the agricultural land use to urban land use such as residential, industrial and infrastructural development are the key challenges of the urbanization process. It is on this line that Masakazu (2003) opines that land use planning and management played crucial role in avoiding and mitigating the adverse impact of rapid, unplanned urbanization. Asamoah (2010) noted that urban planning plays an important part in increasing the capacity of cities to cope with population growth. Poor planning leads to inefficiencies and institutional rigidities that hasten diminishing returns and causes in operative capacities. Turcotte (2008) found that land use and transportation are intertwined and lies on the effective transport network. Road expansion depends on the road infrastructure and network. Roads can be expanded if the widths of the road networks are narrow and cannot contain the vehicular movement through easily traffic.

The sustainability of an urban area has to do with the ease of commuting within the various cities and this depends hugely on the nature of road network. The absence of road connections to the communities is seen as a barrier for economic development in the region. The improvement of road access has created substantial, social, cultural, demographic, institutional and environmental enhancement in both the rural and urban areas. However, transportation cannot make much impact when there is no adequate infrastructure. Therefore, transport infrastructure is a key to successful effective and efficient transport system. Al-Hassan (2015) noted that an efficient road transport network has a critical role to play in attaining national economic growth and development. The rapid increase in population growth within a locality also has a direct effect on transport demand. In a situation wherein there is no commensurate improvement on existing infrastructure, in that case, strain on the transport capacity physical infrastructure within that locality sets in. This situation poses capacity crises which generate problems such as increase in congestion, pollution and safety problems in the system. To solve this problem therefore, expansion of the road infrastructure and building a new road becomes an option. However, Flaherty (1997) states that this option (road expansion) has limited role to play in solving the problems.

Road expansion programme aims to improve access to rural, urban and economically productive areas by removing major constraints to transport services on the country road network. Studies have shown that the improvement on transportation by giving priority in road development will definitely enhance the socio economic activities of the area thereby improving the well-being of people in the area (Darkyes and Ogbuli, 2012). Research has also shown that automobile dependency promote road expansion and sprawling growth patterns both of which spur new travel (Willians, Burton and Jerks, 2000). Road expansion / development will be inevitable path of success for the area whereas, unexpanded roads has great negative impacts on the socio economic activities. The negative impacts and growing activities led the government to consider development of road infrastructures and expansion as a solution to congestion crisis. Roads are clearly a critical enabling condition for improving living conditions in both rural and urban areas. According to Ogwude (2011), inadequate capacity and poor conditions of roads reduce vehicle speeds and engender traffic congestions, reduce productivity for all vehicle type and increase the

cost of maintenance. Consequently, road expansion and improvements have effects on induced demand, induced travel and induced traffic.

Transportation system can improve the economy, development patterns and influence quality of life and natural environment. Land use and transport are intertwined. Development of transport infrastructure can help shape land uses by creating accessibility and mobility for users. New interchanges also offers some existing users of road network travel time savings thereby increasing demand for new development on these routes. The importance of coordination between transportation and land use planning cannot be over-emphasized. Lack of coordination between transportation and land use planning can easily affect each other to be able to carry out its responsibility effectively. It is therefore important to adapt institutional context in which land use and transportation planning take place (Rodrigues, 2010). Roads are only one tool in a transport management toolkit. Congestion is a major source of frustration for road users and has worsened over time in most cities. Introducing congestion charging, investing in public transport and building more roads are the solutions (Mathew and Michiel, 2015).

In Nigeria, traffic can be controlled using traffic police or wardens, use of traffic light, speed breakers such as speed bumps and use of defective vehicles and vehicular checks by Federal Road Safety Corps (Ogwude, 2011). In most countries, roads are the major transport mode for both freight and passengers. This is because roads enhance accessibility to market and service. Road network sustainability refers to the continuation of transport services and corresponding benefits from the road facilities. Roads can deteriorate overtime as a result of many reasons such as wear and tear of expected and unanticipated traffic or lack of maintenance and repair. Road maintenance refers to the processes and resources that are combined to manage road conditions and the longevity of the assets. Inadequate road maintenance shortens the life of the road and leads to high operating costs and high incidence of accidents. It is the part of activities required to ensure an affordable and efficient road system. However, lack of direct funding mechanism means that there are risks relating to sustainability inherent in nature of such roads as public goods (Ogwude, 2011).

METHODOLOGY

The study employed a field study survey research whereby research hypotheses were tested at appropriate level of significance. The research instrument comprises of the two part-mixed methodologies. The qualitative and quantitative methods were both adopted. The first part which is the qualitative method involved conducted interviews which allowed respondents to comment freely about the impacts of road expansion programme on their shopping attribute while the second part (quantitative method) was questionnaire based survey. The Stratified sampling technique was the research technique employed for this study and administration of questionnaires were done through simple random sampling method whereby an initial starting point was randomly selected in each route under study.

Owerri Municipal is a Local Government Area in Imo State Nigeria (see Figure 1). It's headquarter is in the city of Owerri. It has an area of 58km^2 and a population of 127,213 according to 2006 census figure. Owerri city sits at the intersection of roads from PortHarcourt, Onitsha, Aba, Orlu, Okigwe and Umuahia. Eke Ukwu market and New market were the main markets in Owerri Municipal. Eke Ukwu market is the trade center for food stuffs including palm products, maize, yams and cassava while the new market is mainly for electronic products and spare- parts. The major metropolis (Wetheral, Douglas and Okigwe roads) were engaged by various people using different shops along the route for different businesses.

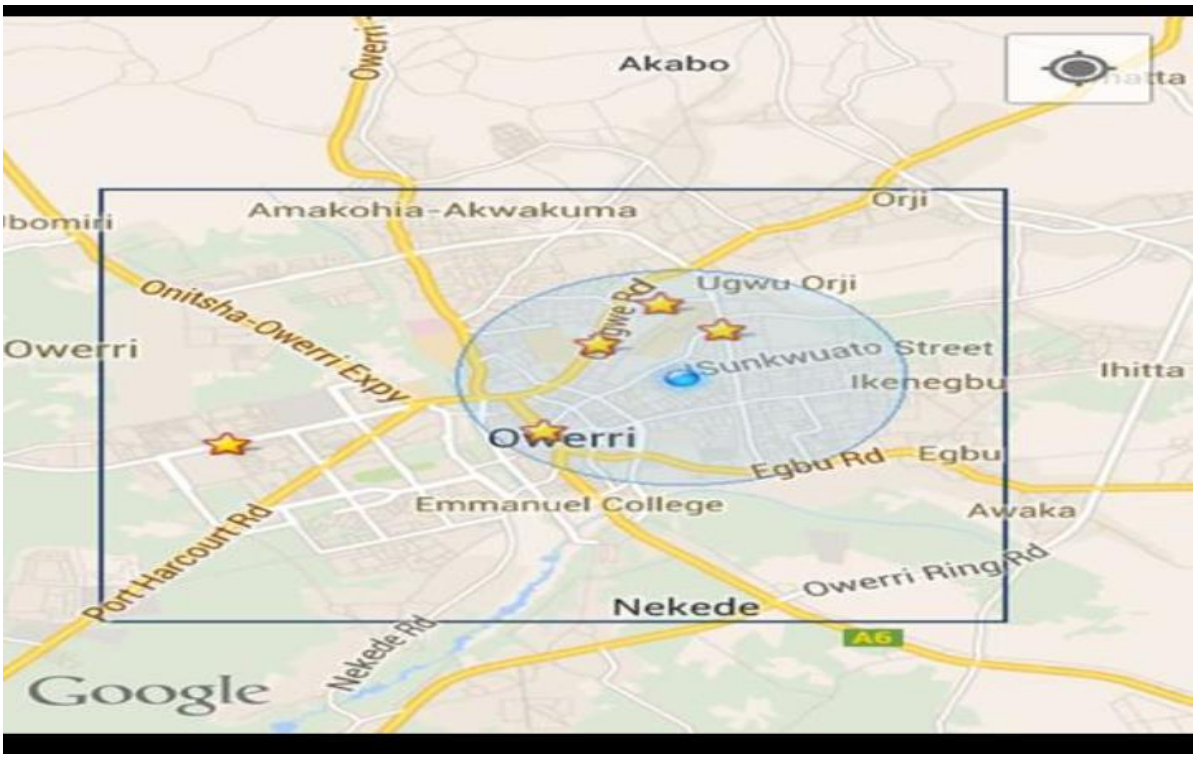

Figure 1: **Map showing Owerri Metropolis**

Target population in this study includes the retail shop owners, distributors, general business operators, traders in the city markets, consumers / shoppers that are situated along Wetheral road, Douglas road and Okigwe road respectively. The populations under study were Owerri city inhabitants and they are all Nigerian citizen mainly of Ibo ethnic group. The population comprises of male and female shoppers / traders on three locations mentioned earlier. The age bracket of the respondents ranges from 18 years and 65 years above with income level between ₦20,000 and above ₦100,000. According to 2006 population census figure, the population size of Owerri Municipal was 127, 213. The sample size of this study was calculated using Yamane Taro's formula. Structured questionnaires were designed on five-point Likert Scale in a closed-ended survey questions. The five (5) structured closed-ended questions interviewed the respondents on their opinions or the impacts of road expansion programme on their shopping attributes and a fixed choice response formats were designed to measure attitudes or opinions. The respondents have

five choices; strongly agree, agree, neither agree nor disagree, disagree and strongly disagree to choose from the most appropriate and their responses were recorded for analysis. The numerical questions were split into categories. In this research, categorical survey questions were also used to ascertain the age brackets of the respondents distinguishing young individuals (18 and younger), rather individuals (19-34), middle age individuals (35-50), rather old individuals (51-64) and old individual (65-and higher). Categorical survey questions were also used to distinguished income brackets of the respondents.

Data gathered were analyzed by data processing which transferred the collected data to coded data for further processing through the use of computer. Data obtained from social demographic characteristics of respondents were analyzed using simple descriptive statistics. The respondent's scores and ranking of variables considered being among effects of road expansion programme were computed. The most ranked variables were also determined based on the Likert scale. Then the mean ranking of factors in highest / descending order of effects were computed and the Friedman statistical test was used to test relevant hypotheses at appropriate level of significance.

RESULTS AND DISCUSSIONS

This presents the results of data analysis of three different locations under study namely; Wetheral road, Douglas road and Okigwe road. Road Expansion Programmes on parking facilities affected business activities due to loss of parking facilities for potential customers and these eventually led to loss of businesses. The road expansion programmes also affects location of shops / market centres in such a way that potential customers were not able to locate new business premises easily which have negative impacts on customers patronage. The non- access road to shopping centres / city markets affected travel time and delay movements resulting to increase in transportation cost. Road expansion programmes have effects on shopping expenditure of city inhabitants which resulted into increase in the cost of travel, cost of goods and services in the markets hence changing their normal shopping lifestyle.

Ranking Effects of Road Expansion Policy (REP) parking facilities available at Shopping/ market centres

The road expansion policy on parking facilities affected shopping in such a way that, customers were at the risks of losing their vehicles due to lack of convenient place to park their vehicles while shopping. These resulted into loss of customers and reduction in profit for business operators because of lack of patronages from potential customers which eventually led to collapsed in business, indicating negative impacts on the inhabitant's shopping attributes (see Table 1).

Table 1: Mean Ranks of Road Expansion on Parking Facilities

Variables	Mean Ranks
There were risks of the customer's vehicles theft/loss.	3.44
There were generally loses of parking facilities for shopper.	3.23
There were losses of customers as a result of lack of parking facilities emanated from road expansion policy.	2.98
Road expansion policy (REP) on parking facilities resulted to reduction on profit/income.	2.82
Road expansion policy (REP) on parking facilities resulted to loss of business because of no patronage from potential customer.	2.53

Table 2: Test Statistics for parking facilities at Wetheral Road

	N	Chi- Square	Df	Asymp. Sig.
parkingfacilities@wetheral	123	38.175	4	.000

a. Friedman Test Note: (P < 0.05) = Significant at (5%)

There was a statistical significant effect of road expansion programme on parking facilities available at shopping/market centers ($p < 0.05$), therefore, we can reject the null hypothesis and accept the alternative (see Table 2).

Ranking Effects of Road Expansion Programme on Location of Shops/Market Centres

The road expansion programme affected the location of shops / market centers in the sense that, there were loss of potential customers and businesses due to inability to access the shopping locations. Shoppers were at the risk of losing even their vehicles in search of the locations accompanying with far distance. These resulted into increase in transportation cost for both transport operators and commuters. Table 3 explained that and test statistics in Table 4..

Table 3: Mean Ranks Of Road Expansion On Location

Variables	Mean Ranks
Loss of potential customers.	3.29
There was loss of business as a result of the location	3.21
Exposure to theft	3.06
Location of shops / market centers lack accessibility	3.02
There was high transportation cost due to the far location of the shops/market centers	2.42

Table 4: Test Statistics for Shop **Location at Wetheral Road**

	N	Chi-Square	Df	Asymp.Sig
shoplocation@wetheral	129	40.003	4	.000

a. Friedman Test Note: (p < 0.05) =significant at (5%)

The test statistics show that, there was a statistical significant effect of road expansion programme on locations of shops/market centers since ($p < 0.05$), therefore, we can reject the null hypothesis and accept the alternate hypothesis.

Ranking Effects of Road Expansion Programme on Accessibility to Shopping Centers/City Markets

The road expansion programme impacted on accessibility to shopping centers / city markets negatively. The results showed that shoppers / consumers experienced decrease in economic activities and patronages from potential customers as a result of non- access road to the shopping centers / city markets which influences transportation costs due to travel delays

Table 5: Mean Ranks Of Road Expansion On Accessibility

Variables	Mean Ranks
Decrease in economic activities as a result of non-access road.	3.10
There were high transportation costs due to lack of accessibility.	3.06
Decrease in patronage from potential customers.	3.01
There were travel time delays as a result of traffic congestion.	3.00
Difficulty in accessing the shopping centers / city markets.	2.83

Table 6: Test Statistics for **accessibility at Wetheral Road**

	N	Chi- Square	Df	Asymp.Sig
accessibility@wetheral	124	17.346	4	.013

a. Friedman Test Note: (P < 0.05) = Significant at (5%)

There was statistical significant effect of road expansion programme on accessibility to shopping centers / city market ($p < 0.05$), therefore we reject the null hypothesis and accept the alternative hypothesis as shown in Table 6.

Ranking effects of Road Expansion Programme on Shopping Expenditure of Center City Inhabitants

The results in Table 7 gives answer to the research question and support negative effects of road expansion on city shopping attributes. Shoppers acknowledged that there were drastically change in their normal shopping lifestyles (buying in larger quantities) and also decreased in patronage due to high cost of living, making it difficult for most of them not to continue their shopping in the city centres.

Table 7: Mean Ranks Of Road Expansion On Shopping Expenditure

Variables	Mean Ranks
Change in shopping lifestyle. E.g. shopping in smaller/lower quantities instead of larger/higher quantities.	3.42
There were decrease in patronage of goods and services.	3.22
There were high cost of goods and services in the city markets.	2.88
Consumers shift from the main city to rural markets for cheaper items.	2.87
There was decrease in consumption of food items as a result of road expansion programme on shopping expenditure.	2.62

Table 8: Test Statistics for shopping expenditure at Wetheral Road

	N	Chi-Square	Df.	Asymp. Sig.
Shoppingexpenditure@wetheral	125	27.001	4	. 000

Friedman Test Note: ($p < 0.05$) = Significant at (5%)

There was a statistical significant effect of road expansion programme on shopping expenditure of city inhabitants from Table 8since p- value is less than 0.00, we reject the null hypothesis and accept the alternative hypothesis.

Ranking effects of Road Expansion Policy on Parking Facilities Available at Shopping/Market Centers

The analysis of the mean rank values in Table 9 has shown that shoppers are at the risk of losing their vehicles because of no convenient place to park exposing vehicles to theft. The lack of parking facilities has effects on business activities resulting to loss of customers, lack of patronage from potential customers and income reduction from sales which eventually led to loss of business.

Table 9: Mean Ranks Of Road Expansion On Parking Facilities

Variables	Mean Ranks
There were risks of the customer's vehicles theft / loss.	3.49
There was generally loss of parking facilities for shoppers.	3.22
Road Expansion policy (REP) on parking facilities resulted to reduction of profit / income.	2.19
Road expansion policy (REP) on parking facilities resulted in loss of business because of no patronage from potential customers.	2.80
There was of loss of customers as a result of lack of parking facilities emanated from road expansion policy.	2.30

Table 10: Test Statistics parking facilities at Douglas Road

	N	Chi-Square	Df	Asymp.Sig
parkingfacilities@douglas	127	59.903	4	.000

a. Friedman Test Note: (p < 0.05) = significant at (5%)

The statistical test has shown that there was statistically significant effect of road expansion policy on parking facilities available at shopping / market centers ($P < 0.05$), therefore we can reject the null hypothesis and accept the alternative hypothesis (see Table 10).

Ranking Effects of Road Expansion Programme on Location of Shops/Market Centers

Locations of shops / market centers were affected in the sense that, there were lacks of accessibilities to shopping centers exposing the area to theft. These increases the transportation costs leading to loss of potential customers and loss of businesses by business operators. Refer Table 11, Table 12 analyzed the test statistics.

Table 11: Mean Ranks of Road Expansion on Location of Shops/Market Centres

Variables	Mean Ranks
Location of shops / market centers lack accessibility.	3.50
Exposure for theft.	3.21
There was high transportation cost due to the far location of the shops / market centers.	2.83
There was loss of businesses as a result of the Locations of shops / market centers.	2.81
Loss of potential customers.	2.66

Table 12: Test Statistics Location at Douglas Road

	N	Chi- Square	Df	Asymp, Sig
location@douglas	126	38.120	4	.003

a. Friedman Test Note: ($p < 0.05$) = significant at (5%)

The test statistics in Table 12 show that there was a statistically significant effect of road expansion programme on location of shops/market centers ($p < 0.05$), therefore we can reject the null hypothesis and accept the alternative hypothesis.

Ranking Effects of Road Expansion on Accessibility to Shopping Centers/City Markets

The mean ranks on accessibility in Table 13 above has shown that shoppers/consumers experiences decrease in economic activities and patronages from potential customers as a result of non-access road to the shopping centers / city markets which influences transportation costs due to travel time delays. The road expansion programme therefore, has negative impacts on accessibility to shopping/city markets.

Table 13: Mean Ranks Of Road Expansion On Accessibility

Variables	Mean Ranks
Decrease in patronage from potential customers.	3.13
Decrease in economic activities as a result of non-access road.	3.03
There were travel time delays as a result of traffic congestion.	2.98
There were high transportation costs due to lack of accessibility.	2.98
Difficulty in accessing the shopping centers / city markets	2.88

Table 14: Test Statistics for accessibility at Douglas Road

	N	Chi- Square	Df	Asymp.Sig
accessibility@douglasroad	126	45.126	4	.000

a. Friedman Test Note: ($P < 0.05$) = Significant at (5%)

There was a statistical significant effect of road expansion programme on accessibility to shopping centers / city markets ($p > 0.05$), therefore, we can reject the null hypothesis and accept the alternative hypothesis.

Ranking effects of Road Expansion Programme on Shopping Expenditure of Owerri City Inhabitants

There were change in shopping lifestyles of city inhabitants (shopping in lower quantities instead of higher quantities) as a result of high cost of goods and services which prompted consumers/ shoppers to shift their purchase to the rural markets in search of cheaper items leading to both decrease in patronage of goods and services and food item consumptions (see Table 15).

Table 15: Mean Ranks Of Road Expansion Programme on Shopping Expenditure

Variables	Mean Ranks
Change in shopping lifestyle. e.g. shopping in smaller/lower quantities instead of larger/higher quantities.	3.40
There were high cost of goods and services in the city.	3.05
There were decrease in patronage of goods and services.	2.97
Consumers shift from the main city to rural markets for cheaper items.	2.92
There was decrease in consumption of food items as a result road expansion programme.	2.67

Table 16: Test Statistics for **shopping expenditure at Douglas Road**

	N	Chi- Square	Df	Asymp.Sig.
shoppingexpenditure@douglas	130	25.330	4	.000

a. Friedman Test Note: (P < 0.05) = Significant at (5%)

There was a statistical significant effect of road expansion programme on shopping expenditure of Owerri city inhabitants ($p < 0.05$), therefore we reject the null hypothesis and accept the alternate hypothesis (see Table 16).

Ranking Effects of Road Expansion Policy (REP) on Parking Facilities available At Shopping/Market Centers at Okigwe Road

The road expansion policy on parking facilities affected general business operations and shoppers were at the risk of losing their vehicles because of no convenient place to park, exposing vehicles to theft. The lack of parking facilities also have effects on business activities resulting to loss of customers, lack of patronage from potential customers and income reduction from sales which eventually led to loss of business (see Table 17).

Table 17: Mean Ranks Of Road Expansion On Parking Facilities

Variables	Mean Ranks
There were generally losses of parking facilities for shoppers.	3.41
There were risks of the customer's vehicles theft /loss.	3.28
Road Expansion policy (REP) on parking facilities resulted to reduction of profit / income.	2.97
Road expansion programme (REP) on parking facilities resulted to loss of business because of no patronage from potential customers.	2.84
There was loss of customers as a result of lack of parking facilities.	2.50

Table 18: Test Statistics parking facilities at Okigwe Road

	N	Chi- square	Df	Asymp.Sig.
parkingfacilities@okigweroad	129	39.110	4	.000

a. Friedman Test Note: ($p<0.05$) = significant at (5%)

From Table 18, there was statistical significant effect of road expansion policy on parking facilities available at shopping/market centers ($p < 0.05$), therefore we can reject the null hypothesis and accept the alternative hypothesis.

Ranking Effects of Road Expansion Programme on Location of Shops/Market Centres

The results have shown that it was difficult for shoppers to access the shopping locations and this exposes the area to theft and increases transportation costs for motorists and commuters as well. These also affect business activities, loss of the potential customers and shoppers as well (See Table 19).

Table 19: Mean Ranks Of Road Expansion on Location

Variables	Mean Ranks
Locations of shops / market centers lack accessibility.	3.38
Exposure to theft.	3.17
There were losses of business as a result of the location.	2.94
Loss of potential customers	2.83
There was high transportation cost due to the far location of the shops / market centers.	2.68

Table 20: Test Statistics for shop location at Okigwe Road

	N	Chi- Square	Df	Asymp.Sig
location@okigweroad	125	41.510	4	.004

a.Friedman Test Note: ($p < 0.05$) = Significant at (5%)

There was a statistical significant effect (see Table 20) of road expansion programme on location of shops / market centers ($p < 0.05$), therefore. We can reject the null hypothesis and accept the alternative hypothesis.

Ranking effects of Road Expansion Programme on Accessibility to Shopping Centers/City Markets

The road expansion programme on accessibility to shopping centers / city markets affected shoppers and consumers such that they experiences travel time delays due to traffic congestion (as shown in Table 21). The congestion posed difficulties in travel movements and affected consumers and shoppers such that they find it difficult in accessing the shopping centers and city market. These factor increases transportation costs, resulting also into decrease in economic activities and patronages from potential customers.

Table 21: Mean Ranks Of Road Expansion Programme on Accessibility

Variables	Mean Ranks
There were travel time delays as a result of traffic congestion.	3.10
Difficulty in accessing the shopping centers / city markets.	3.03
There were high transportation costs due to lack of accessibility.	2.99
Decrease in economic activities as a result of no-access road.	2.99
Decrease in patronage from potential customers	2.93

Table 22: Test Statistics for accessibility at Okigwe Road

	N	Chi-Square	Df	Asymp, Sig.
accessibility@okigweroad	127	21.910	4	.000

a. Friedman Test Note: ($p < 0.05$) = Significant at (5%)

The test statistics in Table 22 has shown that there was a statistical significant effect of road expansion programme on accessibility to shopping centers / city market ($p < 0.05$), therefore, we reject the null hypothesis and accept the alternative hypothesis.

Ranking Effects of Road Expansion Programme on Shopping Expenditure of Owerri City Inhabitants

Road Expansion Programme is predicated to have a strong influence in the shopping lifestyles of the inhabitants with attendant high cost of goods and services in the city (see Table 23).

Table 23: Mean Ranks of Road Expansion on Shopping Expenditure

Variables	Mean Ranks
There were high cost of goods and services in the city.	3.18
There was decrease in consumption of food items as a result of road expansion programme on shopping expenditure.	3.09
Change in shopping lifestyle. e.g. shopping in smaller / lower qualities instead of larger / higher qualities.	3.01
Consumers shift from the main city to rural markets for cheaper items.	3.00
There were decrease in patronage of goods and services.	2.71

Table 24: Test Statistics for shopping expenditure at Okigwe Road

	N	Chi- Square	Df	Asymp. Sig.
shoppingexpenditure@okigwe road	128	9.270	4	.055

a. Friedman Test Note: ($p > 0.05$) = Significant at (5%)

There was no statistical significant effect of road expansion programme on shopping expenditure of Owerri city inhabitants, ($p > 0.05$) according to Table 24, we therefore accept the null hypothesis and reject alternative hypothesis.

CONCLUSION

The negative impact of poor road infrastructure network and narrow roads with the attendants' problems of traffic congestion and travel time delays and other negative effects prompted the

government to embark on road expansion programmes within the central business districts of Owerri metropolis to enhance vehicular traffic and flow human activities along the major roads corridors. The roads expansion programmes which conceived with the intention of enhancing traffic flow thereby increasing accessibility were however found to pose some negative impacts and affected the shopping lifestyle and expenditure pattern of the people during the period of construction. The findings agreed with the work of Ogwude (2011) which states that it will still not be possible to improve traffic flow by a significant widening of roads without environmental degradation or infringement on human rights. The road expansion programme in Owerri Urban has adversely affected the locational attributes of businesses thereby making it difficult for consumers / shoppers to access the shopping centres easily. In terms of parking facilities, shoppers have generally lost their parking facilities and access to shopping / markets since these attributes were found to be very difficult due to road construction activities.

The study also found consumer behaviour which under choice making through consumer motivation and buying behaviour were influenced by some factors which shifts to more environmentally friendly shopping locations, understanding of how and where to make purchases agree with extant literature on consumer behaviour. The study also found that environment influences persons emotional state hence the buying behaviour. The shopping mall / market environment influences the behavioural habits/customers tendencies and the buying process in retail environments is triggered when consumers recognized that they have quality access road to the particular location and could spend less time to drive to shopping locations with convenient parking facilities. Location, accessibility and transportation costs have been found to be factors influencing shoppers' satisfaction and operational costs increases with the nature of roads and travel time delays. The Theory of planned behaviour and reasoned action agrees with our findings that consumers / shoppers are likely to be motivated and attracted based on the prevailing conditions at a particular time of purchase. The study found out that location, accessibility to the shopping centres as well as the environment itself can motivate or reduce purchases. These factors were found to be significant at 5% level in our study. Road expansion on Owerri affected access to shops / markets and restricted parking facilities which increased access time to markets.

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