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TRAFFIC MANAGEMENT IN GARIKI RESIDENTIAL AREA, ENUGU STATE, NIGERIA

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Abstract
From the 1900(s) period when coal was discovered in Enugu and its prospecting started in about 1905 through 1909, Enugu has reflected a promising trend as a growth centre. In about 1917 township ordinance section 29 subsection 10, the population growth and the emergency of residential neighourhoods of which Garki is one, became significantly clear. With this growth, Garki, the study area, has experienced serious problems on traffic flow which continues to hinder the work to reach activity points in the city. Given this fact, the research was carried out with a more to identify these stress factors and recommending strategies of mitigating them. Data for the study was sourced through two main sources, namely, the primary and secondary, respectively. Area of traffic conflicts due to road encroachment, substandard, right-of –ways and reckless driving. The role of traffic wardens and Law enforcement agents were evaluated. Findings reveals gave negligence on the side of monitoring agents on the other hand, and the need for road user to be educated on the side of the urbanites, the issue is whether intervention to these problems is necessary and when? The growing and mounting losses to life and property calls for immediate intervention. One of the recommendations is that government should ensure that adequate traffic management personnel are put in place in other to regulate the traffic flow in the area
Keywords: *Traffic, Management, Problems, Residential, Garki*

Introduction

The trend of urban expansion in most developing countries are featured by rapidity of urbanization outpacing, industrialization and high rate of urban population growth by natural increase and rural to urban migration (Filani, M.O, 1989).The pace of urbanization in most developing countries like Nigeria, since the second World War has accelerated remarkably and is expected to continue to do so for some time to come. (Oyesiku O.O.2002). In Enugu metropolis, especially Garki area of Enugu, the pace of urbanization has been dramatic showing extra ordinary high rates of traffic delays, hold-ups, congestions, chaos and accidents in this outing sub-urban area. (Agumama1994). The direct implication of this trend is that there would be an exception to traffic delay. In fact, this increase in urbanization has led to great demand of public transport in the study area. However, transportation is an essential instrument for all aspect of city's and nation's development. (Adeimila, A.1971). This is due to the fact that people would always move from their origin to their destination as

well as distribute their goods and services within and between cities it is due to statement above that (Ikechukwu N., 1996) observed that the city as an engine of economic development and centre of industry, commerce and administration functions on with an efficient system of transportation. It would be useful at this stage to establish that a reciprocal relationship exists between transportation systems and urban land use, as the former determines the intensity and patterns of activity within the study area.

The concentration of people and activities in the centre, the rapidity increasing number and complexity of functions they perform, and competition of space have brought about ever increasing separation between work places and residential areas. Hence, workers of urban area face numerous problems like traffic congestion and delay in their journey from their home to work.(Asuqo.B.O.2000) added that nothing can produce more confusion and social cost to a developed region that the existence of inadequately planned transportation system and incompatibility of land use activity patterns. This statement is geared to the developed nation that have conscious public policies and plans which have been directed to cater for urban transportation problems as they gear in the course of normal socio-economic developments,

Here in our cities, the reverse has always turn out to be the case, since second war and after Nigeria Independence in 1960, her transportation policy for a standard system of transportation planning and management has been kept carpet awaiting implementation.

Since 1960, every successive government in the federation has shown appreciable concern for transport planning and development (Oyesiku O.O. (2002). This concern is reflected in the share transport sector out of the total planned public investment. As noted by Ogbazi J.O (1992). The transport sector has consumed, on the average 20.3% of the total planned national resource outlay since the first national development plan (1962-1968). This according to him means that about 20 kobo of every naira in the planned expenditure for the cities of Nigeria development effort since 1962 had been allocated to the transport sector. Even though there had been a significant confronted with many problems which include among others, inadequate planning, lack of inter modal co-ordination, insufficient public transport as well as effective traffic management to cope with the rising demand of urban traffic congestion and accident etc.

Also, the handicap of storage traffic congestion data by our federal and state ministry of works and Transport as well as other agencies has not helped the issue. This has been reflected by the nature, quality and number of transport facilities provided by the federal, state and local Governments in the country. The negative effect has most reflected in most of urban centre and metropolis areas.

In Garki residential Enugu, the provision of traffic facilities is not subjected to a broad planning statistical data. These substandard and inadequate traffic facilities made available in the study.

Statement of the Research Problem

Traffic management is concerned with the management of traffic in other to ensure a free flow of traffic in an urban area.

Garki residential is encountering so many major traffic problems on their roads. On Garki/Agbani road, they often experience traffic problems around the Garki axis. These problems are as follows:

- Delays, which may result in late arrival for employment, meetings and education resulting in lost business, disciplinary action or other personal loses.
- Inability to forecast travel time accurately leading to drivers allocating more time to travel out in case and less time on productive activities.

- ❖ Wasted fuel increasing air pollution and carbon dioxide emissions owning to increased idling acceleration and braking
- ❖ Wear and tear on vehicles as a result of idling in traffic and frequent acceleration and braking leading to more frequent repairs and replacements
- ❖ Stressed and frustrated motorists, encouraging road rage and reduced health of motorists
- ❖ Emergencies: Blocked traffic may interfere with the passage of emergency vehicles traveling to their destinations where they are urgently needed.
- ❖ Un-street parking is another problem identified in the study area, where some motorists will not park their car well, which generate traffic.

Observation reveals that big commercial vehicles, popularly known as Gbagba in Enugu, coal city shuttle and Esut shuttle buses are the worst offenders in traffic congestions problem and have constitute a serious traffic management problem.

What might be the cause of the problems? In spite of the management machineries set up by government for purpose of controlling traffic along the road Garki residential. For everyday observations, it appears that traffic problems in Garki are intractable.

Among the management machineries put in place by government include traffic warden, federal road safety commission, etc.

It was observed that in spite the management machineries put in place by government, traffic management problem still persist in Garki area, therefore there is urgent need to study and identify the constraints of traffic management in Garki.

Objective of the study

1. To ascertain the factors responsible for the persistent traffic congestion along Garki residential and environs.

2. To verify if there was any management strategies (if any) put in place.

Research question

- What are the factors responsible for the persistent traffic congestion along Garki area?
- What are the traffic management measure require to improve traffic and to ensure Effective management of traffic in Garki residential

Research hypothesis

H_0 The increases in population and car ownership have no significant effects on traffic congestion in Garki residential area of Enugu.

Research Methodology

Research Design

Descriptive survey design was adopted for the study

Survey Research

The survey research involves field reconnaissance visits and administration of well-structured questionnaire. Initially a map of Garki were acquired from the Enugu State Ministry of Lands and Survey as well as the Department of town Planning. A number of visits were undertaken to update the map by adding new structures and removing non existing structures and information. Once a credible base map has be prepared, two reconnaissance visits were undertaken to identify and indicate the boundaries of the various districts in Garki and establish the urbanization stages of the town. This information is necessary and essentially for the delimitation and delineation the four zones proposed for the social survey.

Population

The 1991 Nigeria census puts the population of Garki 2,924. This population was projected to 1996 to get 3,388 and 2001 to get 3,929 with 464 increases within 5yrs. The table below shows population interval of Garki.

Table 1.0

Male	Female	1991	1996	2011
1,232	1,692	2,924	3,388	3,929

Source: National Population Commission 1991.

The base year figure was projected to 2011 as represented in the table 2.0 using the formula:

Px= population of the target year

r/100=population of base year

r/100=growth rate(3.0%)

n=number of years

l=constant

The projected population for 2006 and 2011 are presented below

Table 2.0 projected population of Garki 2001-2006 and 2006-2011

s/n	Year	Population
1	2006	4554
2	2011	5,280

Source: Researcher's field survey, 2015

From the above table it could be observed that the based population (2006) was 4,554 while target year population is 5,280.

Types and Sources of Data

In the course of the study and also to accomplish the aims and objectives of the study, various methods were used in the process of data acquisition. Data that is used for the work is collected from two (2) major sources which are:

— Primary sources
— Secondary sources

Primary Sources of Data

Structured questionnaire were used to obtain the behavior, opinion while interview instrument was adopted to establish personal verbal communication between the researcher and respondents. Field observation was equally employed.

Secondary Sources of Data

The secondary data is obtained from relevant textbooks, reputable journals, conference and seminar papers, relevant maps, internet and dissertation/thesis, other areas where this data were derived include the department of works and housing at Enugu south Local Government Council, Library which were repository of information were also the researcher's source of secondary data for the study and also the Population Census Board were visited for secondary data

Population and Determination of Sample Size

The total Population surveyed was made up of three strata. Since the total population of Garki area is inhabited by 5,280 (Estimated Population Census of 2011) people unevenly distributed amongst neighourhoods equal number of the respondents were identified and sampled in Ebonyi paint road, Agbani road, Amagu Ugwu road, Amodu road, Amaechi road and Ezegbosi Street. The complete survey at the entire units of analysis (Total inhabitants of

Garki residential area) would be strenuous as well as ambiguous for the scope of the research. Hence, using the Yamane formula, a sample size of 400 respondents was derived from a study population 5,280 persons. However, the stratified sampling Technique was applied spreading over the five neighourhoods.

Method of Data Collection (Instrument)

Three sets of questionnaire were used for this survey. The first questionnaire, PART A was administered on the socio-economic and demographic information of respondents, while PART B was administered on road management while the PART C covers the road users. In addition to the questionnaire, other methods were used to obtain information; these are recognizance survey so as to know the problem in Garki residential area and to be familiar with the study area. Also oral interview is conducted in the study area.

Validity of the Instrument

In other to ensure relevant question and to reach meaningful conclusion, the research instrument was subjected to meaningful validation through several criticism and amendment. The structured questionnaire was submitted to some experts in the department of Urban and Regional Planning, Enugu state university of science and Technology for their contributions. The final copies after thorough scrutiny were produced and sent to the field for administration.

Reliability of the Instrument

For concrete content and validity to be ensured, the questionnaires were pre-tested on twenty respondents in the study area. These were retrieved and revalidated by the researcher for final approval.

Method of Administration of Instrument

The questionnaires were administered to respondents in the study area. All the questionnaires were administered by hand; none is administered by post or by any electronic device. However, the researcher and his assistant went personally to the study area to administer the questionnaires. All completed questionnaires were retrieved at the spot by the researcher and his assistant. All instructions regarding how the respondents answered the questions were in very simple and clear terms.

RESULTS

Test of Hypotheses

H_1 = the increases in population and car ownership have no significant effects on traffic congestion in Garki residential area of Enugu.

Refer to the table below: Increases in car ownership

Option	Respondent	Percentage
Yes	180	51.4
No	120	34.3
No option	50	14.3
Total	350	100

Sources Researcher's Field survey, 2015

Hypothesis One

Using chi-square statistical test method

Computation of calculated

Option	O	E	$(0-E)^2$	£$(0-E)^2/2$
Yes	180	116.7	4006.9	34.3
No	120	116.7	10.89	0.0
No option	50	116.7	4448.9	38.0
Total	350	350	8466.69	72.3

Sources Researcher's Field survey.2015

Calculated value=72.3

Table value= 9.210

- Comparing the test

Decision

Since calculate value is greater than table value

Ho is rejected while Hi is accepted. Thus; this implies that the increases in car ownership have significantly affected the smooth traffic in Garki residential area.

Summary of Major Finding

The following are the findings

- Private car ownership among the household in the study area is at high rate, at 45% of the households own one to three cars. Based on the mean aggregate rate of car ownership found approximately was one car per persons of the household.
- The high rate of demand for public transport by the residents favoured cars and motorcycles. Also the cars and motorcycles consist of very low carrying capacity of such single car used for one trip instead of been made by a bus that will convey reasonable amount of people. This has a negative impact on the daily volume of traffic on Garki/Agbani road, Garki/Amaechi road, Ebony paint road and Amagu Ugwu road.
- There are 60% of the Garki residents who go to the CBDs for daily economic and administrative activities. While most pass through Garki/Agbani road, and Garki Amaechi road to their place of economic activities located in other communities of Enugu south Local Government area. Theses set of people consist of private owned vehicles.
- The mini bus was the major selected means of transport for intra-city movement by workers, students, elderly and that of the entire low class of the area.
- There exist few big buses (coal city shuttle) for intra city movement. This is the cheapest mode of transport opportunities benefit which the resident has been denied due to its shortage on the road.

Hence, even the available ones, they are difficult to get.

The shortage of the big buses (which has the highest carrying capacity) in the transportation system of the area has been responsible for the large volume and congestion within Garki and its environs. Also, cars and mini buses became dominant in the movement of people and goods.

In terms of the traffic volume, there is a very high volume of traffic on Agbani road related to on street parking of vehicles. It was discovered that at peak hour traffic about 361 to 400 vehicle. Could be found on the road from Amagu Ugwu junction down to Ebony paint junction by Army gate. Also other distributes streets like Ebony paint road, Amagu Ugwu road, Amaechi/Garki road etc.

Planning implication of findings

The major planning implications include the following:

(Pressure, delay and existing shortage of road networks, vehicles and terminate) of the Garki area. This transportation system made it difficult to handle the visitors of the area.

The condition has the following manifestations.

- Restrain development of industries with other important economic activities would not locate in such a frustrated environment were the transportation of goods not efficient.
- The improper management of other infrastructures
- Environmental population due to the concentration of vehicular traffic, which occurs within the area.

Discussion of findings

Traffic problems at Garki Residential Enugu

The various source of traffic problem at Garki can be seen in many ways: these include nature of the road, traffic congestion, indiscriminate parking, narrowness of the road, over commercialization, driver's carelessness and accident. Theses traffic problems shown 120(34.3%) account indiscriminate parking of vehicle, 100(28.6%) is a narrowness of the road, 70(20%) is traffic congestion,. 20(7%) is driver carelessness while 40(11.4%) is over commercialization. While the indiscipline of road user, accounted for 57.1% of total frequency obtained (200), bad road 80(22.9%) while increase in car ownership accounted for 70(20%) which show the level of literacy of the road users. While increase in car ownership is 180(51.4%) of the respondents answer yes, 120(34.3%) respond No, while 50(14.3%) respond no option. While the effects of the problem in Garki residential roads. Delay is the highest effects that have 200(57.7%) high transportation cost 50(14.3%) while accident is 100(28.60%).

Recommendation

Research study goes further to make recommendation base on the finding identify during this research with regards to the needs to provide an effective traffic management measure in Garki residential area. The following recommendations were classified into traffic control wardens, electronic traffic control mechanism, car park and other Land users;

- Effective and efficient traffic management measure in the study area: government should ensure that adequate traffic management personnel are put in place in other to regulate the traffic flow in the area for instance at Amagu Ugwu junction by UBA, there should be a traffic warden placed in that point also at Ebony paint junction by Army gate, there should be a traffic control warden or traffic control light in other to ease chaos are confusion in the junction.
- Car parks: the method in which cars are loafed in Garki area is not encouraging, some of the buses don't make use of their parks instead they park on the road side which causes traffic congestion and chaos on the road. In this case government should ensure that motorist make use of their parks and also provide more parks for some buses that don't have parks. The existing park is not adequate. The researcher recommends that the park should locate along Ebony paint road in other to decongest the traffic along Garki/Agbani road.

Proposal

Based on the findings there are two alternative proposals that could serve as option to ensure effective traffic management in the study.

Renovation Approach Alternatives A: Renovation approach in the sense that the researchers finds out that the existing management machineries putted in place are not functional and effective and needs to be improved and renovated in other to ensure free traffic flow in the study area.

The researcher recommends that government should provide more traffic control machinery in the study area, especially on Garki/Agbani road. Machineries such as road safety personnel, traffic control signals and the traffic control wardens in the area should be changing from time to time because when they became used to those mini-bus driver, it affects their working efficiency.

There should be a strict sanction to any defaulter of traffic management rules; this is to ensure effective movement of vehicles in the area. On street parking should not be encouraged, therefore all the vehicles that stop and carry passenger on the road should be a stipulated punishment for any defaulter of the law.

Alternative B (Rehabilitation Approach)

This approach is to restore the traffic flow in the study area. This involves the education of the road users; since data collected shows that greater percentage of road users are not educated because of their illiteracy level, they drive carelessly on the road and pick passengers anyhow, this in most time result to chaos and traffic congestion on the carriage way. Therefore there should be an initiative where road user will pass through some training on how to use the road before a driving license can be issued to the person.

Implementation constraints

Naturally, the implementation of any project is bound to meet with some constraints. In view of this programme, three major classes of constraints are anticipated. They include socio-culture, economic and political constraint

- Socio-culture constraints: the study area, especially the neighboring village, still has low level of literacy; hence a large proportion of the residents and property owners may be ignorant of the need for the improvement of the transportation facilities thus, they may resist the implementation of some provisions of the plan as they affect their communities based on the fear that such may disrupt their culture attributes, intensive public awareness programme can adequately handle this problem.
- Economic constraints: The prevalent down turn of the economy makes it difficult for government to single handlings embarks on projects requiring high prove commitment like this. It may equally prove difficult to get individuals, corporate bodies, financial institutions and NGOs. They may not be willing to commit resources for fear of misappropriate of fund that characterized most developmental project in Nigeria. This will result to the plan not being implemented according to the phasing schedule.
- Political constraints: since planning operates in political environment there is every possibility that political forces might try to affect or alter the proposal of this programme. Such alternative is bound to affect the actualization of the goal of the exercise. Therefore, government should guide against all form of political maneuvering against this programme. This could be achieved by giving the implementation commission a free hand in carrying out its duty.

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