A Geographical Study of Passenger Movement from Zuba Motor Terminal, Nigeria

U. F. Isa[1], M. A Liman[2], M. U. Mohammed[3], O. S. Mathew[4]

[1, 2, 3] Department of Geography, Bayero University, Kano,
[4]Nigerian Institute of Transport Technology, Zaria,
NIGERIA.

[1] isafaruq@gmail.com

ABSTRACT

This paper examines the nature and pattern of passenger movement from Zuba Motor Park to various towns in Nigeria. Questionnaires were administered to both passengers and drivers on the problems of interurban transport. Information on passenger flow was collected from the passengers register book at the motor park. Data on population and distances of destination towns were gotten from NPC's website and Google earth-software respectively. Statistical Package of Social Sciences (SPSS) was used to compute the multiple linear regressions of flow (as dependent) and population and distance (as independents) variables. The findings revealed that most of the passengers are males and majority of them are either civil servants or traders by occupation, thus works or businesses account for most of the reasons for travelling. All the drivers are males, mostly married and majority fall within the age bracket of 20-30 years. However a great majority of them do not own the vehicle they use but were employed by vehicle owners, and their relationship with other road officials was fairly good, the major problem of interurban transport from the view of the passengers is, drivers careless driving or over speeding, and bad roads, while from the view of the drivers, their major problems are bad roads and harassment by law enforcement agencies working on the roads. Kaduna state had the highest passenger flow followed by Kano and Lagos. Kebbi, Zamfara and Kwara have the lowest passenger flow. The population is a positive and significantly related to flow while distance is negative related to flow. The two independent variables explained 61% variation in flow, signifying that there are other variables in effect. Recommendations were also stipulated as corrective measures to the smooth and convenient intercity passenger traffic flow.

Keywords: Geographic, passenger, motor pack, traffic flow

INTRODUCTION

Transport is described as the cornerstone of civilization. As the society and economic organizations become complex, the relevance of transport grows, demand for transport is a derived one, because it depends on the demand for the commodities carried or the benefit of personal travel and each travel is unique in time and space. Thus, the demand for transport services increases with the extension of the input-output relationships of an economy (Oni, 2004)**.** The key concepts in today's world-economy derive their very existence because of the physical and electronic linkages developed by the technology. There would be neither a world market, nor globalization or liberalization without the existence of reliable and robust means of transportation. In today's competitive market, the prices are dictated to a large extent by the elements of logistics, e.g. packaging, warehousing and handling at the transportation terminals. Transport develops distance markets, reduces the physical separation of different countries, and augments international trade. It accelerates the growth and distribution of wealth; the networks of transport routes are a must for every country, the denser the network, the more is the economic progress.

ISSN: 2223-9944, e ISSN: 2223-9553

The field of transport has several aspects: which include a triad of infrastructure, vehicles, and operations. Infrastructure includes the transport networks (roads, railways, airways, canals, pipelines, etc.) that are used, as well as the nodes or terminals (such as airports, railway stations, bus stops, motor parks). The vehicles generally ride on the networks, such as automobiles, trains, airplanes and ships, the operations deal with the control of the system, such as traffic signals and ramp meters, railroad switches, air traffic control, etc (Jean-Paul et al, 2006).

All spatial flows, with the exception of personal vehicular and pedestrian trips, involve movements between terminals (Claude et al, 2006). With these two exceptions, all transport modes require assembly and distribution of their traffic, both passenger and freight. For example, passengers have to go to bus terminals and airports first in order to reach their final destinations, and freight has to be consolidated at a port or a rail yard before onward shipment. Terminals are, therefore, essential links in transportation chains (Jean-Paul, 2006).

A transport terminal is composed of a set of intermodal infrastructures taking advantage of a geographical location, conferring a higher level of accessibility to local, regional and global markets. Depending on the mode being considered, terminals are bound to various degrees to the site. Jean-Paul et al (2006) observed that terminals fulfill three general roles within transport systems. These are the connectivity within the network, interface between the transport modes and buffers between the different capacity and frequency of transport mode they served.

The gravity model is commonly used in explaining spatial interaction. Thus trips from one place to the other can be explained by the model. The model states that the flow or interaction between two places is directly proportional to the product of their populations and inversely proportional to their distance apart. The model is frequently used for the analysis of spatial interaction and for forecasting the quantity of movement between a set of origins and destination.

Thus, the quantity of flow is a product of a generation factor for zone (i) and an attraction factor for zone (j). And a factor representing the effect of the separation between zone (i) and (j). The separation is usually in terms of journey times. The forms of the gravity model considered can be represented as follows;

$$Fij = KPiPj/dij^2 \text{---------- (i)}$$

Where Fij = Expected interation or flow between (1) and (2)

PiPj = Total population or size of place (1) and (2)

dij = Distance between (i) and (j)

K = Calibration constant

E = Exponential value

When Fij = KPiPj/ij is linearised, we have

$$InFij/PiPj=InK-eIndij \text{---------- (ii)}$$

Where Ink is the intercept and e the slope

The empirical application of the gravity model has demonstrated that movement tends to decline with distance raised to a power. Rather than with distance weighted or multiplied by a constant (n), thus the modified gravity model may be expressed as:

ISSN: 2223-9944, e ISSN: 2223-9553

Also when fij = K $(PiPj)^2/dij^2$ is linearised it will be:

InFij Ink + eIn (PiPi) – eIndij ---------- (iii)

Therefore, it is expected that population of towns (mass) and distance from Zuba impedance factor) will influence flow of passenger from Zaria. The population parameter is expected to have a positive (+) sign, while the distance has a negative (-) sign.

No transport organization can operate profitably unless there is a demand for its services and the estimation of expected future demands is a key element in planning transport operations. In this age too where there is competition, it is appropriate to carry out demand analysis of an organization's level of services. Transport is a service rarely in demand for its own characteristics. Demand for public transport, road freight facilities or airline services are usually derived from some other functions (Cole, 1998). The demand level for transport is related directly to the demand level for the product or service. It is therefore essential for a transport organization to establish a demand pattern for its services.

Studies have been carried out on both passenger flow pattern and service efficiency of road terminals (motor parks) in international and local levels. Some of the studies include modeling of Inter-Urban Road Passenger Traffic in Niger State Nigeria by Wole (2003) where He hypothesized that the degree of spatial interaction between Minna and other towns as measured by the volume of road passenger traffic is a function of age of the travelers, mean annual trip frequency, population, distance in km, cost of transport, influence of competing modes of transport (bus trips, bus frequency and rail connectively). He perfumed a regression analysis with all six variables explaining the variations in the passenger traffic. The regression analysis reverted that only three of the hypothesized eight variables were significant accounting for appreciable 72% of the variations in the traffic data. These are trip frequency, rail connectivity and bus trips. The findings suggest that social and economic factors are much more important than the traditional population and distance factors associated with gravity models.

A similar study is Passenger flow pattern learning based on trip counting in lift systems and mixing it with real-line information by Rosa et al (2009). The study concluded that passenger flow information can help to improve the estimation of the waiting times and will benefit the decisions taken in the dispatching problem. In some of their results, even using the simplest methods all over the steps of the methodology explained, and assuming the system was filling the pattern, the benefits in the average waiting time where approximately near the 10% and the increment in the car occupancy approximately 20% for the cabs at loading levels of 40% to 80%. The only measure they noticed that have suffered from all this process is the transit time; they conclude that as the lifts have to serve more people, the transit times are bigger.

Alphonsus (2009) assessed the quality of interurban bus services in Enugu city Nigeria where He attempted to find out the quality of service of mass transit bus in the 31 sampled major centres by considering three components of the level-of-service (LOS) bus services frequency, passenger waiting time and walking distance. He used a well-designed/structured questionnaire to collect data from bus users; it was found that these components varied from one centre to another, indicating variations in the quality of service of level-of-service of mass transit bus in different parts of the city of Enugu.

However, most data on the passenger flow magnitudes of various motor parks in Nigeria are outdated or do not exist at all (i.e. no research has ever been conducted). Indeed no records of such kind of research have been carried out in the study area of interest (Zuba Motor Park). Thus, this research intends to fill in the gap by assessing the pattern of passenger movement (flow) from Zuba Motor Park to various towns in Nigeria, using data generated

ISSN: 2223-9944, e ISSN: 2223-9553

from multiple-days trip counting summarized into origin and destination. This method can be used to identify periods of homogeneous flow present in the data and the reasons for it, the flow pattern will also preserve the number of passengers moving from an origin floor to a destination flow for a given time, which can help us to identify the regions (destinations) where passenger traffic magnitude is more, and where it is less, and the various reasons for each outcome.

MATERIALS AND METHODS

Data on the pattern of passenger flow were gathered through observation (i.e. multiple days trip-counting) for a period of one week (Saturday to Sunday). Two sets of questionnaire were administered, a total of 248 copies of the two questionnaires were administered to the passengers and drivers each getting 124 copies questionnaires. Information sourced using these questionnaires include; the personal data of passengers and drivers, the destinations they are traveling to, the location they came from, the various reasons for their trips, and their perception on the transport system in general. The distance between the origin floor (Motor Park) and the various destinations of passengers were measured using Google Earth software. Also, population data of the destinations were sourced from an internet web address which summarizes the 2006 population census by NPC, while the passenger flow was collected from the passenger registered in the motor park.

Flow-line map were used to present data on the movement of passengers from the origin floor (i.e. Motor Park) to the passenger destinations, this map was used to analyze the varying magnitude and direction of passenger movement. Then a regression analysis was computed using SPSS software to test for the relationship between passenger flow traffic and a combination of population and distance parameters, these two parameters of (population and distance) were considered as dependent variables of passenger flow. Then a comparison was done to see how influential they are on the magnitude of the flow. Data collected using questionnaire was presented in bar charts and tables and analyzed using frequencies and percentages.

STUDY AREA

Zuba is located on Latitude 9.0963889°, Longitude. 7.2127778° and is under the Bwari area council of FCT Abuja. With the creation of the FCT; the largest part of Zuba chiefdom fell into it. In the present Gwagawlada Area Council, only Gwagwalada central Ward and Kutunku wards (which were parts of Pai chiefdom) and Dobi ward (which was part of Izom chiefdom) are not part of Zuba chiefdom. The remaining seven (7) wards, Zuba, Ikwa, Tunga Maje, Ibwa, Gwako, Paiko, and Quarters fall within Zuba chiefdom, in addition Gui ward in Municipal and areas around Deidei were part of Zuba chiefdom, in fact the Abuja international Airport was wholly in Zuba chiefdom which was transferred to Jiwa when Gui ward became part of Municipal Area Council.

Zuba people are koro by tribe who trace their origin to the Jukuns (Kororofa) that came into Abuja area /Niger state in the 15th century. History has it to say that the Koro of Abuja Area/Niger state is divided into two groups. Zuba koros are of first Koro settlers and the Koro Nulu as the second group. The settlers call the first second settlers “Afiki” meaning people (Koros) of the north. The Koros are said to be earliest settlers in the old Abuja Area founding chiefdoms and other people came to live among them for protection.

ISSN: 2223-9944, e ISSN: 2223-9553

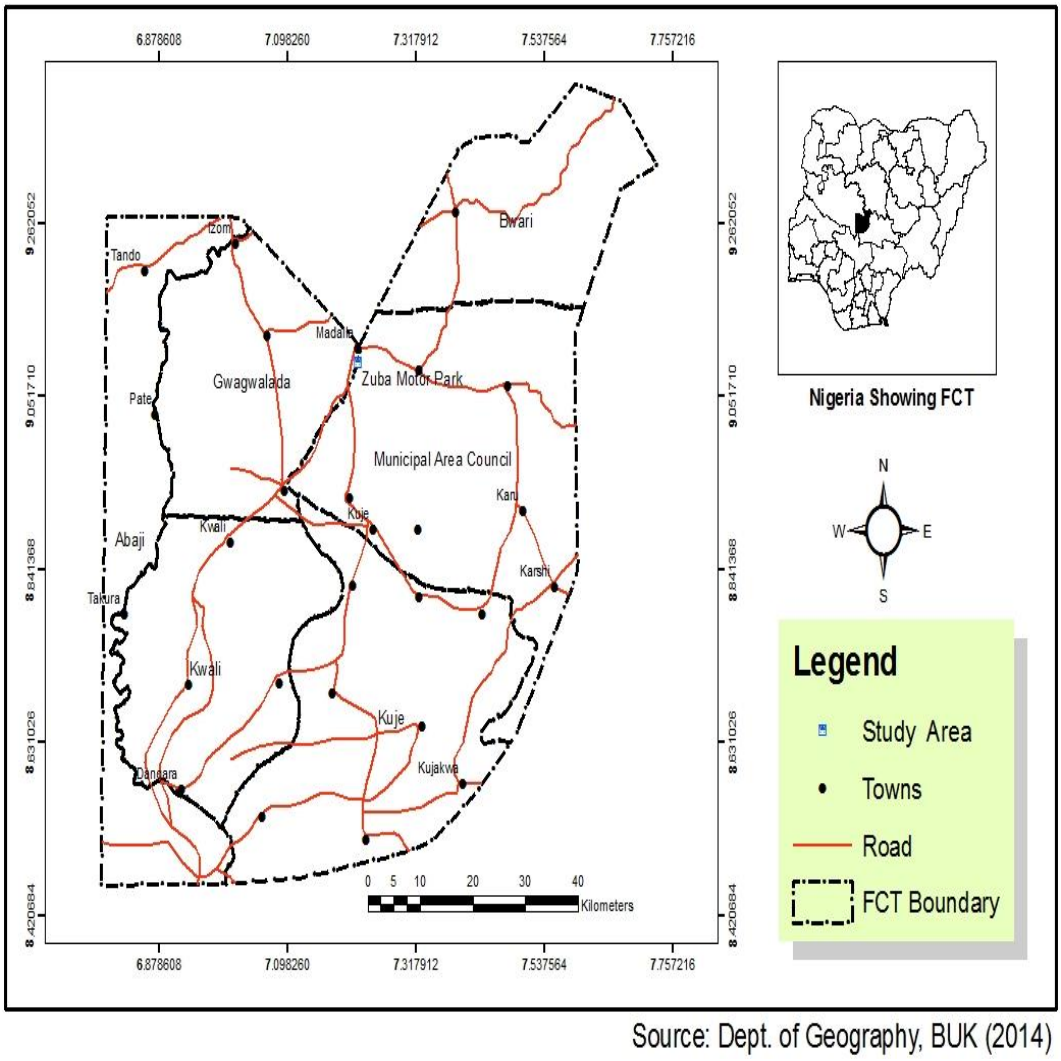

Figure 1. Federal Capital Territory (FCT) Showing Zuba Motor Park

RESULTS AND DISCUSSION

The analysis of the data collected are presented below, starting with the analysis of socio-demographic, followed by passenger flow, the analysis of drivers' personal information and their relationship with other road officials, and then passenger's personal information and their perceptions on the transport system, then finally the results of the regression analysis.

Drivers General Information

This section deals with information relating to the drivers traveling from Zuba Motor Park, these information are presented in the chats below. Almost all the respondent drivers are male, no female drivers or identify by the study.

Figure 2 shows the distribution of sampled drivers according to their age. Majority of the respondent are within the age bracket of 31-40 and 21-30. The two account for more than 65% of the respondents. Equally about one-quarter of the drivers are between the ages of 41-50. Only few of the respondents are (Less than 10%) are above fifty years. Thus, by implication majority of the respondents are youth.

ISSN: 2223-9944, e ISSN: 2223-9553

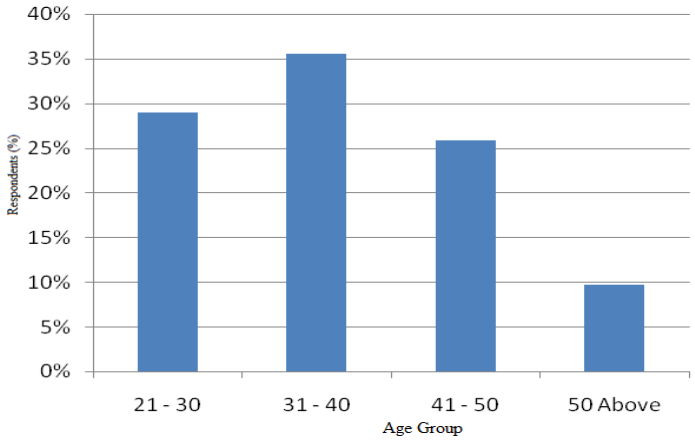

Figure 2. Drivers Age Distribution

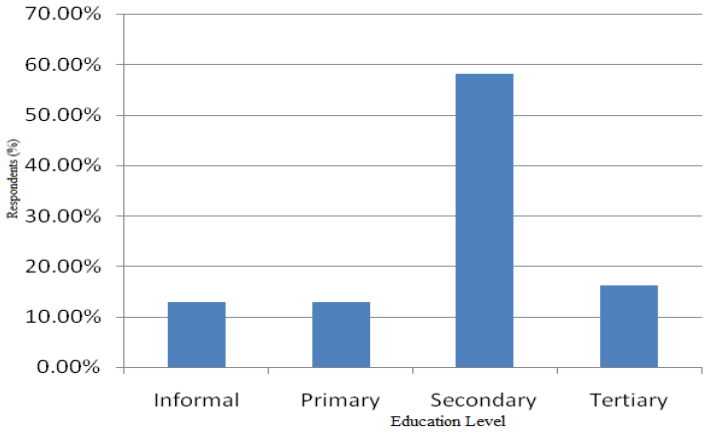

Figure 3. Drivers Education Level

More than half drivers have attain secondary school level (58.1%) followed by drivers that have attain tertiary institution level making up 16.1%. Drivers that have only attain primary and non-formal education made up 12.9%, each. This can be explained as majority of the drivers dropped out after secondary school while the 16.1% that have attain tertiary level may be unemployed graduate who couldn't find a better job.

In addition the monthly income of the driver was examined and that most of the drivers earn more than 20 thousand monthly (more than 77 %). Less than a quarter of the respondents earned 10-20 thousand naira monthly and few earn more than 50 thousand in a month. In essence most of the drivers earn more a minimum 18,000 naira minimum wage of Nigerian workers, however most of the earnings are between 21 and 30 thousand (figure 4).

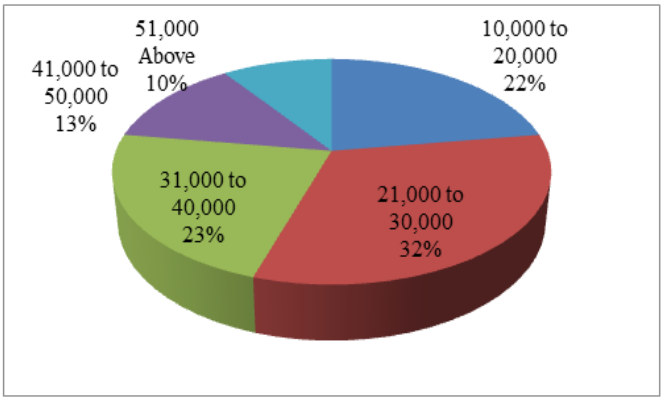

Figure 4. Average Monthly Income of Drivers

This drivers drive different type of vehicle brands. Figure 5 show the type of vehicle drivers used in the studied motor pack. The drivers using Golf vehicles made up the highest percentage (about 40%), followed by drivers who use vehicles under the category of others (mostly 8 seater citron and sharan). Significant number of the drivers (about 22%) used Toyota vehicles, Nissan users made up only 6.7%, and Peugeot users made up least 1.6%. Some of the reason while driver prepare Gulf over other vehicles were durability, and availability and affordability of the car parts.

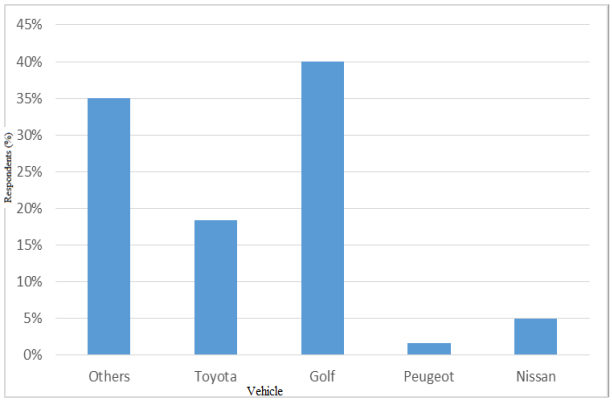

Figure 5. Type of Vehicle Used by Drivers

Direction and Magnitude of Passenger Flow

Passengers registered record was used to generate flow chart showing movement of passengers from Zuba to their various destinations within the Nigerian territory. The flowwas show in figure 6.

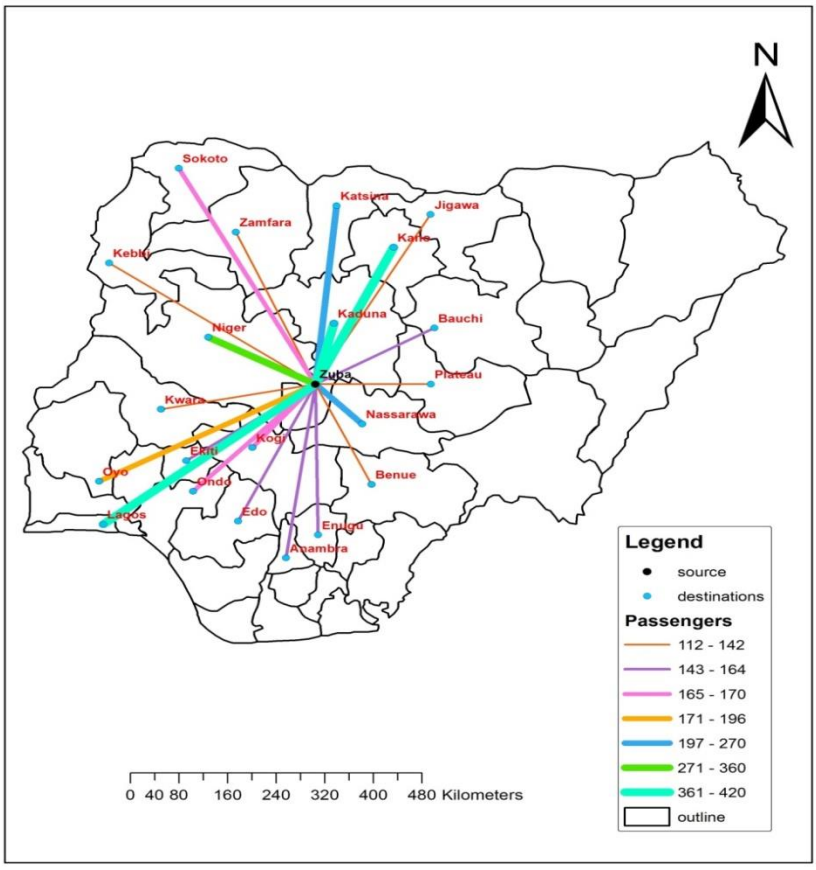

Figure 6. Magnitude and Direction of Passengers from Zuba Motor Park

ISSN: 2223-9944, e ISSN: 2223-9553
www.journals.savap.org.pk

Figure 7 shows that the passengers from Zuba travel to 21 states across nation. It is apparent that no passenger travel directly from Zuba to state in the northeast and south south except Bauchi and Edo respectively. State/towns receiving the highest magnitude of passenger flow traffic were Kaduna, Lagos and Kano receives the highest number of passenger traffic which is within the range of 361 to 420 passengers weekly, Second to Kaduna, Lagos and Kano is Niger state which falls within the range of 271 to 360 passengers weekly, followed by Nassarawa and Katsina states which falls within the range of 197 to 270 passengers weekly and were represented. Kebbi, Jigawa, Zamfara, Plateau, Benue, and Kwara all falls within the range of 112 to 142 passengers weekly, and were represented by a red-colored line of about.

The high magnitude of passenger flow seen in Kaduna cannot be unrelated to the high number of civil servants from Kaduna state working in Abuja who often pays a visit back home, Kaduna is also a state where there are several tertiary institutions ranging from universities, polytechnics, collage of educations and several other military schools, so there is a high record of students traveling back to their schools. Kano and Lagos were known to be centres of high commercial activities, so majority of passengers traveling there are for the purpose of one business/trade or another, although there are some considerable number of passengers who travel there for social visits, schools, and other personal reasons, but the major reason for their high passengers traffic is as a result of high commercial activities and population. Nassarawa and Niger state also have considerable high passenger traffic due to their closeness to the FCT, thus, there are several passengers who came from these states but works in the FCT.

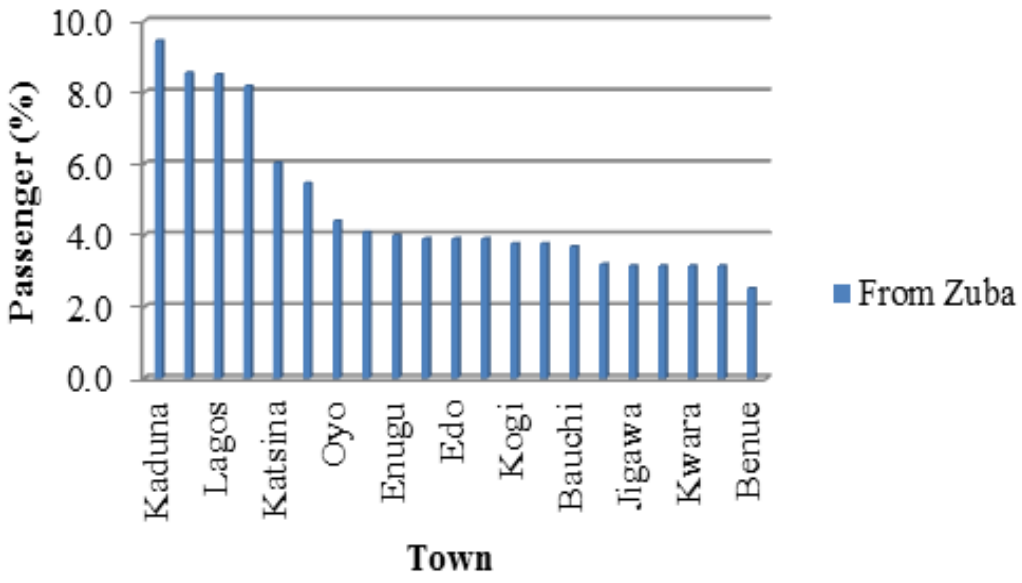

Figure 7. Passengers Magnitude from Zuba to Various Destinations

Passengers General Information

This section deals with information relating to the passengers traveling from Zuba Motor Park, these information are presented in .

ISSN: 2223-9944, e ISSN: 2223-9553

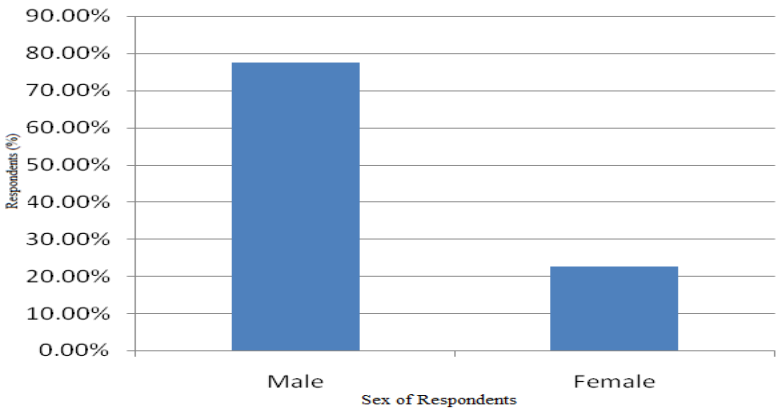

Figure 8. Passengers Sex Distribution

Figure 8 shows the distribution of sampled passengers according to their gender distribution. The male passengers made up 78% of the distribution while 22% was made up by females. This signifies the domination of male passengers over the female passengers.

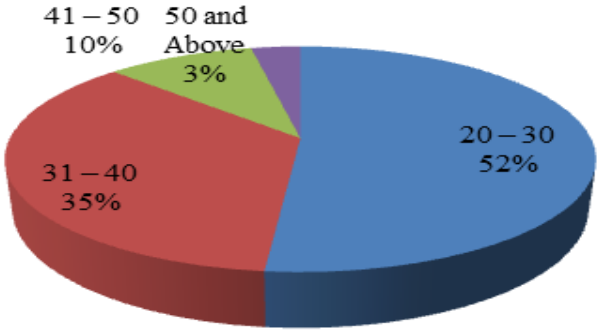

Table 9. Passengers Age Groups

Table 9 shows the distribution of sampled passengers according to their age. The table shows that passengers in the category of 20-30 years made up 52% of the distribution, while those within 31-40 made up 35.6% and those within 41-50 make up about 9.4% and lastly the category of 50 and above made up the remaining 3% of the distribution. From above we can conclude that passengers' within the category of 20-30 made up the highest percentage followed by those within 31-40, then 41-50 followed suit and lastly 50 and above made up the lowest percentage of the sampled distribution.

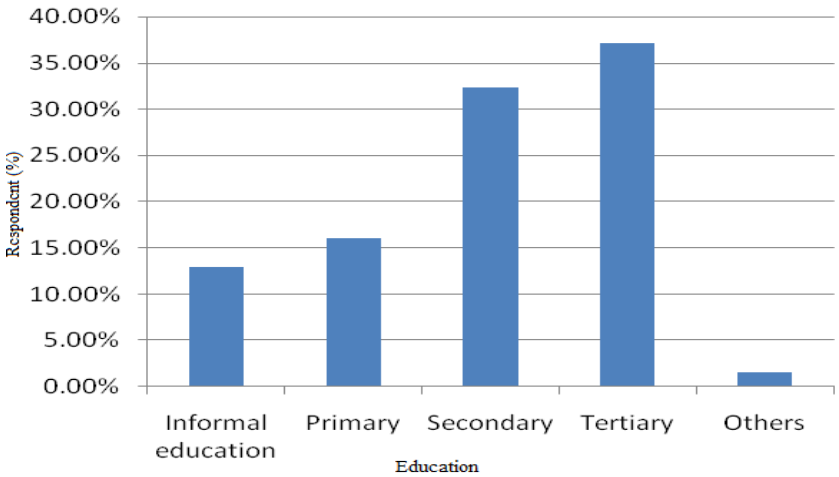

Figure 10. Passengers Education Status

ISSN: 2223-9944, e ISSN: 2223-9553
www.journals.savap.org.pk

The above chart shows the distribution of sampled passengers according to their educational levels. The chart shows that the most passengers have attain tertiary institutions, making up 37.0% of the total responses, followed suit by passengers that have attain secondary school level making up 32.0%, then passengers that have only attain primary school level made up 16.0%, others with informal education made up 14% and lastly the remaining 1% made up passengers with other forms of education qualification education.

From the result majority of the passengers travel for business and work reasons, the two account for more than 86% of the travel. This corroborates most the findings (like Awoyemi, 2012) that show that business/trade is the major reason why passenger travels in Nigeria. Few of the passengers travel for schooling and other motives.

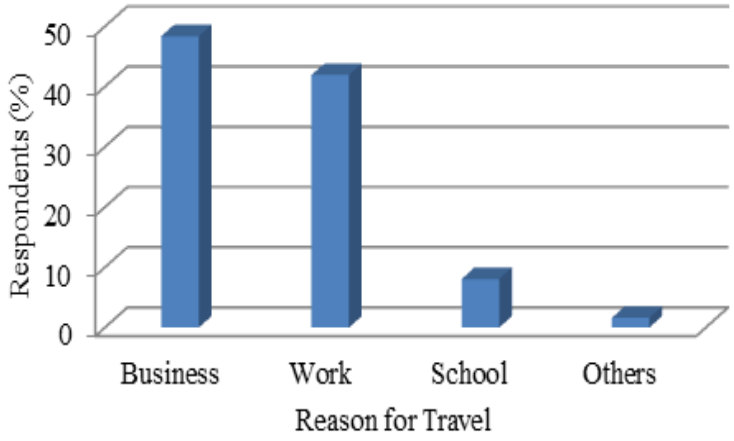

Figure 11. Passengers Reason for Travel

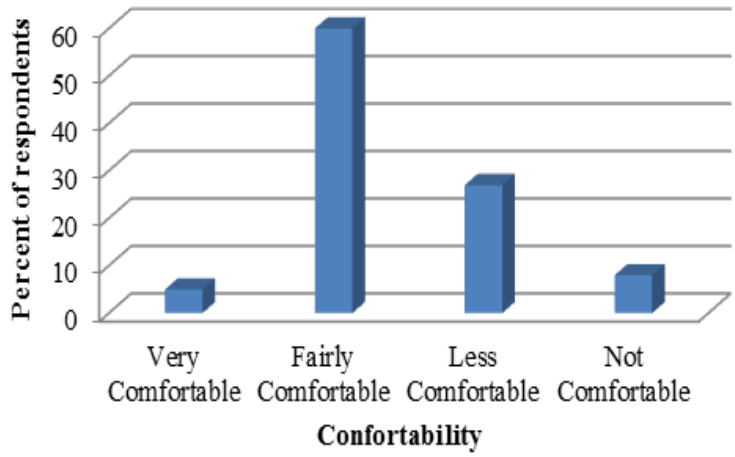

Figure 12. Passenger's Comfort

Figure 12 shows the distribution of sampled passengers according to their level of comfort on the mode of transport. Most of the passenger (60%) believed that the transport in fairly comfortable. Also quite numbers of the respondents were of the opinion that the transport is less comfortable. Very few of the passengers (5%) believed that the transport is very comfortable and only slightly higher than this (about 8%) believed that the transport is not comfortable. In essence the road transport in Nigeria is predominantly less to fairly comfortable but the passengers patronize because the major motive for the choice is fastness which constitute (that constitute 51%).

ISSN: 2223-9944, e ISSN: 2223-9553

Relationships between Flow, Population and Distance

The movement of passengers and freight (flow) can be explaining by a number of factors. Among the factors are the population and distance. This based on the gravity model that stated that as the distance and population change the magnitude of interaction changes inversely and directly. Thus the linear regression models where used to predict the passengers flow on the basis of distance and population. The results of the analysis shows that a combination of population and distance (independents) explained 61% variation in passengers flow, having R^2 of 0.6104 and p=0.0002 which shows that the relationship is significant at both 95% and 99%. The slope of the regression line is 61.78 and the coefficient of the population and distance are 0.00038 and and -0.381 respectively. Thus the relationship between population and flow is direct more significant having small intercept and $p<0.05$. On the other hand the relationship between distance and flow is negative and insignificant having large intercept and $p>0.05$.

Therefore the variation in flow follow the gravity model and 61% of the variation is account by two geographic factors (population and distance). The remaining 39% can be explained by other factors.

CONCLUSION AND RECOMMENDATION

The findings revealed that about 77% of passengers and drivers are males by gender and majority of them are either civil servants or traders by occupation, and their reasons for traveling were mostly for trade (business) and works. While it is apparent that all the drivers are males, mostly married and majority of them fall within the age bracket of (31 - 40) years. Kaduna state has the highest passenger flow, followed by Kano, then Lagos, while Kebbi, Zamfara and Kwara have the lowest passenger flow traffic. The regression showed that population is major determinant of flow and the combination of distance and population explained up to 61% change in flow.

On the basis of the findings, the following recommendations were made:

That the comfort of Nigerian roads is very low and this can largely be amended by road construction, proper maintenance and rehabilitation and most fastness is seen as the priority of the choice of travel mode as such reckless driving become the order the day. Therefore, there is a need to enforce laws for speed limit so as to save the lives of Nigerian populace.

REFERENCES

[1] Alphonsus N. A, (2010). *An assessment of the quality of intra-urban bus services in the city of Enugu, Enugu state,* University of Nigeria Nsukka, Department of Geography Nigeria.

[2] Armstrong-Wright, A. (1993). *Public Transport in Third World Cities* (1st Edition). London: HMSO.

[3] Abler, R., Adams, J., & Gould, P. (1971). Spatial organization. Englewood Cliffs, N Arizona crash report by police (records section 064)

[4] Agunloye O. O. (2008). *Assessment of Rail Transport Services in Lagos metropolis.* An unpublished M.Sc. Thesis. University of Lagos. Akoka-Yaba, Lagos.

[5] Adesanya, A. O., & Adeniji, S. A. (1998). *Sustaining urban public transport in Nigeria: critical issues and remedies.* In Freeman & Jamet (eds.). *Urban Transport Policy* (pp. 775-781). Rotterdam: Balkema.

[6] Buchannan, A. F. (1969). *Traffic in Town*. London: H.M.S.O.

ISSN: 2223-9944, e ISSN: 2223-9553

[7] Cole, S. (1998). *Applied Transport Economics.* London: Kegan Page Ltd.

[8] Evans, J. E. (2004). Chapter 9: *Transit scheduling and frequency. TCRP report 95: Traveller Response to Transportation System Changes*. Washington D.C.: Transportation Research Board.

[9] Fruin, J. J., (1985). Passenger Information Systems for Transit Transfer Facilities. Retrieved October 13, 2012, from www.getcited.org

[10] Filani, M. O. (2000). Air Traffic Forecasting: An input Technique Approach. *Regional Studies, 7,* 331-338.

[11] Garschhammer et al. (2001). Towards generic Service Management Concepts a Service Model Based Approach. *7th IEEE/IFIP International Symposium on Integrated Network Management (IM 2001), Seattle*.

[12] Hauser D. P. (1974) 'Some Problems in the use of Stepwise Regression Technique Geographical research. *Canadian Geographical, 55,* 140-160.

[13] Iseki, H., Ringler, A., Taylor, B. D., Miller, M., & Smart, M. (2007). Evaluating Transit Stops and Stations from the Perspective of Transit Users.

[14] Lyndon, H., & Todd, A. L. (2006). *Evaluating New Start Transit Program Performance Comparing Rail and Bus*. Victoria Transport Policy Institute Canada.

[15] Johnstor, R. J (1973). On the Friction of distance and regression Coefficient. *Area 5*(3), 185-192.

[16] Rodrigue, J., Comtois, C., & Slack, B. (2006). *The Geography of Transport Systems*. London & New York: Routledge, Taylor & Francis Group.

[17] David, A., Mfinanga, Meshack, O. A., & Ochieng (2006). Development of a Model for Assessing Urban Public Transport Level of Service in Cities of Developing Nations. *African Journal of Science and Technology (AJST) Science and Engineering series, 7*(2), 35-53.

[18] Offiong, V. E. Awoyemi, O. K., Maduka, F. O., Ewa, E. E., & Onogbosele, C. I (2013). An assessment of touting activities in selected urban motor parks in Ibadan Metropolis.

[19] Adedayo, O. F., & Zubairu, S. N. (2013). *An Assessment of Facilities in Motor Parks in Minna, Niger State, Nigeria, Through Post-Occupancy Evaluation*. Department of Architecture, Federal University of Technology, Minna, Niger State, Nigeria

[20] Ogbazi, J. U. (1992). *Urban Transportation Planning. Principle and Practice of Urban and Regional Planning in Nigeria* (pp. 64-72). Mekslink Publishers Nigeria, Awka.

[21] Oni, S. I. (2004). *Development of Urban Transportation in Perspectives on Urban Transportation in Nigeria edited by Vandu-Chikolo* (pp. 53-69). Published by the Nigerian Institute of Transport Technology (NIIT), Zaria.

[22] Onokala, P. C. (2001). Urbanization and Urban Transportaion Problems in Nigeria, in E. O. Ezeani and N. N. Elekwa (eds) Issues in Urbanization and Urban Administration in Nigeria Jamoe Enterprises (Nigeria) Publishers Enugu, Pp. 168-186.

ISSN: 2223-9944, e ISSN: 2223-9553

[23] Osaghe, M. (1972). Benin City motor terminals and their spheres of influence cited in Adesanya A.A., Location and Design of Inner-city Passenger Terminals: A Case of Abeokuta.

[24] Piet, R. (2010). *Perceptions of public transport travel time and their effect on choice-sets among car drivers.* Erasmus University Rotterdam.

[25] Mishalani, R. G., McCord, M. M. (2006). Passenger Wait Time Perceptions at Bus Stops: Empirical Results and Impact on Evaluating Real- Time Bus Arrival Informational. *Journal of Public Transportation, 9*(2), 89-106.

[26] Rosa, B., Maite, B., Richard, P., & Stefan, K. (2012). "Origin Destination matrix estimation and prediction in vertical transportation". *Symposium on Lift and Escalator Technology*.

[27] Sayer R. A. (1977). Gravity Models and spatial Autocorrelation or Atrophy in Urban and Regional Model. *Area*, *9*(3), 377-402.

[28] Solarin A. M. (2000). *An Appraisal of Rail Transport and Its Effect on Freight Mass Transit in Nigeria.* M. Sc. Thesis, Unpublished Ago-Iwoye, Centre for Transport studies Ogun-State University, Nigeria

[29] O'Sulivan, P. (1970). Variations in Distance Friction in Great Britain. *Area 2*, 30-39.

[30] Titus, S. I., Andrew, E. D., & Mynepalli, K. C. S. (2010). Refuse disposal practices in three major motor parks in Ibadan municipality, Nigeria. *Journal of Public Health and Epidemiology*, *2*(4), 82-86

[31] Vaira, G., & Irina, Y. (2003). *Quality Management of the Passenger Terminal Services on the Base of Information System.* Transport and Telecommunication Institute, Latvia

[32] Morenikeji, W. (2003). Modeling inter-urban road passenger traffic in Niger State. http://dspace.futminna.edu.ng/jspui/handle/1/4253

ISSN: 2223-9944, e ISSN: 2223-9553