The Challenges of Urban Road Transport System in Asaba Metropolis, Nigeria.

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Abstract

This study examined the challenges of urban road transport system in Asaba Metropolis, Nigeria. The study used primary and secondary sources of data. The findings of the study revealed that unplanned cities, poor discipline and archaic management system were causes of poor traffic management in Asaba Metropolis in Nigeria. The findings of the study also revealed that increasing urban population and level of motorization has necessitated the need for parking design to curb competition for space, manage transport supply and demand to manage traffic congestion. The study's findings revealed absence of road signage, traffic signal lights and inadequate enforcement of traffic laws as common challenges of urban transport system in Asaba Metropolis. Based on the findings, the study concluded that poor design of road infrastructure was among the major causes of traffic congestion and accidents in Asaba metropolis. Based on the findings, the study recommended the need for adequate provision of on-street and off-street parking facilities, construction of bus lay-bys, median barriers, crash prevention at 't' or 'y' junctions, road markings and signage, installation of traffic signal lights and pedestrian bridges and crossings to cater for children, the aged and people living with disabilities in Asaba Metropolis.

Keywords: challenges, developing countries, pollution, traffic congestion and urban transport.

Introduction.

An urban centre is described as a place of economic strength, power development, innovation, modern and a point of concentration of socio-economic activities. Urban centre can easily be distinguished from rural areas based on land-use characteristics. The cities of today are very complex, made up of living, functioning and interacting parts. Transport remains a non-negotiable instrument of city development and functioning (Solanke, 2013). Since city functions and activities are spatially dispersed, they create varying demand for mobility.

Cities in developing countries have become increasingly automobile dominated and less sustainable. This is made worse with growing urban population and increasing vehicular volume. Many cities are facing mobility and accessibility problems. Most governments, in order to address this situation, have become more supply oriented and pre-occupied with building more roads to the detriment of other modes of transport system.

The demand for transport especially in cities of developing countries has been on the increase following the rapid socio-economic growth and development of these countries (Odeleye, 2018). The growth and development of cities are linked to urban transportation and the structure and capacity of its network directly affects the level of accessibility or the ease of moving from one place to another within the city (Taaffe, Gauthier & O'kelly,1996).

Ogunsanya (2002) observed that traffic congestion, inadequate urban transport facilities, poor coordination of modes, poor management of the transport sectors, inferior quality of road networks and shortage of transport equipment and furniture constituted major impediments to urban transportation. As a result of these problems, economic activities suffer serious setbacks because there is always delay in the delivery of goods and services and loss of man-hours in traffic holdups. Similarly, the problem of poor funding, lack of political will, policy inconsistencies, institutional

gridlocks, safety constraints, poor security, environmental issues, research and technology are all serious issues in urban transport development. Meanwhile, there is a skewed modal development tilted in favour of road transport system to the neglect of other modes of transportation in the urban centres. It is against this background that this study examined the challenges of urban road transport system in Asaba Metropolis, Nigeria .

Conceptual Framework

This study is anchored on the concept of urban spatial structure. Urban spatial structure is characterized by classical theories which give details of economic and human ecological pattern of land use. The movement of human beings in urban areas are due to spatial imbalances created by different urban land use types. There have been a number of models developed over the years to explain the urban spatial structure emanating from city movement and interaction. This concept was applied in the works of Ogunbodede (1999) and Raji (2013). These theories include;

i. Burgess concentric model (1925)
ii. Sector model of Hoyt (1939), and
iii. Multi-nuclei model of Harris and Ullman (1945).

Burgess Concentric Model (1925)

This is one of the earliest known classical models of urban growth known as Burgess concentric zonation hypothesis (Fig. 2). The model states that as a city grows, it expands radially around the Central Business District (CBD) to form a series of concentric circles. Burgess identified five zones with each zone characterized by different zone.

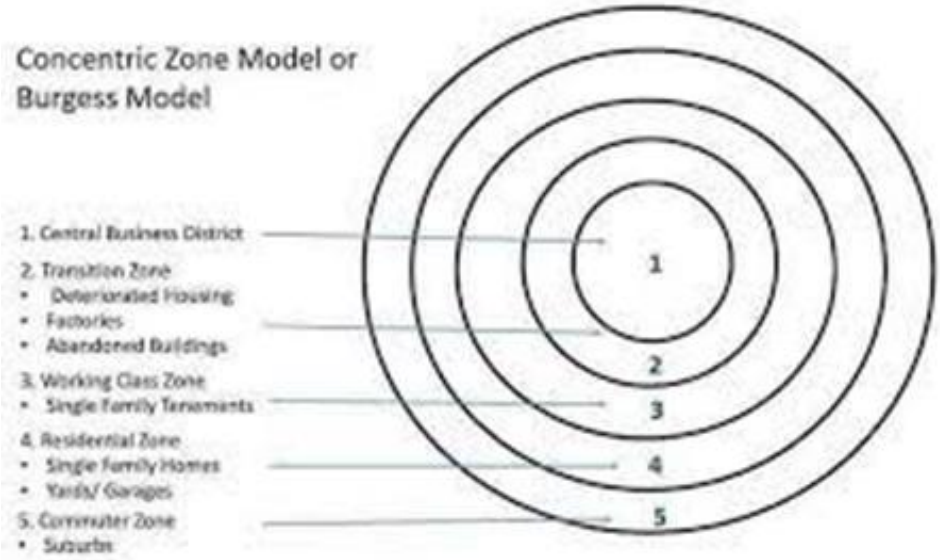
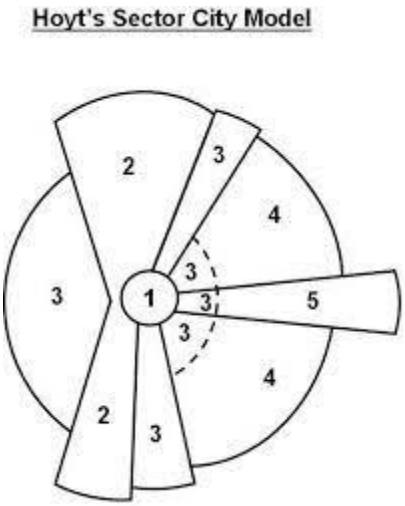


Fig 2: Burgess Concentric Theory

The first zone is the centre of the city; the second is the zone of transition, comprising an area of residential deterioration due to encroachment from the CBD. The third zone is the independent working man's home. The fourth zone is the zone of better residences. The fifth zone is the commuter's zone consisting of suburbs with men commuting to jobs in the CBD.

The Sector Theory of Hoyt (1939)

The Hoyt's model of sectoral growth pattern is an example from America. Hoyt analyzed the distribution of residential neighbourhoods of various qualities as influenced by rent levels and found that they were neither distributed randomly nor in the form of concentric circles (Fig. 3).



1 = Central Business District

2 = Light manufacturing / low class residential

3 = Manufacturing / high class residential

4 = Industrial zone

5 = commuter's zone

Fig 3: Hoyt Sector Theory

Hoyts' model can be seen as a direct response to Burgess work. Onokerhoraye and Omuta (1978) opined that Hoyts' model is essentially complementary to that of Burgess. It is a distortion of the morphology of concentric landscape of Burgess because the structure that is produced is a wedge-like pattern of sectors that developed along roads.

Multi-Nuclei Model of Harris and Ullman

The mono-nucleic assumption was a major criticism of Burgess (1925) and Hoyt (1939) and this necessitated the proposition of multiple nuclei theory by Harris and Ullman (1945) (Fig. 4).

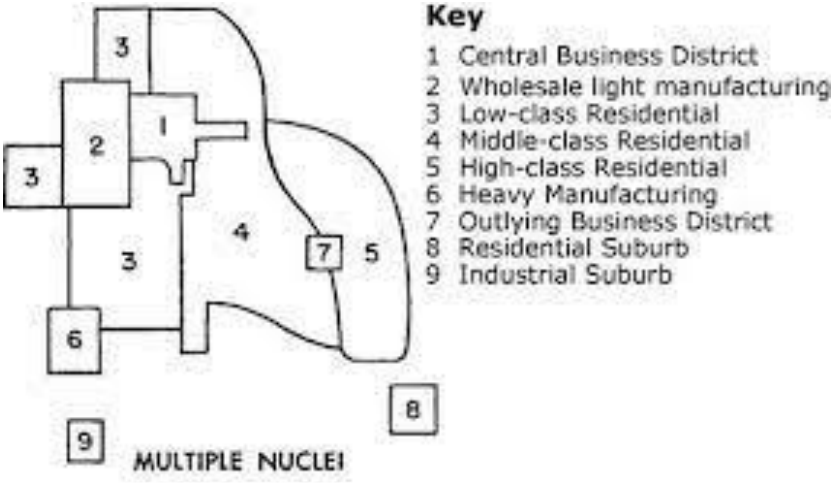


Fig 4: Multi-Nuclei Model of Harris and Ullman

The model is an amalgam of Burgess and Hoyt's models with the addition of multiple nucleus. There are many nuclei in the city which are reflections of the internal differentiation of the city in

the course of growth. Harris and Ullman identified some variables responsible for multiple nuclei structure as location of some activities to afford high rent of the most desirable sites. They posited that as the city grows, it absorbs existing nuclei while new ones are created. The number of nuclei vary from city to city but the larger the city, the more numerous and specialized are the nuclei. The functions performed by the nuclei differ from city to city because of different origins.

Theories of urban spatial structure provide basis for urban mobility in the city, and also provide explanations to location behaviour of households and groups (Aluko, 2004). These theories are important in pedestrian movement for their trip generating capability. City centres generate varying pedestrian trips within and outside residential, commercial, industrial, institutional and recreational zones due to different land use types.

Conceptual Clarifications

Parking Problems

Space in urban centres may be categorized into two namely exchange space and movement space. The exchange space is made up of residential, industrial, educational and commercial land use, while the movement space relates to spaces allocated to transportation facilities such as roads, motor parks, interchange points, walkways, pedestrian bridges and crossings, and so on.

The city centres usually account for small percentage of the total urban space yet it has the highest density of vehicular and pedestrian traffic, highest daytime population and highest concentration of offices and shops (Morenikeji, 1989). As cities expand and become economically wealthier, vehicle ownership and use grow more rapidly than the available road space, resulting in increased congestion and traffic generated air pollution. Ogunsanya (2002) posited that this challenge of mobility is not only accentuated by population growth and spatial expansion of cities, but also by the intensity of commercial and economic activities taking place in cities.

As a city's transport system expands, it takes more space. The construction of new roads, the expansion of existing roads, and the building of parking lots require the acquisition of part of the exchange space. The rationale behind planning for parking is that, most vehicles apart from those used for public transport are stationary for at least two third of a normal working day.

Parking is an important aspect of transport planning, and the three components of transportation are the vehicle, the route, and the parking facilities (Olorunfemi, 2013; Okoko, 2006). Different land use requires different amount of parking facilities. For instance, the amount of parking facilities provided is a function of intensity of land use. Commercial activities for example, are often noted for their intensity have a corresponding high demand for parking facilities in areas of concentrated commercial activities, hence commercial areas in most developing countries often experience parking problems. Ogundare (2013) opined that parking demands far outweigh the available supply in most cities in developing countries like, Nigeria, which results in roadside and illegal parking, and the ineffective regulation on parking. However, the more parking facilities provided, the greater the demand for parking (Ogunbodede, 2004). Whereas the demand for parking is always greatest at the central business district (CBD), there is a limited amount of land space within the CBD and at the same time several and varied demands for the use of this limited land space. This problem of parking has assumed a crisis situation in most towns and cities especially with increase in car ownership. On-street parking leads to loss of street space and congestion. Since it is not possible to ban on-street parking completely, there is need for policies to regulate the use of urban road space for on-street parking especially on narrow streets.

Traffic Congestion

Traffic congestion is a situation where there are more vehicles trying to use a given road facility than it can handle at a time. In most cities, traffic congestion occurs during certain times of the day called peak or rush hours. This, according to Kumaraye (2004) is due mainly to the imbalance between the demand and supply of road space.

Increased motorization has expanded the demand for parking space hence vehicles spend precious time looking for parking lots. Rodrigue (2011) attributed traffic congestion to the commuting patterns and little by truck movements. Rodrigue posited that lack of infrastructure improvement and construction capacity impairment favours the development of traffic congestion.

Traffic congestion is classified into recurrent and non-recurrent. Recurrent is predictable where the number of road users exceed the road's design capacity like in peak hours. Non-recurrent congestion occurs due to planned or unplanned incidents. Planned incidents include festivals, sporting events, road works and other special events. Unplanned incidents are those unpredictable events like vehicle breakdowns, fires and accidents. Recurrent congestion and planned incidents can be adjusted by commuters with prior information and experience unplanned incidents are unpredictable and thus impact the transport network's reliability and performance.

Traffic congestion is the most painful daily experience for people living in modern cities. Neither rich nor poor cities are immune from traffic congestion and cities with more roads do not have less traffic (Jiang, 2019). The issue of traffic congestion has affected both the developed and the developing countries in different degrees irrespective of the measures taken to curb it. It is a global phenomenon that bedevils the cities of the world (Odeleye, 2018).

Traffic congestion is characterized by slower speeds, increased travel times, elevated crash rates and rising emission, placing an economic, social and environmental burden on communities. In most developing countries, there is the presence of critical traffic congestion areas due to poor traffic management systems which oftentimes lead to congestion collapse. This poor traffic management in Asaba is caused by the following factors;

i. Unplanned cities

Most cities in developing countries predate planning policies, thus roads tend to be narrow and of poor quality. As cities grow in ad-hoc manner, little or no provisions are made towards scaling road capacities, thereby resulting into several bottlenecks in roads which remain congested for extended periods of time. Although the growth of Asaba town is recent, it is characterized by poor planning and non-compliance to the urban development plan in some places which tend to narrow the roads and constrain vehicular movement in such places.

ii. Poor discipline

Asaba town like most developing countries is characterized by drivers that are often not sufficiently trained on the basic traffic rules and regulations. This results in poor attitude and lack of discipline in the use of road, especially at traffic junctions, thereby worsening the already overcrowded situation at the junction. In addition, drivers frequently jump traffic lights and block the intersection, causing traffic congestion. The poor traffic law enforcement in the town further compounds the traffic congestions. In most urban centres, roadside and on-road parking, roadside trading and total disregard of traffic regulations by road users are significant human contributions to the traffic situation (Ogunsanya, 2002).

iii. Archaic Management System

Traffic junctions are often unmanned, and even when a junction is controlled by a cop or a traffic light, the traffic junctions are largely independent of any traffic management strategy. Most countries with fast-growing economies have witnessed a surge in the number of vehicles across major cities. These cities hardly have efficient mass transit system, forcing people to operate private vehicles. The social stigma where people view operating a private vehicle as a sign of prosperity while public transport is perceived to belong to people of lower echelons of the society further compounded the problem of congestion.

iv. Traffic Accidents

The increasing density of population, the growing numbers of motor vehicles of all kinds on the crowded roads, and the lack of proper maintenance and registration of vehicles are generally considered as reasons for the rising incidence of traffic accidents in Asaba town. Traffic accidents are a major problem in both developed and developing countries of the World. It is estimated that 93% of the 1.25 million road traffic-related deaths occur in developing countries and about 50 million people are injured in the world every year even though they have 60% of the World's vehicles (WHO, 2022), most of them in developing countries. With the current traffic safety conditions in developing countries already extremely serious, it will worsen in the near future especially with the rapid increase in the use of motorized transport. This increase in motorized transport also increased accident rates in developing countries. Ogunsanya (1995) posited that accidents in developing countries take 2% of the gross domestic product (GDP), but when just 1% is used for Nigeria. Nigeria lost a staggering 670 million naira in 1995 alone. In Nigeria for instance, the National Bureau of Statistics (NBS) noted that 1,834 people died out of 3,345 road accidents that occurred between January and March 2022. NBS traced road crashes to speed violations, light/sign violations, wrongful overtaking, dangerous driving and tyre-bursting, break failures, route violations and bad roads.

Description of Study Area

Asaba is the administrative headquarters of Oshimili South local government area of Delta state. Asaba Metropolis lies between latitude 6^{o} 08"N to 6^{o} 16"N and longitude 6^{o} 38"E to 6^{o} 44" E of the Greenwich Meridian (Ojiako, Igbokwe & Ossai, 2018). Asaba occupies an area of about 300 square kilometres with a population of about 150,032 which consists of 76,078 males and 73,954 females (NPC, 2006). Using the Nigeria annual growth rate of 3.2% as stipulated by the National Bureau of Statistics, the population of Asaba is projected to 2022 through the population projection equation provided by the United Nations (2007) as given by the formula $nt = pe^{rt}$, where nt is number of people at a new or future date, p is the initial population, e is the natural logarithm base of 2.71828, r is the annual growth rate in percent, and t is the time interval. Thus, the population projection of Asaba city is put at 249,848 as at 2022.

Asaba is located within the tropical climatic zone characterized by a wet warm season and a hot dry season. The rainfall is double maxima with a peak in June and September. The annual range of rainfall is between 1760 millimetres to 2000 millimetres. It has an annual temperature of 26.8^{o}C. Maximum temperature is experienced in December to March while minimum temperature is between June and September. It has a relative humidity of about 80 percent (National Bureau of Statistics, 2011).

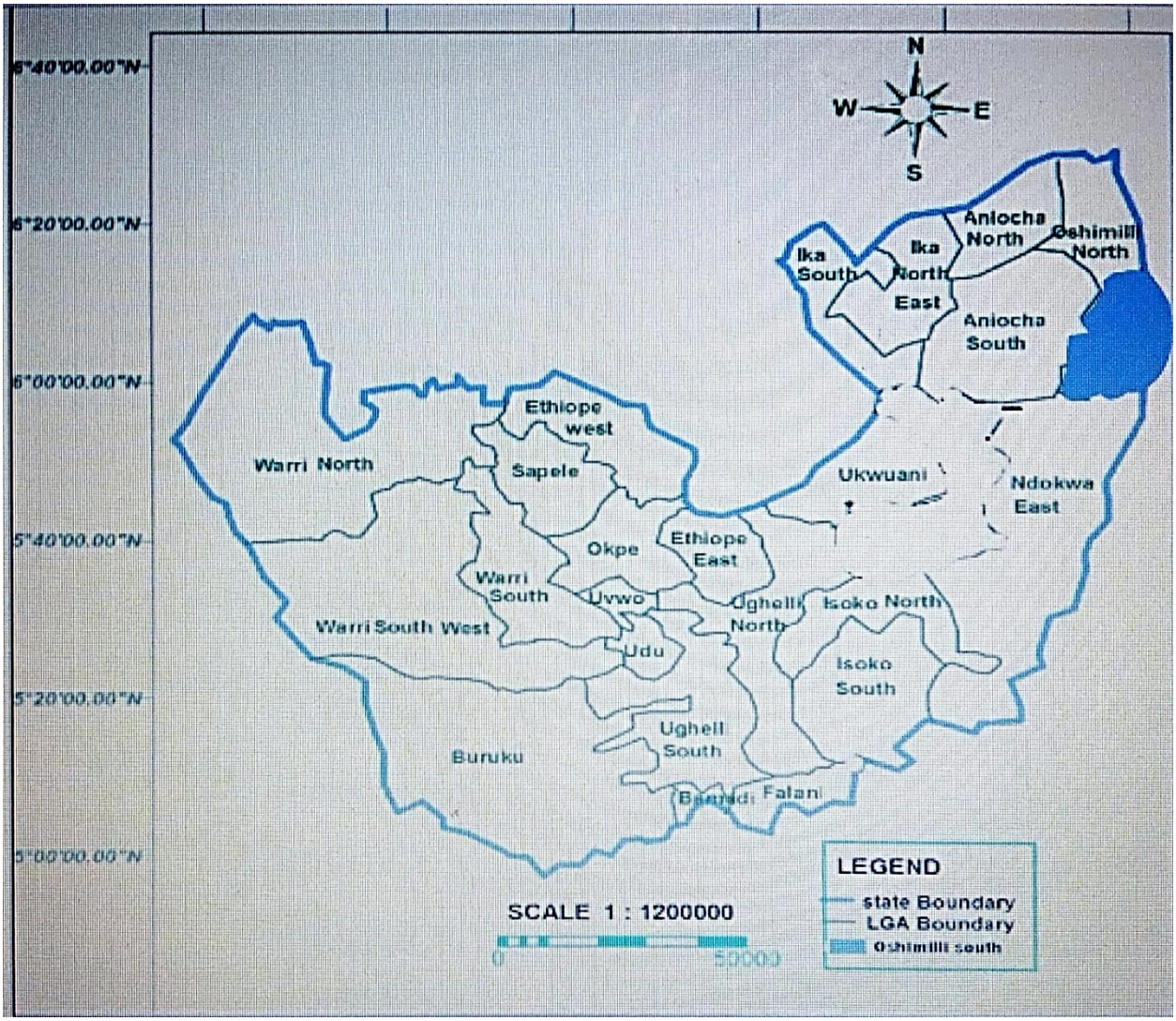


Fig. 1: Map of Delta State showing Oshimili South Local Government Area.
Source: Modified after Ministry of Lands, Survey & Urban Development, Asaba, 2015.

The Igbos are the indigenous people and constitute about 63 percent of the total population of Asaba. Other ethnic groups found in the city which are non-indigenous but form part of the cosmopolitan population include Urhobo, Isoko, Ijaw, Hausa, Itsekiri and Yoruba. Trading activities are very pronounced in Asaba, perhaps due to its nearness to Onitsha, a major commercial hub in the country. Major markets in Asaba include Ogbe-Ogonogo market, Cable Point market, Infant Jesus market, Midwifery market and Oko cattle market.

The increase in population and human activities are exacerbating demand on land and soil resources for agriculture, forestry, urban and industrial uses. The level of motorization, traffic congestion, parking problems, traffic noise, environmental pollution, accidents involving pedestrians and competition for space, both the exchange space meant for other land uses and the movement space are phenomenal issues.

Materials and Methods

The study relied on primary and secondary sources of data. The primary source of data was the questionnaire while the secondary sources were data from National Population Commission

(NPC), National Bureau of Statistics (NBS), Delta State Independent Electoral Commission, and relevant journals in the field of transport and logistics.

Ten enumeration areas were identified based on the demarcation of electoral wards by Delta State Independent Electoral Commission. A simple random sampling technique was adopted to choose a total of 400 respondents using a sample size determined by Taro Yamane (1967) formulae as expressed by $n = {}^{n}/1 + n(e)^2$. For this study, using an error margin of 5% for the population of 249,848 will give a sample size of 400 respondents. Thus, for ten Traffic Enumeration Zones (TEZ) in Asaba, forty copies of the questionnaire were administered in each of the enumeration areas which were selected from drivers, traders, artisans, students, and other people who make use of motorized and non-motorized system of movement. Of the 400 copies of the questionnaire distributed, 300 (75%) were returned while 100 (25%) were not returned.

Table 1: Enumeration Areas in Asaba Metropolis.

Serial no	Name of EAS	Sample size	Number Returned	Number Not returned	Percentage Returned	Percentage Not returned	Percent Returned
1	Okwe	40	30	10	7.5	2.5	10
2	Umuezei	40	30	10	7.5	2.5	10
3	Umuaji	40	32	08	8.0	2.0	10
4	Umuonaje	40	28	12	7.0	3.0	10
5	Umuagu	40	30	10	7.5	2.5	10
6	Ugbomanta	40	40	00	10.0	00	10
7	Westend 1	40	30	10	7.5	2.5	10
8	Westend 2	40	24	16	6.0	4.0	10
9	Cable Point 1	40	28	12	7.0	3.0	10
10	Cable Point 2	40	28	12	7.0	3.0	10
Total		400	300	100	75%	25%	100%

Source: Delta State Independent Electoral Commission (DSIEC), Asaba, 2020.

The data were presented using descriptive statistics like tables and percentages to describe, interpret and explain the findings related to individual opinions and views.

Result of the Findings

Urban Road Transport System in Asaba Metropolis

Asaba was made the capital of Delta State at its creation in 1991. This led to the establishment of many offices of government ministries, departments and agencies as well as other business ventures. There was also increase in population and vehicular traffic in the town, which resulted in the need to construct more roads for ease of movement for both pedestrians and commuters. As at 1998, there were a total of 550 roads consisting of 165 paved roads and 385 unpaved roads (Fig. 2).

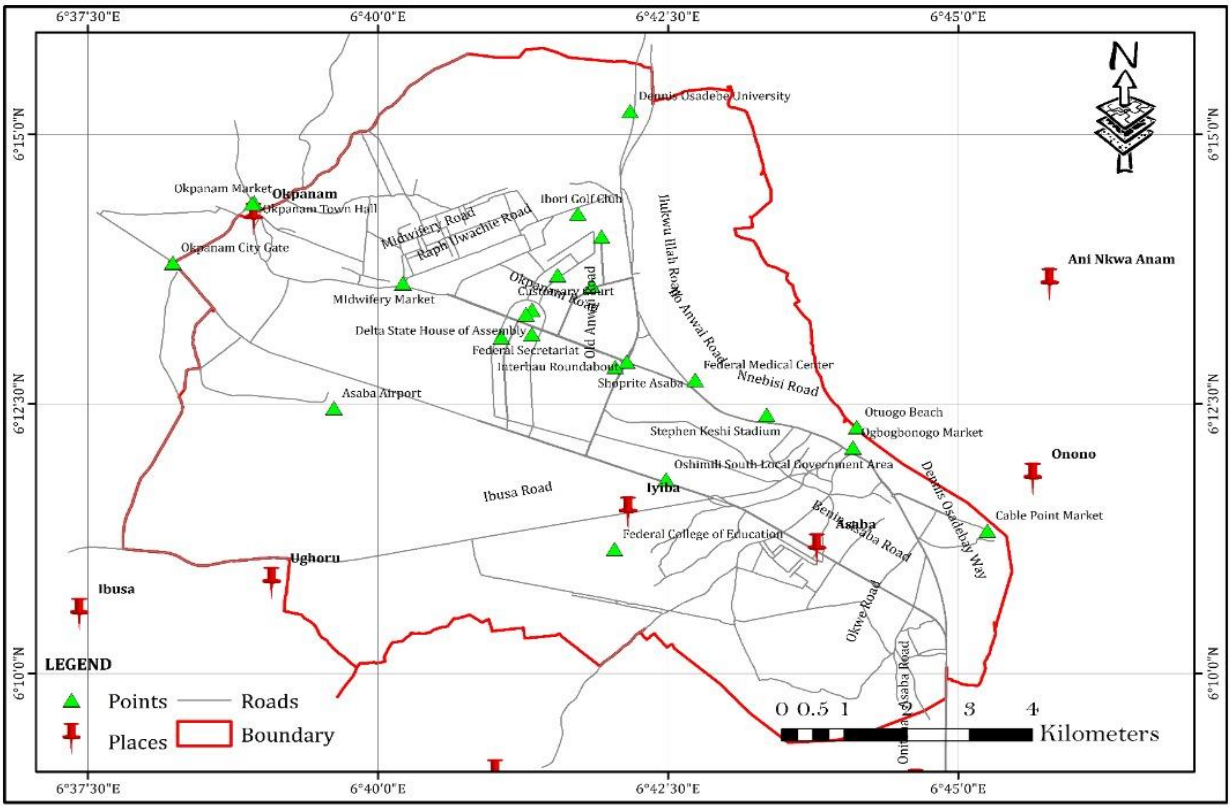


Fig. 1: Map of Asaba Town Showing Urban Road Network
Source: *Modified after Ministry of Lands, Survey and Urban Development, Asaba, 2020.*

The two main stretches of roads that traverses Asaba township are the Benin – Onitsha expressway and the Isioma Onyeobi – Nnebisi – Okpanam roadstch. At the traffic light round about, there are three banks (Zenith, Ecobank and Keystone banks), four schools (Asagba Primary School, Asagba Mixed Secondary School, Osadenis High School, and Government Technical College, Asaba). There is the motor spare parts market called the Mami Market. At the Umuaji junction, there are three major schools (Regina Mundi, Abu-ator Primary School and St. Brigid's Girls Grammar School) and four public facilities (St. Joseph Catholic Church, Ogbeogonogo Market, Asaba City Park, and Holy Trinity Anglican Church).

At Ibusa junction, there are three motor parks, three public facilities (St. Joseph Catholic Hospital, St. John Bosco Catholic Church, and UBA bank) as well as three turning points. At Uche Okolo junction, there are four secondary schools (Asaba girls grammar school, St. Patrick's college, Western mixed secondary school and Hollywood International school), six banks (First Bank, FCMB, Access Bank, Fidelity, Skye and Ecobank) and the Federal Medical Centre.

Along Okpanam road, there are several banks (First bank, UBA, Zenith, Access, and Fidelity banks), Shoprite, Police Headquarters, the Federal Secretariat, the State Secretariat, Head of Service Complex, and House of Assembly Complex. Also, there are schools like the GRA Model Secondary School, Redeemers International School, the School of Midwifery; Asaba Specialist Hospital and Midwifery market.

In terms of public transportation, the most common modes of road transportation in Asaba Metropolis are motorcycle (though restricted to some feeder roads), mini-buses, taxis and tricycle. Tables 2 to 4 illustrates road network coverage in Asaba town between 1998 to 2016. Since then, a lot has been happening in terms of road construction and maintenance in the town.

Table 1. Urban Road Coverage in Asaba Town Between 1998 and 2016

Year	Road type	Number of roads	Percentage (%)	Total Number	Total Distance
1998	Paved Unpaved	I65 385	30 70	 550	510.035
2016	Paved Unpaved	973 676	59 41	 650	 8092.17

Source: Ojiako, Igbokwe & Ossai (2018).

Table 2. Urban Road Types Between 1998 to 2016

Road type		Coverage (%) 1998	Coverage (%) 2016
Major roads		20.25	20.04
Minor roads		30.22	30.35
Streets		49.49	50.09
Total		100	100

Source: Ojiako, Igbokwe & Ossai (2018).

Table 3: Class of Urban Roads Between 1998 to 2016

Road class	Coverage (%) 1998	Coverage (%) 2016
4 Lane expressway	10.23	11.55
Dual carriageway	30.30	30.99
Single lane	30.50	37.34
Other roads	29.45	20.23
Total	100	100

Source: Ojiako, Igbokwe & Ossai (2018).

Asaba urban road network had a total number of 550 roads with a road network distance of 510.035 kilometres. Paved roads accounted for 30% while unpaved roads stood at 70%. By 2016, the total road network had a total distance of 8092.17 kilometres with paved roads accounting for 59% while unpaved roads accounted for 41%.

However, most of these roads are devoid of pedestrian walkways, pedestrian bridges and crossings, traffic signs and lights especially at road intersections. This results in conflict in the movement space between motorized transport and non-motorized means of movement like pedestrians (walking), bicycling and wheelbarrow pushing or cart-pushing which often contribute to traffic accidents in the city.

Factors Causing Parking Challenges Within Asaba Metropolis

The responses from the questionnaires on causes of parking challenges were presented in Table 5.

Table 5. Causes of Parking Challenges in Asaba Metropolis

Reasons/rating	Strongly agree Frequency/ Percent		Agree Frequency/ percent		Disagree Frequency /percent		Strongly disagree Frequency/ Percent	
Poorly designed Parking spaces	200	66.7%	60	20%	30	10%	10	3.3%
Poor utilization of Parking spaces	180	60%	80	26.7%	25	8.3%	15	5%
Inadequacy of parking Lot within the CBD	160	53.4%	70	23.3%	30	10%	40	13.3%
Expensive cost of Parking within the CBD	220	73.4%	60	20%	10	3.3%	10	3.3%
Overzealousness of Enforcement agency	200	66.7%	80	26.7%	20	6.6%	-	-

Source: Fieldwork, 2021

Parking challenges and its attendant competition for space is experienced mostly in the Central Business District (CBD). The CBD in the study area is around Ogbeogonogo market and stretched along Nnebisi road from traffic light by Ezenei junction through Interbau roundabout to House of Assembly quarters on Okpanam road where a lot of banks, the township stadium and several shopping complexes and plazas are situated.

Plate 1. Parking lot at Ogbeogonogo market, Asaba.

Plate 2. Parking lot in Ogbeogonogo market, Asaba.

The findings of the study revealed that about 80 percent of the respondents affirmed that the parking spaces available were poorly designed and there was poor utilization of the available parking spaces in the town. There was also the problem of inadequate parking lot within the CBD. This implies that most of the shopping complexes do not have enough parking spaces for both workers and their respective customers. There was also the problem of expensive cost of parking within the Ogbeogonogo parking lot. This situation forces many customers to park their vehicles by the road sides which further worsened the existing traffic congestion in the area.

Findings revealed that large percentage (92%) of the respondents opined that the overzealousness of the law enforcement agency discouraged customers from patronizing businesses in the area. However, customers who visited banks and shopping complexes enjoyed free parking service even though there are many of the people who park their vehicles on the street.

Factors causing Traffic Congestion within Asaba CBD

The responses of the respondents on the causes of traffic congestion within Asaba Central Business District are presented in Table 6.

Table 6. Causes of Traffic Congestion Within Asaba Central Business District

Causing Factors	Strongly agree Frequency/percent		Agree Frequency/percent		Disagree Frequency/percent		Strongly disagree Frequency/percent	
Increase in income of residents	160	53.3%	80	26.7%	45	15%	15	5%
Increase in vehicle Ownership	200	66.7%	60	20%	30	10%	10	3.3%
Poor town planning	140	46.7%	100	33.3%	45	15%	15	5%
Poor lane discipline	200	66.7%	60	20%	30	10%	10	3.3%
Illegal on-street Parking	200	66.7%	70	23.3%	30	10%	-	-
High commercial/ trading activities	210	70%	60	20%	15	5%	15	5%
Encroachment of Right of way	240	80%	60	20%	-	-	-	-
Archaic management	140	46.7%	80	26.7%	40	13.3%	40	13.3%

Source: Fieldwork, 2021

About 75% of the respondents affirmed that the increased income of residents as well as increase in vehicle ownership constituted reasons for traffic congestion in the study area. In addition, the respondents opined that the high commercial/ trading activities, encroachment of right of way as well as illegal on-street parking constituted serious challenges to free flow of traffic. Findings also revealed that 70% of the respondents attributed traffic congestion to poor town planning of the city, poor lane discipline and out-dated traffic management system.

Table 7: Causes of Road Traffic Accidents in Asaba

Factors/ causes	Strongly agree Frequency/percent		Agree Frequency/percent		Disagree Frequency/percent		Strongly disagree Frequency/percent	
Inexperienced driving	140	46.7%	100	33.3%	45	15%	15	5%
Driving on drugs	210	70%	75	25%	15	5%	-	-
Driving under alcohol Influence	180	60%	75	25%	45	15%	-	-
Over-speeding and Wrong overtaking	160	53.4%	105	35%	20	6.6%	15	5%
Vehicle overloading	210	70%	80	26.7%	10	3.3%	-	-
Break failure	160	53.4%	75	25%	65	21.6%	-	-
Worn-out tyres	190	63.3%	80	26.7%	30	10%	-	-
Insufficient vehicle Maintenance	80	26.7%	100	33.3%	60	20%	60	20%
Poor road design	70	23.3%	150	50%	45	15%	35	11.7%
Poor road maintenance	210	70%	75	25%	15	5%	-	-
Lack of traffic signs And lights	100	33.3%	150	50%	30	10%	20	6.7%
Seat-belt violation	140	46.7%	100	33.3%	40	13.3%	20	6.7%
Non-compliance to Speed limit	180	60%	120	40%	-	-	-	-
Inappropriate penalties	60	20%	150	50%	60	20%	30	10%

Source: Fieldwork, 2021

The driver-related factors for the high rate of accidents in Asaba metropolis according to majority of the respondents (70%) was due to inexperienced drivers. Some people without attending any driving school put their vehicles on the road thereby constituting serious danger to commuters. About 90% of the respondents attributed accidents to driving under the influence of alcohol, drugs and other psychoactive substances.

Meanwhile, over 80% of the respondents attributed accidents to vehicle-related factors. They opined that overloading of vehicles, break failure, burst tyres and general lack of vehicle maintenance were causes of traffic accidents.

The road-related factors of road traffic accidents in the views of majority of respondents (80%) were caused by poor road design and poor maintenance as well as lack of traffic signs, light and other road furniture. Similarly, the non-enforcement of traffic laws like wearing of seat-belt, compliance to speed limits and inappropriate penalties, in the opinion of a large percentage (over 70%) contributed to high traffic accidents in the study area.

Conclusion

This study has examined the challenges of urban road transport system in Asaba metropolis, Nigeria. From the findings of the study, transport planning is geared towards facilitating mobility. Some of the challenges of urban transportation in Asaba metropolis from the study include parking problems especially around the central business district, traffic congestion, traffic accident, traffic noise and pollution. The poorly designed parking spaces, inadequacy of parking lot within the CBD, and the poor utilization of available parking spaces constituted major parking problem in the study area. Also, the expensive cost of parking within the CBD especially the parking lot of Ogbeogonogo market and the overzealousness of law enforcement agency further compounded the problem.

The increased income of residents, increase in vehicle ownership, and the high commercial/trading activities further accounted for the traffic congestion in the study area. The poor town planning of the streets, poor lane discipline, outdated traffic management system, illegal on-street parking and encroachment of right of way compounded the issue of traffic congestion in the study area.

Recommendations

Based on the findings of the study, the following recommendations are made;

i. To mitigate the challenge of parking space in Asaba metropolis, Delta state government through the ministry of lands and urban planning in conjunction with the Delta state capital territory development agency, ensure that before approval is given to build shopping complexes, there should be enough space for parking facilities.

ii. The parking facilities of the Ogbeogonogo market should be highly subsidized so as to encourage people to patronize the facility and hence discourage on-street parking. To allow free flow of traffic in the commercial complexes, the Oshimili South local government in conjunction with the state government should ban on-street parking and street trading.

iii. The construction of more roads, provision of road infrastructure and the provision of pedestrian bridges and crossings which will reduce congestion and accidents especially among the aged, children and people living with disabilities.

iv. There should be regular public enlightenment by the federal roads safety corps and Delta state traffic management agency (DETSMA) on poor lane discipline, illegal on-street parking and broken-down vehicles should be evacuated and enforcement of traffic laws such as seat-belt wearing and compliance to speed limits in the city centre and appropriate penalties should be intensified.

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